Division of Land / Environmental Review

City Hall • 200 N. Spring Street, Room 750 • Los Angeles, CA 90012

FINAL ENVIRONMENTAL IMPACT REPORT
Volume 20
Appendix FEIR-16 through Appendix FEIR-31

NBC Universal Evolution Plan

ENV-2007-0254-EIR
STATE CLEARINGHOUSE NO. 2007071036
Council District 4

THIS DOCUMENT COMPRISES THE SECOND AND FINAL PART OF THE ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROJECT DESCRIBED. THE DRAFT EIR (VOLUMES 1 THROUGH 27) WHICH WAS PREVIOUSLY CIRCULATED FOR PUBLIC REVIEW AND COMMENT, COMPRISES THE FIRST PART.

Project Address: 100 Universal City Plaza, Universal City, CA 91608

Project Description: Universal City Studios LLC, proposes the NBC Universal Evolution Plan (the "Project"), which sets forth the framework to guide the development of an approximately 391-acre site located in the east San Fernando Valley near the north end of the Cahuenga Pass (the "Project Site"). The Project, as proposed, would involve a net increase of approximately 2.01 million square feet of new commercial development, which includes 500 hotel guest rooms and related hotel facilities. In addition, a total of 2,937 dwelling units would be developed. Implementation of the proposed Project would occur pursuant to the development standards set forth in two proposed Specific Plans. The proposed Universal City Specific Plan addresses development within the portion of the Project Site located within the City of Los Angeles, whereas the proposed Universal Studios Specific Plan addresses development within the portion of the Project Site located under the jurisdiction of the County of Los Angeles. Under the proposed Project, portions of the Project Site that are currently in the County of Los Angeles would be annexed into the City of Los Angeles, while other areas would be detached from the City of Los Angeles and returned to the jurisdiction of the County of Los Angeles. The proposed annexation/detachment reflects the Applicant's objective to establish jurisdictional boundaries that follow existing and planned on-site land use patterns.

APPLICANT:
Universal City Studios LLC

PREPARED BY:
Environmental Review Section
Los Angeles City Planning Department

September 2012

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SUPPLEMENTAL ASSESSMENT OF ENVIRONMENTAL NOISE

Alternative 10 Analysis for the NBCUniversal Evolution Plan

August 2012

By

Veneklasen Associates, Inc.

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I. Introduction

The purpose of this report is to assess the potential significance of noise impacts associated with the construction and operation of Alternative 10 – the No Residential Alternative ("Alternative 10"), and to compare the potential impacts of Alternative 10 to those of the proposed NBC Universal Evolution Plan project ("Project") as analyzed in the NBC Universal Evolution Plan Draft EIR ("DEIR").

Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the proposed Mixed-Use Residential Area of the Project (existing Back Lot Area), Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area that were previously proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Figure 1 provides an illustration of the Conceptual Site Plan for Alternative 10.

This memorandum incorporates by reference the information contained in the Assessment of Environmental Noise, prepared by Veneklasen Associates, Inc. (March 2010), which is included as Appendix F to the DEIR, as well as the summary of such information contained in Section IV.C, Noise, of the DEIR.

II. Thresholds of Significance

The significance criteria applied to the evaluation of Alternative 10 is the same as was used for the proposed Project. As described in the DEIR, to provide the most conservative evaluation of potential noise impacts, an analysis of the noise regulations in the City and County Noise Ordinances and the thresholds in the *City of Los Angeles CEQA Thresholds Guide* was undertaken to determine which were the most conservative. Based on this analysis, it was found that the most conservative noise standard depends on the noise-generating activity (i.e., construction, operation, or roadway noise). The following significance criteria applied to the Project also would apply to a determination regarding Alternative 10's impacts:

A. Significance Threshold For On-Site Operational Noise Sources

- During daytime hours (7 a.m. to 10 p.m. for Project operations), on-site Project noise sources do not result in an L_{50} noise level at the identified offsite receptor locations of more than 50 dBA or the ambient noise level if the ambient noise level is above 50 dBA.

- During nighttime hours (10 p.m. to 2 a.m. for Project operations), on-site Project noise sources do not result in an L_{50} noise level at the identified off-site receptor locations of more than 45 dBA or the ambient noise level if the ambient noise level is above 45 dBA.

- During daytime hours (7 a.m. to 10 p.m. for Project operations), on-site Project noise sources do not result in an L_{max} noise level at the identified offsite receptor locations of more than 70 dBA or the ambient noise level if the ambient noise level is above 70 dBA.

- During nighttime hours (10 p.m. to 2 a.m. for Project operations), on-site Project noise sources do not result in an L_{max} noise level at the identified offsite receptor locations of more than 65 dBA or the ambient noise level if the ambient noise level is above 65 dBA.

B. Significance Threshold For Roadway Sources

- Project motor vehicle travel, at the property line of affected uses, causes an increase in CNEL levels of 3 dBA to or within the "normally unacceptable" or "clearly unacceptable" category, as defined in the City's General Plan Noise Element (Exhibit I: Guidelines for Noise Compatible Land Use), or any 5 dBA or greater noise increase.

C. Significance Threshold For Construction Noise

1. *Daytime Construction*

- Construction activities after 7 a.m. and before 7 p.m. would exceed L_{eq} ambient exterior noise levels by 5 dB or more at a noise sensitive use; or

- Construction activities after 7 a.m. and before 7 p.m. would exceed L_{50} of 60 dBA at a noise sensitive use.

2. *Nighttime Construction*

- Construction activities after 7 p.m. and before 7 a.m. would exceed ambient L_{eq} exterior noise levels at any dwelling, hotel, apartment or other place of residences by 3 dB or more; or

- Construction activities after 7 p.m. and before 7 a.m. would exceed L_{50} of 50 dBA at single-family uses, L_{50} of 55 dBA at multifamily uses, and L_{50} of 60 dBA at semi-residential or commercial uses.

D. Significance Threshold For Vibration

- Project construction activities would cause a ground-borne vibration level to exceed 0.2 inches/second peak particle velocity at non-engineered timber and masonry structures.

- Project construction activities would cause a ground-borne vibration level to exceed 0.3 inches/second peak particle velocity at engineered concrete and masonry (no plaster) buildings.

- Project construction activities would cause a ground-borne vibration level to exceed 0.12 inches/second peak particle velocity at buildings extremely susceptible to vibration damage, such as historic buildings.

- Project construction activities would cause a ground-borne vibration level to exceed 0.5 inches/second peak particle velocity at reinforced-concrete, steel, or timber (no plaster) structures.

III. Project Design Features

For the purposes of this analysis it is assumed that the same Noise regulations of the proposed Universal Studios Specific Plan and the proposed University City Specific Plan would apply to Alternative 10. For additional detail on these sound attenuation regulations, please reference Section IV.C, Noise, of the DEIR.

IV. Methodology

The noise modeling techniques utilized in this Alternative 10 noise study were consistent with the methodology used in the DEIR. To evaluate the operational and construction noise source impacts the same computerized acoustic modeling program used in the DEIR was utilized for all analysis. In order to determine the potential noise impacts due to the changes in traffic volumes from development of Alternative 10, the Federal Highway Administration's Traffic Noise Model (TNM) was used to predict roadway noise levels at the thirty two (32) traffic noise receptor locations discussed in the DEIR. The analysis at these 32 locations addresses the areas with the greatest potential noise increases due to Alternative 10 traffic noise, and is based on data provided by Raju Associates, Inc. and Gibson Transportation Consulting.

V. Project Impacts

A. Operational Noise

1. *On-Site Noise Sources*

Under CEQA, an assessment of a project's potential noise impacts considers only the new sources which a project would introduce. Thus, this report analyzes the potential noise impacts of the new uses proposed by Alternative 10. It is important to note that the analysis performed was conservative because it assumed that all of the major Alternative 10 noise sources are operating simultaneously.

Table 1 indicates the noise sources associated with Alternative 10 which were applied in the model. As with the DEIR, noise was analyzed under two sets of models (daytime and nighttime). Tables 2 & 3 compare the computer calculated hourly L_{50} and L_{max} noise levels, respectively, at the 47 receptor locations evaluated in the DEIR[1]. As with the DEIR, the analysis considered a conservative approach by assuming that all Alternative 10 sources at the Theme Park and all public areas were operating simultaneously and the Universal Studios Hollywood trams were operating at a maximum capacity of 23 trips per hour. The results and analysis were split into two different time periods to compare the results to the proper time periods prescribed in the County Noise Ordinance (7 a.m. to 10 p.m. & 10 p.m. to 7 a.m.). These time periods also correspond to the normal operating hours of the entire operation (7 a.m. to 10 p.m.) and after-hours operation that does not include the Theme Park (10 p.m. to 2 a.m.). As discussed above, the noise thresholds for this analysis are the same as those used in the DEIR.

The results summarized in Table 2 indicate that Alternative 10 sound sources would be in compliance with the County's standard of L_{50} of 50 dBA or ambient for daytime and L_{50} of 45 or ambient for nighttime, as they do not exceed the noise standards at any of the 47 receptor locations during the corresponding hours. Further, Table 3 indicates that all of the L_{max} calculated levels for Alternative 10 sound sources meet the significance criteria established for this analysis. As on-site Alternative 10 sources would be in compliance with the established significance criteria, impacts from on-site Alternative 10 sources would be less than significant. The impacts of Alternative 10 also would be similar to those of the Project.

[1] As discussed in further detail in Appendix F and Section IV.C, Noise of the DEIR, it is generally not necessary to evaluate all of the metrics (L_{50}, L_{25}, $L_{8.3}$, $L_{1.7}$, L_{max}) in the County Noise Ordinance. The L50 noise metric was selected as the threshold, as this noise metric, in conjunction with the L_{max} noise metric, was concluded, based on a series of hourly noise measurements at the Project Site, to be the most critical for comparison to the County Noise Ordinance. Therefore, if the L_{50} and L_{max} noise levels are in compliance with the County Noise Ordinance, then Project noise sources would also be in compliance with the other noise metrics (i.e., L_{25}, $L_{8.3}$, and $L_{1.7}$) included in the County Noise Ordinance.

2. *Roadway Sources*

Traffic noise models of the surrounding community area were constructed using Federal Highway Administration's Traffic Noise model (TNM) modeling software to determine ambient noise increases due to traffic increases from Alternative 10. Based upon traffic flow information provided by Raju Associates, Inc., the Project transportation consultant, four traffic scenarios were modeled: Existing conditions; Existing conditions including the Alternative 10 with mitigation measures and the proposed Transportation Demand Management (TDM) program; 2030 conditions without the Project; 2030 conditions with Alternative 10 with mitigation measures and the proposed TDM program.

Table 4 lists the areas that were examined by the model and the results of the analysis. These represent all known areas with residences, churches, and schools within effectible distance from the road segments with the highest anticipated traffic increases due to Alternative 10. Figure 2 shows the areas of identified sensitive receptors and the identified road segments of the modeling effort. Appendix B contains the modeling results from the TNM program for this analysis.

Similar to the analysis for the Project, the analysis shown in Table 4 indicates that all of the traffic receptors would experience an increase in traffic noise levels from Alternative 10 that is less than 3 dB with mitigation measures.

As described above and as elaborated on in 'Significant Thresholds" Section of the DEIR, it is recognized that:

- 3 dB change in noise level is considered 'Just Perceptible'
- 5 dB change in noise level is considered 'Clearly Perceptible'
- 10 dB change in noise level is considered 'Twice or Half as Loud'.

Thus, the increases in noise from Alternative 10 traffic at the receptor locations, which are all below 3 dB, would not be perceptible. Accordingly, with the use of the more restrictive CEQA threshold of a 3 dB noise increase for traffic noise, the Alternative 10 conditions for the existing year as well as 2030 would not exceed the established significance criteria, and thus impacts from roadway sources would be less than significant and similar at most intersections to the Project.

B. Construction Noise

The assessment of a project's noise impact includes the construction process that is connected with the implementation of that project. Normally construction would occur over a number of months or years and is considered short term and a temporary activity, but must still meet applicable construction noise ordinance standards set forth for the construction process.

As discussed above, daytime (7 a.m. to 7 p.m.) construction activities that exceed ambient L_{eq} noise levels by 5 dB or more at a noise sensitive use[2], or that exceed an L_{50} of 60 dBA at a noise sensitive use, would be significant. In addition, nighttime construction activities (7 p.m. to 7 a.m.) that would exceed ambient L_{eq} exterior noise levels by more than 3 dB at any dwelling, hotel, apartment or other place of residence, or that would exceed an L_{50} of 50 dBA at single-family uses, L_{50} of 55 dBA at multifamily uses, and L_{50} of 60 dBA at semi-residential/commercial uses, would be significant. The Project Design Features outlined in the DEIR require that the Applicant shall maintain the proposed Project's construction in compliance with applicable City and County Noise Ordinance regulations. While these Project Design Features will have a substantial effect in reducing construction noise, to be conservative, as with the Project the noise-reducing impact of these Project Design Features was not included in the modeled analysis for Alternative 10. Accordingly, the construction noise analysis likely overestimates potential noise levels related to construction activity.

[2] Noise sensitive uses generally include residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks. (See Section I, Noise L.A. CEQA Thresholds Guide).

Alternative 10 would be constructed at varying times in different areas of the Project Site. Multiple construction activities, with different mixes of construction equipment, could take place simultaneously in different areas of the Project Site. The CEQA Thresholds Guide provides a list of typical types of construction equipment and the associated sound levels that can be expected. Table 5A provides this list of typical types of construction equipment and associated sound levels that can be expected to be experienced during Alternative 10 demolition and construction. Despite resulting in a less efficient and more costly construction equipment mix, Alternative 10 would not use pile driving as part of its construction equipment mix in order to minimize potential noise and vibration impacts to the surrounding community.

Table 5B, which is also taken from the CEQA Thresholds Guide, separates the construction activities into five (5) different phases and provides associated noise levels based on a specific mix of construction equipment. The five (5) phases of construction are as follows:

1. Ground Clearing
2. Excavation
3. Foundation
4. Erection
5. Finishing

Noise levels generated by each of these phases are shown in Table 5B, and are the basis for the calculation of Alternative 10 construction noise impacts.

For this analysis, all 47 receptor locations were analyzed to predict the potential maximum levels of construction noise at each location during the most conservative construction phase. The Project Site was broken down into ten (10) separate construction sites with a total of 45 possible construction scenarios (as shown in Figure 3) that could potentially occur from the simultaneous development of two construction sites. As a conservative approximation, the maximum construction that may occur within each construction zone was evaluated in the model, and the construction scenarios were used to estimate the maximum impact that could be experienced at each of the receptor locations with simultaneous development of two construction sites. The combined impact of construction in multiple construction zones was evaluated to identify the potential impacts due to Alternative 10 construction. Similar to the Project analysis, every receptor's exposure from Alternative 10's construction was evaluated, based on the greatest un-mitigated construction noise impact generated by Alternative 10. The construction impact at every receptor is partially influenced by the location of development. In this analysis, all construction development locations (i.e., any construction site locations within the Project Site) as well as all construction scenarios (i.e., excavation, grading, etc.) were considered. The model's purpose was to develop the possibility of evaluating the construction sites at any time, in any phase of construction, and to determine the potential unmitigated maximum noise impact that might be experienced at the receptor locations. Specifically, two modes of construction noise source distribution were also assumed - horizontal work, including ground clearing, excavation and foundation work; and vertical work, including erection and finishing. The vertical work was modeled at elevations based upon the building heights noted within the proposed Height Districts for the Alternative 10 Conceptual Plan, while the horizontal work was all assumed to take place at grade.

1. *Daytime Construction*

Each receptor area was evaluated for the maximum construction noise impact to which it would be exposed regardless of location of construction and the results of this analysis are tabulated in Table 6.

Similar to the Project, the results presented in Table 6 indicate that un-mitigated construction noise may exceed the thresholds of significance at almost all of the receptor locations during daytime hours. Consequently, daytime Alternative 10 construction would result in a significant noise impact prior to implementation of mitigation measures and similar impacts to the Project.

2. *Nighttime Construction*

Similar to the analysis for daytime hours, each receptor area was evaluated for the maximum construction noise impact to which it would be exposed from nighttime construction and the results of this analysis are also tabulated in Table 6.

Similar to the Project, the results presented in Table 6 also indicate that un-mitigated construction noise may exceed the thresholds of significance at all receptor locations during nighttime hours. Consequently, unmitigated nighttime Alternative 10 construction would also result in a significant noise impact without mitigation measures and similar impacts to the Project.

3. *Proposed Construction Mitigation Measures for Alternative 10*

Construction noise impacts on the Project Site would be addressed by the following, which would apply to both the Project and Alternative 10:

- When Project construction staging occurs within 500 feet of an occupied residential structure that is located outside of the boundaries of the proposed alternative Project, the contractor shall:
  - Locate stationary construction equipment away from the occupied residential structure or install temporary acoustic barriers around stationary construction noise sources.
  - Shut off construction equipment that is not in use.

- Project construction or grading activity shall be permitted during the following times:
  - Monday through Friday (non-legal Holidays) between 7:00 a.m. and 7:00 p.m.;
  - Saturdays between 8:00 a.m. and 6:00 p.m.

  <u>Exceptions</u>
  - Notwithstanding the above permitted times, the following construction activities may occur between 7:00 p.m. and 7:00 a.m. Monday through Friday (non-legal Holidays), between 6:00 p.m. and 8:00 a.m. on Saturdays, and on Sundays and legal Holidays:
    - Construction activities conducted within an enclosed structure that either: (1) do not result in an audible sound outside of the boundaries of the proposed alternative Project; or (2) are located more than 400 feet from an occupied residential structure that is located outside of the boundaries of the proposed alternative Project.
    - Those construction activities which must occur during otherwise prohibited hours due to restrictions imposed by a public agency.
    - Roofing activities in the Entertainment, Business, and Studio Areas which cannot be conducted during daytime hours due to weather conditions, provided at least 72 hour advance written notice is submitted to the County Department of Public Works or City Building and Safety Department.
    - Emergency repairs, such as repairs to damaged utility infrastructure.
    - Project construction activities which cannot be interrupted (e.g., continuous concrete pours and other activities which affect health and safety as approved by the Department of Building and Safety).

4. Daytime and Nighttime Construction Impacts Following Implementation of Mitigation

The mitigation measures described above are proposed to reduce construction noise impacts on area receptors. These mitigation measures would reduce the impacts onto the receptors, but depending on the receptor and ambient noise levels at the time of construction, daytime construction impacts may remain significant. During nighttime construction, impacts would be reduced to less than significant levels, except for those atypical conditions when exterior nighttime construction pursuant to the stated exceptions would occur. Accordingly, the construction impact of Alternative 10 for construction would be similar to that of the Project.

C. Construction Vibration

1. *Impacts*

Ground-borne vibration impacts were analyzed by identifying the potential construction equipment (vibration sources) that may be used during construction, measuring the distance between the vibration sources and surrounding structure locations, calculating the potential vibration that may be experienced at the off-site structure, and comparing that potential vibration to the significance threshold.

The FTA Report provides the following vibration source levels for various types of construction equipment based on measured data.

Equipment	Peak Particle Velocity (PPV) at 25 feet
Pile Driver (upper range)	1.518 inches/second
Pile Driver (typical)	0.644 inches/second
Large Bulldozer	0.089 inches/second
Caisson Drilling	0.089 inches/second
Loaded Trucks	0.076 inches/second
Jackhammer	0.035 inches/second
Small Bulldozer	0.003 inches/second

As noted in the table above, the most significant vibration source is produced by a pile driver. Despite resulting in a less efficient and more costly construction equipment mix, the Applicant has chosen to not include pile driving as part of its construction equipment mix in order to minimize noise and vibration impacts to the surrounding community.

As presented in the DEIR, vibration attenuates with distance, and the majority of the Project Site boundaries are separated from off-site structures by roadways or other infrastructure, vibration would not impact off-site structures to the north, west, or south of the Project Site. As some portions of the Hollywood Manor area to the east shares a common boundary with the Project Site, the Hollywood Manor area may be potentially impacted by Alternative 10 construction vibration. The potential vibration impact onto the Hollywood Manor area is analyzed based on the vibration source levels discussed above, a potential construction equipment mix, the type and quality of soils along the eastern property boundary, and Alternative 10's proposed construction site plan (Figure 3).

Because the typical home construction in the Hollywood Manor receptor area consists of non-engineered timber and masonry structures, this report analyzed potential vibration impacts to the Hollywood Manor area using the 0.2 inches/second peak particle velocity significance threshold.

Based on the analysis performed, and adjusting for distance, it was determined that construction activity occurring on the southeastern-most proposed construction area, as highlighted on Figure 4, may yield peak particle velocity levels in excess of 0.2 inches/second in the Hollywood Manor area due to the construction equipment's potential proximity to the Project Site's eastern property line.

Accordingly, because such levels are above the 0.2 inches/second peak particle velocity significance threshold for non-engineered timber and masonry structures, construction and grading along the southeastern-portion of the eastern property line has the potential to result in significant impacts in the Hollywood Manor area.

2. Proposed Mitigation Measures

Applicant will implement a construction vibration mitigation program, which will reduce vibration impacts generated by construction along the Project Site's eastern property line by implementing the following measures:

- When Project construction occurs on the southeastern portion of the proposed grading area as highlighted on Figure 4 of this report, all construction equipment - with the exception of small bulldozers and loading trucks or equivalent construction equipment with peak particle velocity in the range of 0.003-0.076 inches/second - shall operate no closer than 30 feet from the property line adjacent to the Hollywood Manor receptor area.

- When Project construction occurs on the southeastern portion of the proposed grading area as shown on Figure 4 of this report, all loading trucks shall operate no closer than 15 feet from the property line.

3. Impacts after Implementation of Proposed Mitigation Measures

With incorporation of these mitigation measures, vibration would be below the 0.2 inches/second peak particle velocity significance threshold for non-engineered timber and masonry structures, and as a result, the mitigation measures would reduce impacts from vibration to a less than significant impact. Accordingly, the construction impact of Alternative 10 for construction would be less than significant and similar to that of the Project.

D. <u>Hauling Noise</u>

As discussed on page 1010 of the Draft EIR, under the Project's composite construction scenario, construction haul traffic would increase the hourly noise level by more than 1.0 dB at two of the 32 traffic receptors. Specifically, assuming peak rates of 89 haul trips per hour along Forest Lawn Drive due to construction in the Mixed-Use Residential Area (see page 635 of the Draft EIR), the Rancho Neighborhood would experience a maximum increase of 6.9 dB, and thus result in a significant impact. As discussed on page 1010 of the Draft EIR, the significant impact only would occur if hauling resulted in more than 78 haul trips per hour on Forest Lawn Drive. With implementation of Mitigation Measure C-4, this impact would be reduced to a less than significant level.

Under Alternative 10, hauling related to construction in the Studio, Entertainment, and Business areas would be similar to the Project. However, due to the decreased level of development in the Back Lot Area under Alternative 10, hauling under peak flow conditions along Forest Lawn Drive would be reduced to half of the Project's haul trips. Thus, Alternative 10 would result in a peak rate of approximately 45 haul trips per hour along Forest Lawn Drive. Because Alternative 10 would result in less than 78 haul trips per hour along Forest Lawn Drive, no significant impact would occur at the Rancho Neighborhood. Accordingly, under Alternative 10, Mitigation Measure C-4 would not be required.

E. Cumulative Impacts

The assessment of noise impacts due to the development of Alternative 10 and the development of the off-site related projects onto the receptor areas due to construction, traffic and anticipated operations were evaluated. The locations of the off-site related projects are shown in Figure 5 and are identical to the projects considered in the DEIR. As identified in the DEIR, the type of development of the off-site related projects varied from mixed-used residential to commercial-warehouse[3].

1. *Construction Impacts*

a. Construction Noise

Development of off-site related projects and the Alternative 10 plan may occur simultaneously and thus all of the potential developments identified in the DEIR were evaluated. As discussed in the DEIR, seven nearby related projects were considered in the evaluation, as the remainder of the other related projects were located at a far way enough distance from the receptors as to not contribute toward any potential impact on cumulative noise. The same noise emissions due to construction utilized in the DEIR for the seven identified off-site related projects were considered in the current analysis. The results of this analysis are presented in Table 7.

With the exception of receptor location PIC-1, the construction noise from the off-site related projects would not materially increase the construction noise levels at the receptor locations. However, cumulative construction noise levels from the Project and off-site projects would result in noise levels that are above the threshold of significance during daytime and nighttime hours at almost all of the receptor sites, and thus with or without incorporation of mitigation measures, cumulative construction noise would result in a significant impact.

b. Hauling Noise

Construction Hauling from the off-site projects and the Alternative 10 plan were also considered in the cumulative construction analysis. The two roadway segments utilized in the construction hauling are Lankershim Boulevard and Forest Lawn Drive. As some of the off-site related projects may utilize the same roadway segments, the cumulative impact for all projects may have the potential to exceed 5 dB.

As discussed in Section V. Project Impact D. Hauling Noise, above, noise from Alternative 10 hauling under peak flow conditions would result in a less than significant impact at the Rancho Neighborhood given the reduction in peak haul trips per hour along Forest Lawn Drive. Related projects along or adjacent to Forest Lawn Drive would potentially utilize the same hauling roadway segments as Alternative 10. Since hauling information for the proposed projects along or adjacent to Forest Lawn Drive are not publicly available, and because such projects' haul trips have the potential to occur on the same segment of Forest Lawn Drive as Alternative 10, it is conservatively assumed that noise increases with these additional trips could exceed 5 db at the Rancho Neighborhood under Alternative 10. As such, without the incorporation of mitigation measures, cumulative construction hauling could result in a potentially cumulative significant impact at the Rancho Neighborhood. It is important to note that such significant impact only would occur if hauling from the proposed projects along or adjacent to Forest Lawn Drive is concurrent with Alternative 10's hauling, and if such concurrent hauling resulted in more than 78 haul trips per hour. Accordingly, Mitigation Measure C-5, as modified below, would apply to Alternative 10. With incorporation of Mitigation Measure C-5, impacts would be reduced to a less than significant level.

Mitigation Measure C-5, as revised:
In the event that there are concurrent cumulative hauling activities from Alternative 10 and related projects along or adjacent to Forest Lawn Drive that result in 78 haul trips per hour, the Applicant or its successor shall monitor whether such hauling results in increases of noise greater than 5 decibels above

[3] Refer to DEIR, Section III, Table 6.

ambient within the Rancho Neighborhood in the City of Burbank. If noise increases generated by the concurrent hauling from the Project and related projects along Forest Lawn Drive exceed 5 decibels above ambient, the Applicant or its successor shall install or contribute to the installation of a sound wall consistent with the following:

- The installation of a noise barrier shall occur along the north end of Forest Lawn Drive. The barrier shall extend approximately 0.4 mile along Forest Lawn Drive across from the Rancho Neighborhood. The barrier may consist of plywood panels (fifteen feet in height) and each panel shall overlap each end by 4 inches.
- The Applicant or its successor shall post notices on the temporary noise barrier adjacent to the north side of Forest Lawn Drive that no unauthorized materials (such as graffiti or posters) may be posted on the temporary barrier and shall visually inspect and remove graffiti and/or unauthorized posters from the temporary barrier within 24 hours, as necessary.

2. *Operational Impacts*

The cumulative noise from off-site related projects as well as Alternative 10's anticipated operational noise impacts were considered at the identified receptor areas. As in the DEIR, the anticipated operational noise from the off-site related projects was assumed to be HVAC system noise. With the exception of PIC-1, the noise impacts onto the receptors from the off-site projects were negligible as presented in Table 8. The noise impact due to the Universal Metro project raised the noise level at PIC-1 by 4 dB, however, the permissible noise thresholds were still met. The Metro Project was included in the DEIR analysis, and thus for purposes of consistency it was assumed in the cumulative operational impacts analysis for Alternative 10. However, the Metro Project has been terminated, and thus it would not result in any operational noise increase when combined with Alternative 10.

Overall, as noted on Table 8, the cumulative operational noise would not exceed the established significance criteria at any of the receptor location and the impacts would be less than significant.

3. *Roadway Impacts*

The cumulative impact from Alternative 10 and the off-site related projects, the locations of which are shown in Figure 5, due to their respective traffic generated noise onto the sensitive traffic receptors identified in Figure 2 was evaluated. The traffic scenario evaluated was cumulative increase for future (Year 2030) conditions with mitigation and the proposed Transportation Demand Management (TDM) program.

Table 9 presents the changes in noise from the cumulative traffic noise due to the build out of Alternative 10 and the off-site related projects. The greatest noise increase occurred at Traffic Receptor 20, with an increase of 2.4 dB, which is less than the 3 dB threshold. Thus, the cumulative increases in noise from Alternative 10 and the off-site related project's traffic at the traffic receptor locations are all below the CEQA threshold of 3 dB and the cumulative traffic impacts would not exceed the established significance criteria. Accordingly, impacts from roadway sources would be less than significant.

VI. Conclusions

The development of Alternative 10 was evaluated based on the methodology completed for the Project and the potential impacts were compared to the significance thresholds established in the DEIR.

Existing operational noise sources at the Project Site are in compliance with the criteria discussed in the Significance Thresholds section. As described in this report and in the attached tables, all of the potential future Alternative 10 noise sources would comply with the more conservative L_{50} of 50 dBA and the L_{max} of 70 dBA standard of the proposed Specific Plans during the daytime operations, and the more conservative L_{50} of 45 dBA and the L_{max} of 65 dBA standard

of the proposed Specific Plans during the nighttime. Thus, operational impacts would be less than significant and similar to the Project.

The changes in roadway traffic noise resulting from Alternative 10 will not affect the sensitive traffic receptors whereby a significant impact would occur. On the contrary, the impacts by traffic generated noise due to the Alternative 10 plan would be mostly minimal and in all cases less than the 3 dB threshold used in the DEIR and established by the CEQA thresholds guidelines. Thus, roadway noise impacts for Alternative 10 would be less than significant and similar to the Project.

Construction noise had been identified as a potentially significant impact to the identified residential receptors under the Project conditions. With the Alternative 10 plan, construction noise impacts are still anticipated to be potentially significant during both daytime and nighttime hours. The potential impacts for daytime construction may be reduced with implementation of the proposed Project Design Features and mitigation measures, including a construction noise mitigation plan developed for each construction area, but not to less than significant levels. However, mitigation measures proposed for nighttime construction would reduce impacts to a less than significant level. As described above and elaborated upon in the DEIR, notwithstanding certain limited exceptions, construction during nighttime hours only would be allowed if construction activities were conducted within an enclosed structure located more than 400 feet from an occupied residential structure that is located outside the Project Site.

In addition, construction hauling impacts are deemed less than significant due to the decreased level of development in the Backlot Area, whereby hauling under peak flow conditions along Forest Lawn Drive would be reduced to approximately half of the Project's haul trips. Alternative 10 would result in a peak rate of approximately 45 haul trips per hour along Forest Lawn Drive. Because Alternative 10 would result in less than 78 haul trips per hour along Forest Lawn Drive, no significant impact would occur at the Rancho Neighborhood.

As in the case with the Project, the cumulative effect of off-site related projects and Alternative 10's impact on the residential receptors would be less than significant. The noise increases would be below the established thresholds of L_{50} of 50 dBA and the L_{max} of 70 dBA during daytime and conservative L_{50} of 45 dBA and the L_{max} of 65 dBA during nighttime.

Similar to the Project, the cumulative roadway impacts for the off-site projects and the Alternative 10 plan at the sensitive traffic receptors were determined to be less than significant and below the significance threshold.

Lastly, and also similar to the Project, the cumulative construction impact for the off-site related projects and Alternative 10 would result in noise levels that are above the threshold of significance during daytime and nighttime hours at most receptors prior to mitigation and incorporation of Project Design Features.

Table 1 Listing of Alternative 10 Noise Sources

Source Identifier	Source Name	Comment
P-1 Parking	Parking Structure - Alarm	Business Area Sound Source
P-7 Parking	Parking Structure - Alarm	
Office O-1	Commercial HVAC	
Office O-2	Commercial HVAC	
BLGS S-2	Commercial HVAC	
BLGS S-3	Commercial HVAC	
BLGS S-17	Commercial HVAC	
BLGS S-18	Commercial HVAC	
T-2	Commercial HVAC	Entertainment Area Sound Source
T-3	Commercial HVAC	
T-5	Commercial HVAC	
T-6	Commercial HVAC	
T-7	Commercial HVAC	
P-13 Parking	Commercial HVAC	
CW Retail C-1	Commercial HVAC	
CW Retail C-4	Commercial HVAC	
Hotel H-1	Commercial HVAC	
Hotel H-2	Commercial HVAC	
BLGS S-16	Commercial HVAC	
P-3 Parking	Parking Structure - Alarm	
P-4 Parking	Parking Structure - Alarm	
P-5 Parking	Parking Structure - Alarm	
P-9 Parking	Parking Structure - Alarm	
P-12 Parking	Parking Structure - Alarm	
P-13 Parking	Parking Structure - Alarm	
P-14 Parking	Parking Structure - Alarm	
P-2 Parking	Parking Structure - Alarm	Studio Area Sound Source
P-6 Parking	Parking Structure - Alarm	
P-10 Parking	Parking Structure - Alarm	
P-11 Parking	Parking Structure - Alarm	
BLGS S-1	Commercial HVAC	
BLGS S-6	Commercial HVAC	
BLGS S-7	Commercial HVAC	
BLGS S-8	Commercial HVAC	
BLGS S-9	Commercial HVAC	
BLGS S-12	Commercial HVAC	
BLGS S-20	Commercial HVAC	
BLGS S-25	Commercial HVAC	
BLGS S-26	Commercial HVAC	
BLGS S-27	Commercial HVAC	
LOADING DOCK	Loading Dock	
TRAM	Tram	

Table 2 Proposed Alternative 10 Project (L_{50})
Calculated Noise Levels During the 7:00 a.m. to 10:00 p.m. and 10:00 p.m. to 2:00 a.m. Modeling Periods

Community Receptor Location	Designated Descriptor	Significance Threshold		Calculated L_{50}		Exceed Established Criteria without mitigation?	
		Daytime Criteria, L_{50} (L_{50} = 50 dBA)	Nighttime Criteria, L_{50} (L_{50} = 45 dBA)	Daytime 7 a.m. – 10 p.m.	Nighttime 10 p.m. – 2 a.m.	Daytime 7 a.m. – 10 p.m.	Nighttime 10 p.m. – 2 a.m.
Studio City	HHC 1	59	55	38	35	No	No
Cahuenga Pass	HHC 2	50	45	33	32	No	No
	HHC 3	61	64	40	37	No	No
	HHC 4	55	48	36	31	No	No
	HHC 5	50	45	37	33	No	No
	HHC 6	57	55	40	36	No	No
	HHC 7	53	51	38	34	No	No
	HHC 8	50	47	40	36	No	No
	HHC 9	50	48	45	42	No	No
	HHC 10	51	46	43	41	No	No
	HHC 11	65	64	35	32	No	No
Hollywood Knolls	HKR 1	56	52	33	32	No	No
	HKR 2	50	45	40	34	No	No
	HKR 3	50	45	38	33	No	No
Hollywood Manor	HMR 1	54	56	44	42	No	No
	HMR 2	57	56	48	47	No	No
	HMR 3	50	50	48	48	No	No
	HMR 4	50	46	50	45	No	No
	HMR 5	50	45	49	42	No	No
	HMR 6	50	45	49	40	No	No
	HMR 7	50	45	50	42	No	No
	HMR 8	50	45	50	42	No	No
	HMR 9	63	57	28	20	No	No
	HMR 10	51	49	44	42	No	No
Oakwood Garden Apartment	OGA 1	51	49	39	34	No	No
	OGA 2	58	52	41	40	No	No
	OGA 3	61	54	51	50	No	No
Campo de Cahuenga	PIC 1	58	54	45	44	No	No
Weddington Park (South)/Island	PIC 2	54	55	43	40	No	No
	PIC 3	53	48	43	41	No	No
	PIC 4	50	46	42	38	No	No
	PIC 5	56	54	41	38	No	No
	PIC 6	57	53	40	36	No	No
Toluca Estates	TLR 1	50	47	43	39	No	No
	TLR 2	50	45	43	38	No	No
	TLR 3	50	45	44	38	No	No
	TLR 4	50	46	43	37	No	No
Toluca Lake	TLR 6	50	45	44	38	No	No
	TLR 8	50	45	45	38	No	No
	TLR 9	66	58	37	29	No	No
Lakeside Golf Club	TLR 5	51	51	44	41	No	No
	TLR 7	50	47	50	45	No	No
Burbank	TLR 10	50	45	43	37	No	No
	TLR 11	50	45	45	42	No	No
Existing Office/Hotel Towers	URS 1	60	56	54	53	No	No
	URS 2	66	65	44	33	No	No
	URS 3	59	57	50	49	No	No

Table 3 Proposed Alternative 10 Project (L_{max})
Calculated Noise Levels During the 7:00 a.m. to 10:00 p.m. and 10:00 p.m. to 2:00 a.m. Modeling Periods

Community Receptor Location	Designated Descriptor	Significance Threshold		Calculated L_{max}		Exceed Established Criteria without mitigation?	
		Daytime Criteria, L_{max} (L_{max} = 70 dBA)	Nighttime Criteria, L_{max} (L_{max} = 65 dBA)	Daytime 7 a.m. – 10 p.m.	Nighttime 10 p.m. – 2 a.m.	Daytime 7 a.m. – 10 p.m.	Nighttime 10 p.m. – 2 a.m.
Studio City	HHC 1	73	71	43	37	No	No
Cahuenga Pass	HHC 2	72	69	37	34	No	No
	HHC 3	70	71	42	39	No	No
	HHC 4	81	77	41	33	No	No
	HHC 5	70	65	42	35	No	No
	HHC 6	70	66	44	37	No	No
	HHC 7	70	69	43	36	No	No
	HHC 8	70	65	44	38	No	No
	HHC 9	70	65	46	44	No	No
	HHC 10	71	72	46	42	No	No
	HHC 11	74	79	39	34	No	No
Hollywood Knolls	HKR 1	75	70	36	33	No	No
	HKR 2	77	76	47	36	No	No
	HKR 3	74	77	45	34	No	No
Hollywood Manor	HMR 1	70	68	46	44	No	No
	HMR 2	70	71	50	48	No	No
	HMR 3	70	65	51	49	No	No
	HMR 4	70	65	57	47	No	No
	HMR 5	70	65	59	44	No	No
	HMR 6	70	65	59	42	No	No
	HMR 7	70	65	60	43	No	No
	HMR 8	70	65	60	43	No	No
	HMR 9	77	75	37	21	No	No
	HMR 10	70	65	47	44	No	No
Oakwood Garden Apartment	OGA 1	70	70	46	36	No	No
	OGA 2	74	73	46	42	No	No
	OGA 3	75	68	56	52	No	No
Campo de Cahuenga	PIC 1	72	75	48	46	No	No
Weddington Park (South)/Island	PIC 2	71	74	48	42	No	No
	PIC 3	72	65	48	43	No	No
	PIC 4	70	66	46	40	No	No
	PIC 5	73	70	46	40	No	No
	PIC 6	74	72	45	38	No	No
Toluca Estates	TLR 1	70	65	50	41	No	No
	TLR 2	74	65	51	40	No	No
	TLR 3	70	65	51	40	No	No
	TLR 4	70	65	51	39	No	No
Toluca Lake	TLR 6	70	65	53	40	No	No
	TLR 8	73	65	54	40	No	No
	TLR 9	81	79	46	31	No	No
Lakeside Golf Club	TLR 5	70	65	51	43	No	No
	TLR 7	70	65	58	47	No	No
Burbank	TLR 10	70	65	52	39	No	No
	TLR 11	72	71	53	44	No	No
Existing Office/Hotel Towers	URS 1	76	69	56	55	No	No
	URS 2	77	76	47	35	No	No
	URS 3	74	73	53	51	No	No

Table 4 Results of Traffic Noise Analysis (CNEL)

Reference (Figure 2)	Nearest Intersection Numbers	Area	Existing Conditions (1)	Existing Conditions with Alternative 10 (2)	2030 without Project (3)	2030 With Alternative 10 (4)	Alternative 10 Increase	
							2-1	4-3
1	10, 15	Riverside Dr, West of Vineland	76.7	76.9	77.7	77.8	0.2	0.1
2		Vineland Ave and Moorpark St.	74.2	74.4	75.2	75.5	0.2	0.3
3	20	Lankershim, Between Moorpark St and Whipple St	75.4	75.0	76.5	76.2	-0.4	-0.3
4			68.4	68.2	69.3	69.2	-0.2	-0.1
5	28, 29, 40	Riverside Dr, East of Cahuenga	73.2	73.2	74.4	74.5	0.0	0.1
6	28, 29, 30	Cahuenga, Between 134 and Moorpark St	73.8	73.7	75.0	75.3	-0.1	0.3
7	40, 41	Riverside Dr, Between Cahuenga and Forman Ave	73.8	73.8	74.9	75.0	0.0	0.1
8	31, 32	Cahuenga, Between Moorpark St and Lankershim	72.0	72.2	73.5	74.0	0.2	0.5
9	72	Cahuenga, North of Lankershim	72.8	72.6	74.1	74.4	-0.2	0.3
10	34, 35	Weddington Park (South)/Island	67.7	68.2	68.7	68.8	0.5	0.1
11		Weddington Park (South)/Island	67.2	67.9	67.9	68.2	0.7	0.3
12		Weddington Park (South)/Island	67.9	68.5	68.9	69.2	0.6	0.3
13		Weddington Park (South)/Island	72.7	73.9	73.0	73.4	1.2	0.4
14	5	Ventura, West of Vineland Ave	62.2	62.6	63.1	63.5	0.4	0.4
15		Ventura Blvd at Willow Crest Ave	74.3	74.8	74.9	75.1	0.5	0.2
16		Buddy Holly Drive	73.8	74.0	74.3	74.5	0.2	0.2
17	42, 44	Cahuenga Blvd W, West of Universal Studios Dr	78.3	78.5	78.9	79.0	0.2	0.1
18		Cahuenga Blvd W, East of Universal Studios Dr.	78.8	78.8	79.2	79.3	0.0	0.1
19	80, 81	N. Pass Ave, Between W. Olive Ave and Riverside Dr	71.1	71.6	73.0	73.1	0.5	0.1
20	83	W. Olive Ave at Hood Ave	72.6	73.0	74.6	75.0	0.4	0.4
21	55	Barham Blvd at Forest Lawn Dr.	61.2	61.9	62.6	62.8	0.7	0.2
22	54	Barham Blvd at S Coyote Canyon Dr	68.6	69.4	69.4	70.0	0.8	0.6
23	52, 53	Barham Blvd Between S Coyote Canyon Dr and Cahuenga W.	70.1	70.7	71.0	71.6	0.6	0.6
24			67.0	67.7	67.9	68.5	0.7	0.6
25			75.0	75.8	75.7	76.5	0.8	0.8
26		Hollywood Manor (behind hill)	62.9	62.9	63.6	64.0	0.0	0.4
27	48	Barham Blvd, North of Cahuenga E	78.6	78.9	79.2	79.6	0.3	0.4
28	47, 49	Cahuenga Blvd W, East of Barham Blvd	76.5	76.7	77.2	77.3	0.2	0.1
29	50	Cahuenga Blvd W at Mulholland	80.3	80.5	80.8	81.0	0.2	0.2
30		Hollywood Manor	58.0	58.5	58.9	59.4	0.5	0.5
31			58.4	58.9	59.7	59.7	0.5	0.0
32			60.7	62.4	61.3	62.8	1.7	1.5

Table 5A Noise Level Ranges of Typical Construction Equipment
(re: City of Los Angeles CEQA Thresholds Guide)

Construction Equipment	Sound Level dBA @ 50'
Front Loader	73-86
Trucks	82-95
Cranes (moveable)	75-88
Cranes (derrick)	86-89
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-95
Pile Driving (peaks)	95-107
Tractor	77-98
Scraper/Grader	80-93
Paver	85-88

Table 5B Outdoor Construction Noise Levels Reported by City of Los Angeles CEQA Thresholds Guide

Construction Phase	Noise Level dBA at 50 feet	
	Standard Equipment	Equipment with Mufflers
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Table 6 Construction for Alternative 10

Community Receptor Location	Designated Descriptor	Threshold of Significance		Maximum L_{50} Construction Noise Levels, dBA		Exceed Established Criteria without mitigation?	
		Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.
Studio City	HHC 1	60	50	64	64	Yes	Yes
Cahuenga Pass	HHC 2	52	48	61	61	Yes	Yes
	HHC 3	60	50	68	68	Yes	Yes
	HHC 4	60	50	53	53	No	Yes
	HHC 5	50	48	60	60	Yes	Yes
	HHC 6	60	50	61	61	Yes	Yes
	HHC 7	59	50	61	61	Yes	Yes
	HHC 8	54	50	62	62	Yes	Yes
	HHC 9	55	50	70	70	Yes	Yes
	HHC 10	58	50	67	67	Yes	Yes
	HHC 11	60	50	63	63	Yes	Yes
Hollywood Knolls	HKR 1	60	50	59	59	No	Yes
	HKR 2	60	50	56	56	No	Yes
	HKR 3	55	49	59	59	Yes	Yes
Hollywood Manor	HMR 1	60	50	88	88	Yes	Yes
	HMR 2	60	50	87	87	Yes	Yes
	HMR 3	56	50	80	80	Yes	Yes
	HMR 4	54	49	77	77	Yes	Yes
	HMR 5	55	48	74	74	Yes	Yes
	HMR 6	54	49	71	71	Yes	Yes
	HMR 7	54	48	73	73	Yes	Yes
	HMR 8	56	49	75	75	Yes	Yes
	HMR 9	60	50	61	61	Yes	Yes
	HMR 10	57	50	76	76	Yes	Yes
Oakwood Garden Apartment	OGA 1	57	50	63	63	Yes	Yes
	OGA 2	60	50	67	67	Yes	Yes
	OGA 3	60	50	84	84	Yes	Yes
Campo de Cahuenga	PIC 1	60	50	75	75	Yes	Yes
Weddington Park (South)/Island	PIC 2	60	50	75	75	Yes	Yes
	PIC 3	59	50	75	75	Yes	Yes
	PIC 4	58	50	76	76	Yes	Yes
	PIC 5	60	50	72	72	Yes	Yes
	PIC 6	60	50	68	68	Yes	Yes
Toluca Estates	TLR 1	55	50	76	76	Yes	Yes
	TLR 2	53	49	71	71	Yes	Yes
	TLR 3	54	48	70	70	Yes	Yes
	TLR 4	53	50	67	67	Yes	Yes
Toluca Lake	TLR 6	52	48	68	68	Yes	Yes
	TLR 8	54	49	68	68	Yes	Yes
	TLR 9	60	50	59	59	No	Yes
Lakeside Golf Club	TLR 5	57	50	77	77	Yes	Yes
	TLR 7	55	50	78	78	Yes	Yes
Burbank	TLR 10	56	50	64	64	Yes	Yes
	TLR 11	58	50	67	67	Yes	Yes
Existing Office/Hotel Towers	URS 1	60	50	82	82	Yes	Yes
	URS 2	60	50	77	77	Yes	Yes
	URS 3	60	50	80	80	Yes	Yes

Table 7 Cumulative Construction for Alternative 10 & Offsite Related Projects

Community Receptor Location	Designated Descriptor	Threshold of Significance		Calculated Maximum L_{50} Construction Noise + Existing Operating Emissions		Exceed Established Criteria without mitigation?	
		Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 p.m. – 7 a.m.	Nighttime 7 p.m.- 7 a.m.
Studio City	HHC 1	60	50	64	64	Yes	Yes
Cahuenga Pass	HHC 2	52	48	61	61	Yes	Yes
	HHC 3	60	50	68	68	Yes	Yes
	HHC 4	60	50	54	54	No	Yes
	HHC 5	50	48	60	60	Yes	Yes
	HHC 6	60	50	61	61	Yes	Yes
	HHC 7	59	50	61	61	Yes	Yes
	HHC 8	54	50	62	62	Yes	Yes
	HHC 9	55	50	70	70	Yes	Yes
	HHC 10	58	50	67	67	Yes	Yes
	HHC 11	60	50	63	63	Yes	Yes
Hollywood Knolls	HKR 1	60	50	59	59	No	Yes
	HKR 2	60	50	57	57	No	Yes
	HKR 3	55	49	59	59	Yes	Yes
Hollywood Manor	HMR 1	60	50	88	88	Yes	Yes
	HMR 2	60	50	87	87	Yes	Yes
	HMR 3	56	50	80	80	Yes	Yes
	HMR 4	54	49	77	77	Yes	Yes
	HMR 5	55	48	74	74	Yes	Yes
	HMR 6	54	49	71	71	Yes	Yes
	HMR 7	54	48	73	73	Yes	Yes
	HMR 8	56	49	75	75	Yes	Yes
	HMR 9	60	50	61	61	Yes	Yes
	HMR 10	57	50	76	76	Yes	Yes
Oakwood Garden Apartment	OGA 1	57	50	63	63	Yes	Yes
	OGA 2	60	50	67	67	Yes	Yes
	OGA 3	60	50	84	84	Yes	Yes
Campo de Cahuenga	PIC 1	60	50	84	84	Yes	Yes
Weddington Park (South)/Island	PIC 2	60	50	75	75	Yes	Yes
	PIC 3	59	50	75	75	Yes	Yes
	PIC 4	58	50	76	76	Yes	Yes
	PIC 5	60	50	72	72	Yes	Yes
	PIC 6	60	50	68	68	Yes	Yes
Toluca Estates	TLR 1	55	50	76	76	Yes	Yes
	TLR 2	53	49	71	71	Yes	Yes
	TLR 3	54	48	70	70	Yes	Yes
	TLR 4	53	50	67	67	Yes	Yes
Toluca Lake	TLR 6	52	48	68	68	Yes	Yes
	TLR 8	54	49	68	68	Yes	Yes
	TLR 9	60	50	60	60	No	Yes
Lakeside Golf Club	TLR 5	57	50	77	77	Yes	Yes
	TLR 7	55	50	78	78	Yes	Yes
Burbank	TLR 10	56	50	64	64	Yes	Yes
	TLR 11	58	50	67	67	Yes	Yes
Existing Office/Hotel Towers	URS 1	60	50	82	82	Yes	Yes
	URS 2	60	50	77	77	Yes	Yes
	URS 3	60	50	80	80	Yes	Yes

Table 8 Cumulative Operations for Alternative 10 & Offsite Related Projects

Community Receptor Location	Designated Descriptor	Threshold of Significance		Calculated Maximum L_{50} Operational Noise + Existing Operating Emissions		Exceed Established Criteria without mitigation?	
		Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.	Daytime 7 a.m. – 7 p.m.	Nighttime 7 p.m.- 7 a.m.
Studio City	HHC 1	59	55	38	35	No	No
Cahuenga Pass	HHC 2	50	45	33	32	No	No
	HHC 3	61	64	40	37	No	No
	HHC 4	55	48	36	31	No	No
	HHC 5	50	45	37	33	No	No
	HHC 6	57	55	40	36	No	No
	HHC 7	53	51	38	34	No	No
	HHC 8	50	47	40	36	No	No
	HHC 9	50	48	45	42	No	No
	HHC 10	51	46	43	41	No	No
	HHC 11	65	64	35	32	No	No
Hollywood Knolls	HKR 1	56	52	33	32	No	No
	HKR 2	50	45	40	34	No	No
	HKR 3	50	45	38	33	No	No
Hollywood Manor	HMR 1	54	56	44	42	No	No
	HMR 2	57	56	48	47	No	No
	HMR 3	50	50	48	48	No	No
	HMR 4	50	46	50	45	No	No
	HMR 5	50	45	49	42	No	No
	HMR 6	50	45	49	40	No	No
	HMR 7	50	45	50	42	No	No
	HMR 8	50	45	50	42	No	No
	HMR 9	63	57	28	20	No	No
	HMR 10	51	49	44	42	No	No
Oakwood Garden Apartment	OGA 1	51	49	39	34	No	No
	OGA 2	58	52	41	40	No	No
	OGA 3	61	54	51	50	No	No
Campo de Cahuenga	PIC 1	58	54	49	48	No	No
Weddington Park (South)/Island	PIC 2	54	55	43	40	No	No
	PIC 3	53	48	43	41	No	No
	PIC 4	50	46	42	38	No	No
	PIC 5	56	54	41	38	No	No
	PIC 6	57	53	40	36	No	No
Toluca Estates	TLR 1	50	47	43	39	No	No
	TLR 2	50	45	43	38	No	No
	TLR 3	50	45	44	38	No	No
	TLR 4	50	46	43	37	No	No
Toluca Lake	TLR 6	50	45	44	38	No	No
	TLR 8	50	45	45	38	No	No
	TLR 9	60	58	37	30	No	No
Lakeside Golf	TLR 5	51	51	44	41	No	No
	TLR 7	50	47	50	45	No	No
Burbank	TLR 10	50	45	43	37	No	No
	TLR 11	50	45	45	42	No	No
Existing Office/Hotel Towers	URS 1	60	56	54	53	No	No
	URS 2	66	65	44	33	No	No
	URS 3	59	57	50	49	No	No

Table 9 Cumulative Alternative 10 - Results of Traffic Noise Analysis (CNEL)

Reference (Figure 2)	Nearest Intersection Numbers	Area	Existing Conditions	Cumulative Project Noise Level (Alt 10 + Off-Site) under 2030 Conditions	Cumulative Project Impact Analysis
1	10, 15	Riverside Dr, West of Vineland	76.7	77.8	1.1
2		Vineland Ave and Moorpark St.	74.2	75.5	1.3
3	20	Lankershim, Between Moorpark St and Whipple St	75.4	76.2	0.8
4			68.4	69.2	0.8
5	28, 29, 40	Riverside Dr, East of Cahuenga	73.2	74.5	1.3
6	28, 29, 30	Cahuenga, Between 134 and Moorpark St	73.8	75.3	1.5
7	40, 41	Riverside Dr, Between Cahuenga and Forman Ave	73.8	75.0	1.2
8	31, 32	Cahuenga, Between Moorpark St and Lankershim	72.0	74.0	2.0
9	72	Cahuenga, North of Lankershim	72.8	74.4	1.6
10	34, 35	Weddington Park (South)/Island	67.7	68.8	1.1
11		Weddington Park (South)/Island	67.2	68.2	1.0
12		Weddington Park (South)/Island	67.9	69.2	1.3
13		Weddington Park (South)/Island	72.7	73.4	0.7
14	5	Ventura, West of Vineland Ave	62.2	63.5	1.3
15		Ventura Blvd at Willow Crest Ave	74.3	75.1	0.8
16		Buddy Holly Drive	73.8	74.5	0.7
17	42, 44	Cahuenga Blvd W, West of Universal Studios Dr	78.3	79.0	0.7
18		Cahuenga Blvd W, East of Universal Studios Dr.	78.8	79.3	0.5
19	80, 81	N. Pass Ave, Between W. Olive Ave and Riverside Dr	71.1	73.1	2.0
20	83	W. Olive Ave at Hood Ave	72.6	75.0	2.4
21	55	Barham Blvd at Forest Lawn Dr.	61.2	62.8	1.6
22	54	Barham Blvd at S Coyote Canyon Dr	68.6	70.0	1.4
23	52, 53	Barham Blvd Between S Coyote Canyon Dr and Cahuenga W.	70.1	71.6	1.5
24			67.0	68.5	1.5
25			75.0	76.5	1.5
26		Hollywood Manor (behind hill)	62.9	64.0	1.1
27	48	Barham Blvd, North of Cahuenga E	78.6	79.6	1.0
28	47, 49	Cahuenga Blvd W, East of Barham Blvd	76.5	77.3	0.8
29	50	Cahuenga Blvd W at Mulholland	80.3	81.0	0.7
30		Hollywood Manor	58.0	59.4	1.4
31			58.4	59.7	1.3
32			60.7	62.8	2.1

FIGURES 1 THROUGH 5

Figure 1 Alternative 10 Conceptual Plan
Figure 2 Traffic Noise Receptor Locations
Figure 3 Alternative 10 Construction Zones
Figure 4 Vibration Mitigation Area Due to Construction
Figure 5 Off-Site Project Locations

PROJECT LIST

1. Office
2. Office
3. Studio Support
4. Parking
5. Studio Office
6. Studio
7. Office/Parking
8. Hotel/Parking
9. Support
10. Hotel
11. Retail
12. Hotel Entry and Parking
13. Retail
14. Parking
15. Entertainment Attraction
16. Entertainment Attraction
17. Support
18. Entertainment Attraction
19. Parking
20. Parking
21. Entertainment Attraction
22. Entertainment Attraction
23. Entertainment Attraction
24. Entertainment Attraction
25. Studio
26. Studio
27. Parking/Studio Offices
28. Studio
29. Offices
30. Support
31. Studio Offices/Support/Parking
32. Studio Support
33. Set Redevelopment Areas
34. Studio Support
35. Entertainment Attraction
36. Entertainment Attraction
37. Entertainment Attraction
38. Parking/Support
39. Parking
40. Studio Support
41. Studio
42. Studio
43. Studio Support
44. Studio Support
45. Parking
46. Addition to Childcare
47. Studio Offices
48. Parking

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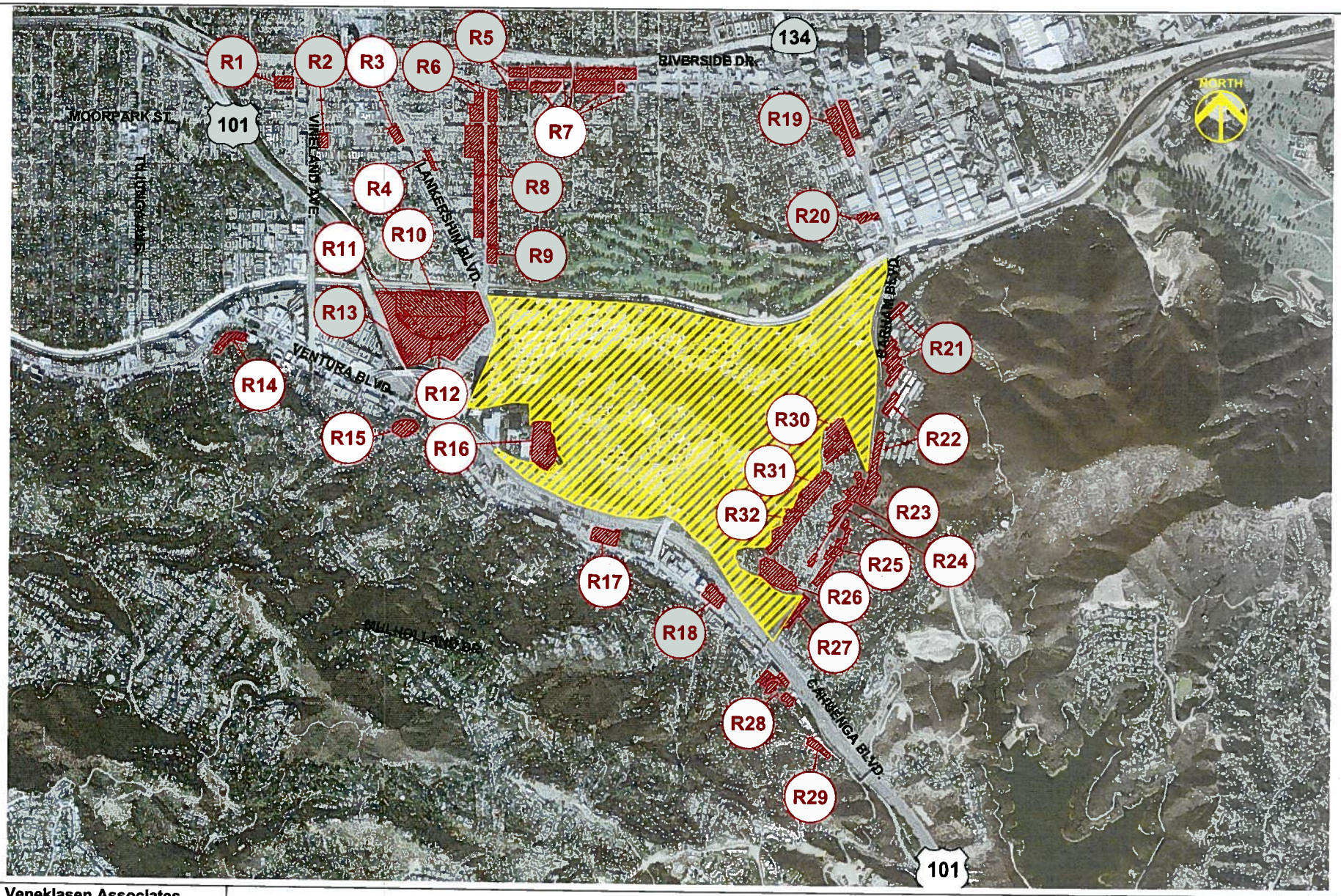
Alternative 10 Conceptual Site Plan

JUNE 2012

Figure 1



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Traffic Noise Receptor Locations

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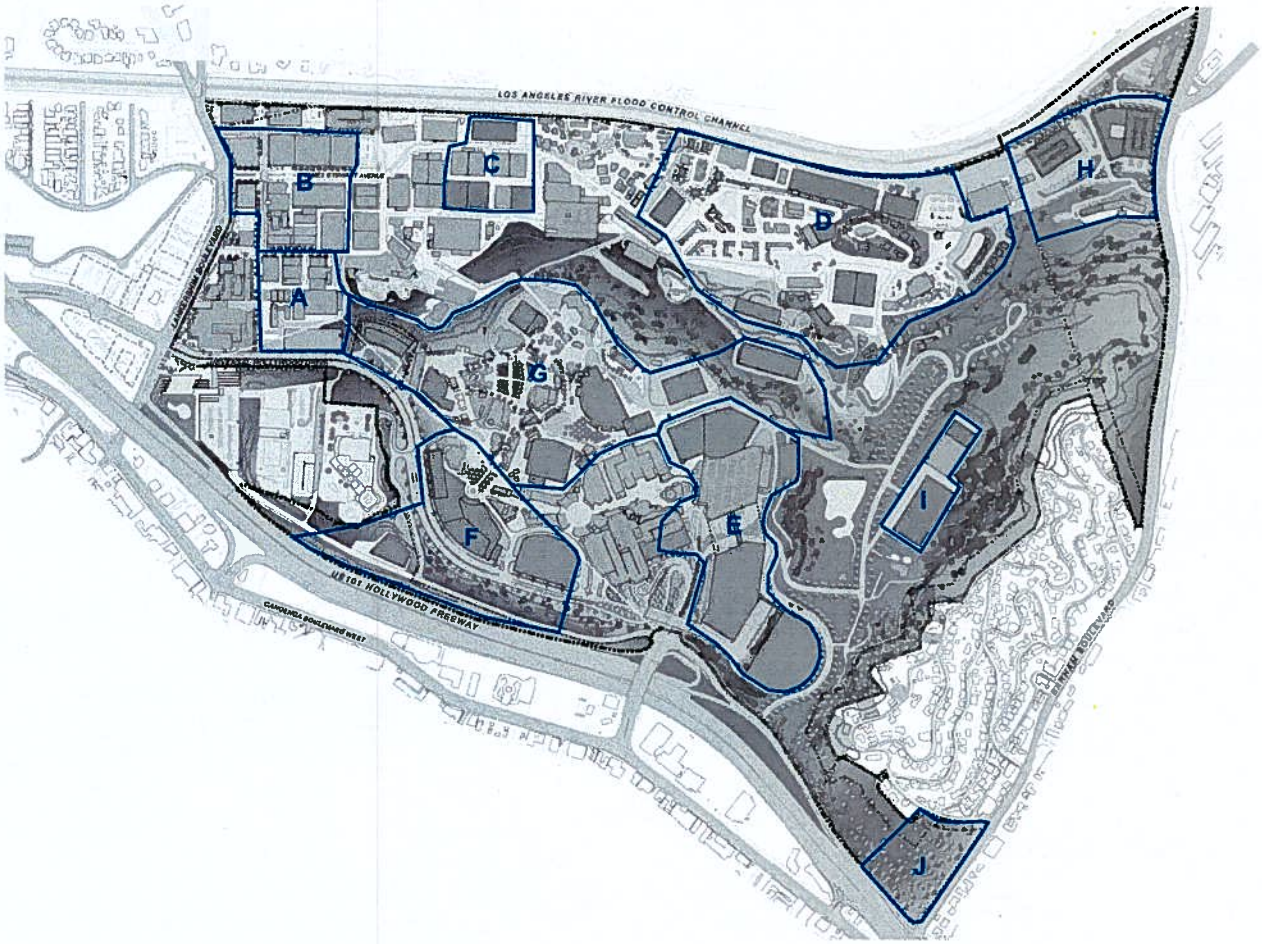
Figure 2



CONSTRUCTION SITE SCENARIOS
PAD A + PAD B
PAD A + PAD C
PAD A + PAD D
PAD A + PAD E
PAD A + PAD F
PAD A + PAD G
PAD A + PAD H
PAD A + PAD I
PAD A + PAD J
PAD B + PAD C
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Alternative 10 Construction Zones

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Figure 3

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Vibration Mitigation Area Due to Construction

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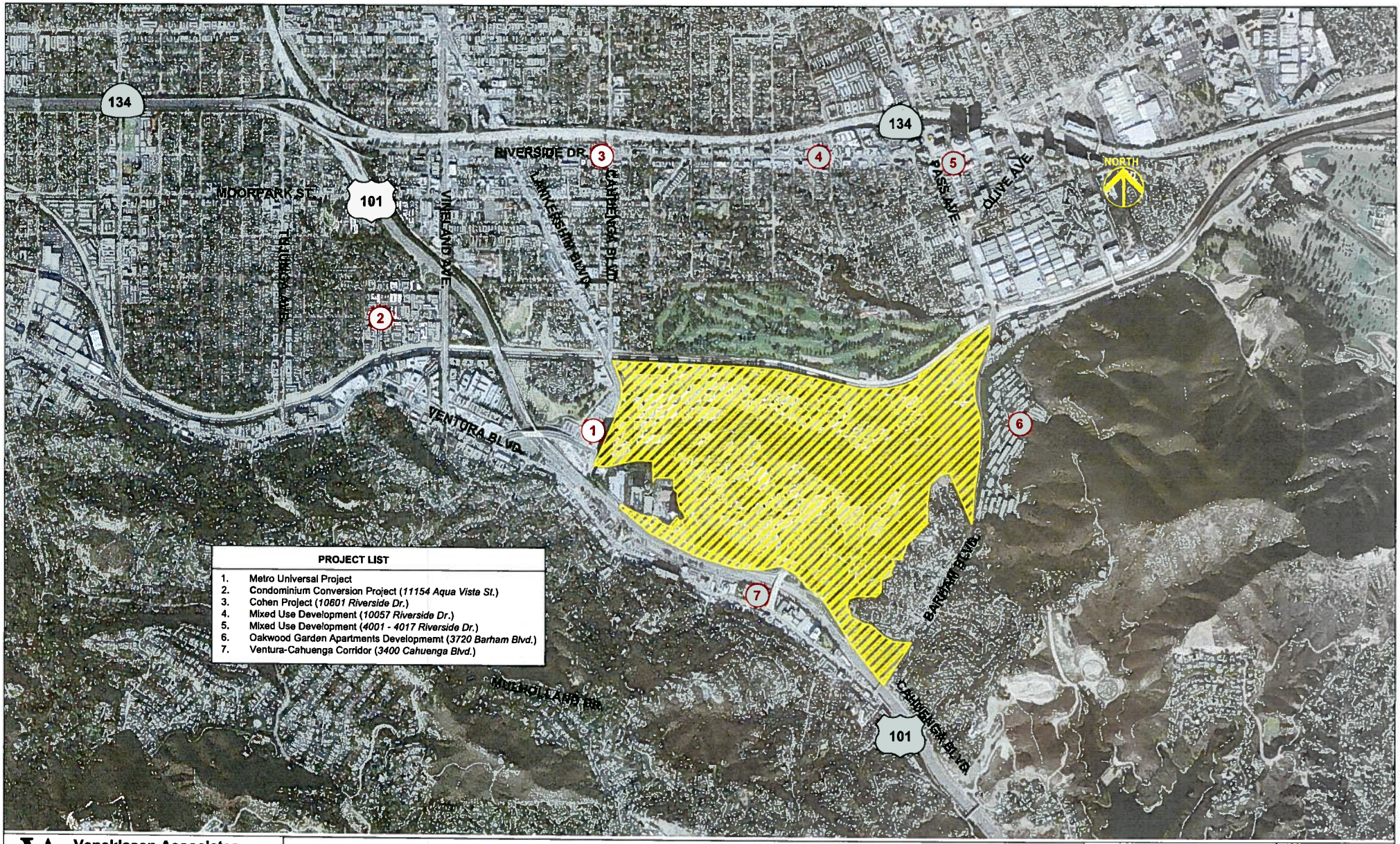
Figure 4



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Off-Site Project Locations

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Figure 5

Appendix FEIR-17

Alternative 10: No Residential Alternative
Visual Qualities

Alternative 10: No Residential Alternative

Visual Qualities

The visual qualities analysis presented in the Draft EIR analyzed the potential for impacts to occur to 15 geographic areas, which includes locations near and far from the Project Site as well as from public and private areas located on all sides of the Project Site (see Figures 1 and 2 on pages 15 and 16). The analysis in the Draft EIR was based upon field observations and an evaluation of photographs and photograph simulations from vantage points selected within the surrounding geographic areas that demonstrate the potential influence of development. The analysis in this report also is based on field observations and photo simulations based on potential development under Alternative 10 from the same vantage points referenced in the Draft EIR.

The analysis of visual character is based on the extent that on-site development changes the following three elements which define the Project Site's visual character:

- **Contrast** – the consistency of new development with the existing on-site development;
- **Prominence** – the extent to which new development changes the prominent view from any given geographic area; and
- **Coverage** – the proportion of the available field of view that would be occupied by the new development.

The analysis of potential impacts with regard to views is based on the extent that on-site development changes the following two elements which define the Project Site's visual character:

- **Prominence** – the degree to which the visual resource stands out within the context of the entirety of the visual environment; and
- **Coverage** – the proportion of the available field of view that includes the visual resource that would be affected by on-site development.

This report uses the same significance thresholds that were used in the Draft EIR. Specifically, a significant impact would occur under the following conditions:

- **Visual Character**
  - Development would substantially alter, degrade, or eliminate the existing visual character of an area, including valued existing features or resources. Based on the methodology described above, a significant impact would occur if a substantial change occurs with regard to all three of the identified criteria (i.e., contrast, prominence, and coverage).
  - Alternative 10 development would introduce elements that substantially detract from the anticipated visual character of an area as articulated in applicable plans and policies.
- **Views**
  - Development would obstruct an existing view of a prominent, valued view. Based on the methodology described above, a significant impact would occur if a substantial change occurs with regard to both of the identified criteria (i.e., prominence and coverage).

Alternative 10 development would result in less than significant impacts with regard to visual character and views from all of the 15 geographic areas analyzed. In terms of impacts as compared to the proposed Project, impacts under Alternative 10 would be less than those of the proposed Project from the analyzed geographic areas located to the east and southeast of the Project Site, mostly as a result of eliminating the mid- to high-rise structures proposed within the Mixed-Use Residential Area. Impacts of Alternative 10 would be similar to those of the proposed Project from locations southwest, west, and north of the Project Site as the additional development that could occur under Alternative 10 would remain consistent with the location, scale, and massing of the structures and signage that are on-site and that could occur under the Project. Impacts attributable to Alternative 10 would not be greater than those of the proposed Project from any of the 15 geographic areas analyzed. The following table summarizes the conclusion of this analysis with regard to each of the 15 geographic areas analyzed.

Alternative 10 Impacts LESS than the Less Than Significant Proposed Project Impacts	**Alternative 10 Impacts SIMILAR to the Less Than Significant Proposed Project Impacts**	**Alternative 10 Impacts Greater than the Less Than Significant Proposed Project Impacts**
Barham Boulevard Corridor – South	Cahuenga Pass West	No Locations
Barham Boulevard Corridor – North	Universal City Metro Line Station/Campo de Cahuenga	
Forest Lawn Drive – West	Weddington Park (South)	
Oakwood Garden Apartments	City View Lofts	
Hollywood Manor	Toluca Estates	
Hollywood Knolls	Toluca Lake	
Mulholland Ridge	Lakeside Golf Club	
Cahuenga Pass East		

As with the Project, Alternative 10 would not be anticipated to conflict with the applicable aesthetic policies set forth in the City's General Plan Framework Element and the Sherman Oaks – Studio City – Toluca Lake – Cahuenga Pass Community Plan. Impacts would thus be less than significant and similar to those of the proposed Project.

Construction activities under Alternative 10 would result in temporary changes to the visual environment when viewed from those off-site locations that have visual access of the Project Site. Alternative 10 construction impacts with regard to visual character and views would be temporary and would be comparable, but not exceed, those identified above once framing is complete and less than that before framing is completed. As such, construction impacts under Alternative 10 with regard to visual character and views would be less than significant and less than those of the proposed Project for areas that have visual access to the Back Lot Area, due to the reduced development in this area under Alternative 10, and similar to those of the proposed Project for all other off-site areas.

The proposed annexation and detachment of land areas between the City and County would not alter the potential visual quality impacts of Alternative 10.

The following provides a more detailed discussion of Alternative 10's impacts on visual qualities and views from the 15 geographic areas analyzed.

1. Visual Character and Views

- **Barham Boulevard Corridor – South**

Development under Alternative 10 would result in changes to the visual environment that would vary depending on location when travelling southbound on Barham Boulevard. Approaching the Project Site from the north, no change to the visual character within the foreground would occur. New development within the Entertainment Visual Quality Area would change mid-range conditions by extending the existing development located at the "top of the hill." However, distant views of the Santa Monica Mountains ridgeline would remain (see Figure 3 on page 17). As such, new development under Alternative 10 would not result in a change in contrast as it would be consistent with the existing development patterns at the top of the hill and would not change prominence, although a limited change in coverage would occur in terms of mid-range conditions. As one travels further south to Lakeside Plaza Drive, the addition of a new building at the southwest corner of Barham Boulevard and Lakeside Plaza Drive (see Figure 5 on page 19) would result in a substantial change in contrast and prominence relative to existing vegetation. However, as is the case with the proposed Project, due to the wide field of view, a substantial change in coverage would not occur.

Travelling south on Barham Boulevard towards Craig Drive, no change to existing conditions would occur as the undeveloped hillside would remain and no development under Alternative 10 would occur in this area (see Figure 4 on page 18). Continuing

further south, development under Alternative 10 within the portion of the Project Site located south of Blair Drive could result in low-rise structures replacing existing on-site vegetation. This development could result in a change in contrast, but not prominence and coverage, as the prominent view and available field of view from this portion of Barham Boulevard would remain.

Signage under Alternative 10 could have the potential to affect the visual character of the area, particularly at the Project Site's entryways, via a change in overall contrast and prominence at the intersection of Barham Boulevard and Forest Lawn Drive as well as along Barham Boulevard south of this intersection. However, with proposed limitations on the size, type, and location of the signage, no substantial change in coverage would occur, because Alternative 10 signage could affect only a limited portion of the available field of view. As all three criteria must be substantially affected by the development to result in a significant impact, Alternative 10 impacts to the visual character of the Project Site when viewed from Barham Boulevard – South would be less than significant.

Alternative 10 would not impact the valued view resources available when travelling southbound on Barham Boulevard, the views of the Santa Monica Mountains ridgeline to the southwest over the North Back Lot and Entertainment Visual Quality Areas would remain, and Alternative 10 development would not affect existing background views of the Cahuenga Pass because the Project Site is not located within the viewshed between Barham Boulevard and the Cahuenga Pass. As both criteria must be substantially affected by a project to result in a significant impact, impacts to views from the Barham Boulevard Corridor – South under Alternative 10 would be less than significant.

In comparison to the proposed Project, the impacts from the Barham Boulevard Corridor –North geographic area under Alternative 10 would be substantially less than what could occur under the proposed Project due to the reduction in the extent of development and elimination of the high-rise structures (see Figures 103-105 from the Draft EIR).Thus, the impacts of Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Barham Boulevard Corridor – North**

Most of the view locations when travelling north on Barham Boulevard would be from along the roadway, as is the case when travelling southbound on Barham Boulevard. Travelling north from the Hollywood Freeway, development under Alternative 10 could include low-rise structures replacing on-site vegetation which would result in a change in contrast. However, proposed development and signage under Alternative 10 would not result in visual character changes in terms of prominence and coverage, as the prominent and overall available field of view would remain the same. Continuing northbound, no change in Project Site conditions would occur (see Figure 6 on page 20). When approaching Lakeside Plaza Drive (see Figure 7 on page 21), new development would be

visible along the west side of Barham Boulevard. Although this development would be consistent with the scale of on-site development in this area, the changes that could occur under Alternative 10, with regard to buildings and signage, could represent changes to contrast and prominence. Due to the wide field of view and limitations on building and signage that would be permitted under Alternative 10, development that could occur would not result in a substantial coverage of the existing visual environment. As all three criteria must be substantially affected to result in a significant visual character impact, Alternative 10 impacts to the visual character of the Project Site when viewed from Barham Boulevard – North would be less than significant.

Barham Boulevard is designated a Major Scenic Highway II by the City's General Plan Circulation Element, with the basis for this designation being defined in terms of a "dramatic pass with northerly valley views." Approaching Lakeside Plaza Drive and beyond when travelling north on Barham Boulevard, proposed development under Alternative 10 within the North Back Lot Visual Quality Area could potentially block a very small portion of the existing mountain and valley views on an intermittent basis. However, as substantial views of the mountains and the San Fernando Valley would remain, potential view impacts from the roadway would be less than significant.

In comparison to the proposed Project, the impacts from the Barham Boulevard Corridor-North geographic area under Alternative 10 would be substantially less than what could occur under the proposed Project due to a reduction in the amount of development along Barham Boulevard (see Figure 107 from the Draft EIR), as well as from the elimination of the high-rise structures behind the buildings fronting Barham Boulevard (see Figure 106 from the Draft EIR). Thus, the impacts of Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Forest Lawn Drive – West**

Most view locations when travelling west along Forest Lawn Drive are from along the roadway itself. A change in visual character from this area could occur with Alternative 10's proposed development of a multi-story building with greater frontage on Barham Boulevard and Lakeside Plaza Drive, as shown in Figure 8 page 22. As the new buildings would be similar to existing development in this area, the development of Alternative 10 would not result in a change in contrast, but could result in a change in prominence. However, this change would occur in a wide field of view and as a result would not result in a substantial change in coverage. Signage that could occur in this area could represent a change in contrast and prominence but given the wide field of view and the proposed limitations on the size, category, type, and location, proposed signage would not represent a substantial change in coverage. As all three criteria must be substantially affected to result in a significant impact, Alternative 10 impacts to the visual character of the Project Site when viewed from Forest Lawn Drive – West would be less than significant. As no views of valued visual resources are available across the Project Site from this area,

development of Alternative 10 would result in a less than significant impact as a substantial coverage of prominent view resources would not occur.

In comparison to the proposed Project, the impacts from the Forest Lawn Drive-West geographic area under Alternative 10 would be substantially less than what could occur under the proposed Project due to a reduction in the amount of development along Barham Boulevard, and the elimination of the high-rise structures behind the buildings fronting Barham Boulevard and Lakeside Plaza Drive (see Figure 108 from the Draft EIR). Thus, the impacts of Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Oakwood Garden Apartments**

The changes in visual character and views that would occur under the proposed Project would not occur under Alternative 10 due to the elimination of the high-rise structures within the Mixed-Use Residential Area (see Figure 9 on page 23 and Figure 109 from the Draft EIR). Further, no foreground or middle ground views of visual resources are available from the Oakwood Garden Apartments geographic area, and only the Oakwood buildings at the highest elevations have views oriented to the northwest toward the Verdugo Mountains, City of Burbank, and the San Fernando Valley. Nonetheless, due to the elimination of the high-rise structures within the Mixed-Use Residential Area, Alternative 10 would not affect views towards these resources. Therefore, the impact from the Oakwood Garden Apartments geographic area under Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Hollywood Manor**

The majority of the Hollywood Manor area (i.e., approximately 150 of the 230 homes), do not have views across the Project Site. Of the approximately 25 homes near the southern tip of the Hollywood Manor area with views toward the Project Site, many have limited views because of existing vegetation, the layout of the residences themselves, and the overall orientation of the roadway network. Thus, Alternative 10 development would not result in a substantial change with regard to contrast, prominence, or coverage from these locations within Hollywood Manor. For the approximately 40 residences with potential westerly views, the views are somewhat intermittent due to existing vegetation, landscaping, and intervening homes (see Figure 11 on page 25). Approximately 12 homes along the western side of Blair Drive may have direct views across the Project Site. While new development under Alternative 10 would be visible from this area, it would be visually consistent with existing on-site development (see Figure 10 on page 24). As a new structure could be introduced in the foreground, Alternative 10 development could result in a change in contrast, but effects on prominence and coverage would be minimized. For the 15 homes in the northern portion of Hollywood Manor with views over the Project Site, given the existing field of view from these locations, development under Alternative 10 would not substantially change the visual character of the Project Site from these 15

homes. With regard to signage, with the proposed regulations of the type, size and location of signage, Alternative 10 signage would not result in a change in contrast, prominence, or coverage. Thus, impacts to the visual character of the Project Site from the Hollywood Manor geographic area under Alternative 10 would be less than significant since not all three impact criteria would be significantly impacted.

With regard to views, for the approximately 25 homes near the southern tip of the Hollywood Manor geographic area, there would not be a potential blockage of a valued visual resource as potential development under Alternative 10 would be at a lower elevation and ultimately below eye level of those existing locations within this area that have views of a valued visual resource. Continuing north from this area, for the homes with westerly views, overall views of visual resources would not be affected (see Figure 11 on page 25), and thus, a less than significant impact would occur. For the homes with available sight lines across the Project Site, views encompass portions of the Cahuenga Pass West area, the Verdugo Mountains, and San Fernando Valley, all of which are considered valued visual resources. Impacts to these views under Alternative 10 would be less than significant as the long-range views of the San Fernando Valley and the Verdugo Mountains are retained (see Figure 10 on page 24). While a greater impact than that shown in Figure 10 could occur from one or more of these homes, view impacts under Alternative 10 would be less than significant as there would not be substantial view coverage of a prominent view resource.

In comparison to the proposed Project, the impacts from the Hollywood Manor geographic area under Alternative 10 for those locations that have views over and across the Project Site would be substantially less than what could occur under the proposed Project due to the large reduction in the amount of development that would occur in the Backlot Area and elimination of the high-rise structures (see Figure 110 from the Draft EIR). For those locations that have intermittent views due to on- and off-site vegetation and intervening homes, impacts of Alternative 10 would be similar to those of the proposed Project due to the limited visual access available from these locations (see Figure 111 from the Draft EIR) and the reduction in development, particularly in the foreground, that would occur under Alternative 10. Thus, the impacts of Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Hollywood Knolls**

As the Hollywood Knolls area is located at a higher elevation and at a distance from the Project Site, the Project Site blends with surrounding development and topography and is not prominent from the Hollywood Knolls area, (see Figures 12 and 13 on pages 26 and 27). Due to the large distance, considerable landscaping, and the wide field of view, of which the Project Site constitutes a small portion, Alternative 10 development would not result in a substantial change in the visual character of this area. Proposed signage within lower-elevation areas of the Project Site would not be directly visible due to changes in

topography, while signage within the higher elevated areas of the Project Site would be visible, but not discernible, due to the distance from the Project Site and existing on- and off-site topography. As Alternative 10 development would not substantially affect contrast, coverage, or prominence, impacts to the visual character of the Project Site when viewed from the Hollywood Knolls area would be less than significant.

The upper portions of the Hollywood Knolls area currently have intermittent background views of the San Fernando Valley, Verdugo Mountains, and portions of the Santa Monica Mountains over existing urbanized areas. Development under Alternative 10 as viewed from the Hollywood Knolls area would include buildings within the Entertainment Area that would enter into the current skyline view from this area. As nearly all of the San Fernando Valley and the Verdugo Mountains would still remain visible, and thus a substantial change in prominence and coverage would not occur, Alternative 10 development would result in a less than significant impact on views from the Hollywood Knolls area.

Although Alternative 10 proposes more development within the Entertainment Area than the proposed Project, impacts would be similar with regard to visual character and views due to the distance between the Hollywood Knolls area and the Entertainment Area as well as the presence of heavy vegetation which dominates the Hollywood Knolls viewshed (see Figures 11 and 12 on pages 25 and 26 and Figures 112A-F and 113 from the Draft EIR). With regard to those Hollywood Knolls locations which have foreground views of the Project Site, Alternative 10 impacts would be less than those of the proposed Project due to the reduction in development within the Back Lot Area that would occur under Alternative 10. Thus, the impacts from the Hollywood Knolls geographic area under Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Mulholland Ridge**

While Alternative 10 development and signage would be visible from the Mulholland Ridge area, it would not result in a substantial change with regard to contrast, coverage, or prominence as the overall character of this area and the Project Site as seen from the height and distance of this area would be consistent with existing on-site development patterns (see Figure 14 on page 28). As no substantial changes in contrast, coverage, or prominence would occur, impacts to visual character from the Mulholland Ridge area with the development of Alternative 10 would be less than significant.

The primary view resources available from the Mulholland Ridge area are panoramic views of the San Fernando Valley, Cahuenga Peak on the east, and the Verdugo Mountains in the background. Buildings and signage that could be developed under Alternative 10 would not be tall enough or close enough to these areas to alter the existing background views of these visual resources. Since substantial view coverage of a

prominent view resource would not occur, view impacts from the Mulholland Ridge area under Alternative 10 would be less than significant.

The development that could occur within the Back Lot Area under Alternative 10, as viewed from the Mulholland Ridge area, represents a substantial reduction in the amount of development within the eastern portion of the Project Site as compared to the proposed Project (see Figures 114A-C from the Draft EIR). Although Alternative 10 proposes more development in the Entertainment Area than the proposed Project, impacts within this portion of the Project Site would be similar with regard to visual character and views due to the distance between the Mulholland Ridge area and the Entertainment Area as well as the small portion of the available field of view occupied by the Project Site. Thus, the impacts from the Mulholland Ridge geographic area under Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Cahuenga Pass East**

The Cahuenga Pass East area is analyzed from three areas due to the varying elevations within Cahuenga Pass East and its proximity to the Project Site. The Cahuenga Pass East – High area, while located to the west and at a slightly lower elevation than the Mulholland Ridge area, would have a similar viewing angle and distance from the Project Site and as such, would experience the same impacts as described above for the Mulholland Ridge area. Thus, impacts to visual character and views attributable to the buildings and signage that could occur under Alternative 10, as shown in Figure 15 on page 29, would be less than significant.

The viewshed available from the Cahuenga Pass East – Mid area, as shown in Figure 16 on page 30, is dominated by the landscaping and buildings within the neighborhood itself, with the background of this viewshed defined by the San Fernando Valley to the west of the Project Site, the Project Site, and Cahuenga Peak to the east of the Project Site. While the viewing angle is somewhat different than that from the Cahuenga Pass East – High area, the Cahuenga Pass East – Mid area is also located at a distance from the Project Site (i.e., approximately 1,000 feet) and would experience changes in visual character and views which are similar to those described above. Thus, impacts to visual character and views attributable to the buildings and signage that could occur under Alternative 10 would be less than significant.

The foreground viewshed available for the few homes oriented towards the Project Site from the Cahuenga Pass East – Low area, as shown in Figure 17 on page 31, is dominated by the landscaping and buildings within the neighborhood itself with the middle ground portion of the viewshed defined by the Project Site. As development under Alternative 10 would be consistent with existing on-site development in the Entertainment Area, no impacts with regard to contrast and prominence would occur. In addition, as a wide field of view is available for the few homes oriented towards the Project Site, impacts

with regard to coverage would be limited. As no substantial changes in contrast, coverage, or prominence would occur, impacts to visual character from the Cahuenga Pass East – Low area with the development of Alternative 10 would be less than significant. The only view resource available from this area is views of Cahuenga Peak in the background, across the Hollywood Manor area. As development under Alternative 10 would not block the view of this visual resource, a less than significant impact would occur with regard to view blockage from the Cahuenga Pass East – Low area.

The development that could occur within the Back Lot Area under Alternative 10, as viewed from the Cahuenga Pass East area; represents a substantial reduction in the amount of development compared to the proposed Project (see Figures 115A-F, 116A-C, and 117 from the Draft EIR). Although Alternative 10 proposes more development in the Entertainment Area than the proposed Project, impacts within this portion of the Project Site would be similar to those of the proposed Project with regard to visual character and views due to the distance between the Cahuenga Pass East area and the Entertainment Area as well as the small portion of the available field of view occupied by the Project Site. Thus, the impacts from the Cahuenga Pass East geographic area under Alternative 10 would be less than the proposed Project's less than significant impacts.

- **Cahuenga Pass West**

The Project Site from this area is located in an east/northeasterly direction with the most visually prominent portions of the Project Site being the Entertainment, Studio, and Lankershim Frontage Visual Quality Areas. As on-site development has occurred over a long period of time without a consistent or directed theme, the Project Site's existing visual character from the Cahuenga Pass West area appears to have an uneven visual relationship with surrounding residential and commercial uses. New development and signage that could occur under Alternative 10 would not contrast with the existing urban development visible from the Cahuenga Pass West area and would not be substantially more prominent than existing development within the available field of view (see Figure 18 on page 32). In addition, a wide field of view would remain available from vantage points with a viewshed of the Project Site and, therefore, would not create a substantial impact on coverage. As all three criteria must be substantially affected by the Project to result in a significant impact, Project impacts from the Cahuenga Pass West area would be less than significant.

Due to the combination of elevation and distance from the Project Site, development under Alternative 10 would occupy a small portion of the available field of view and therefore would not affect long-range views of the Verdugo Mountains and the San Fernando Valley. There are also existing middle ground views of Cahuenga Peak to the east of the Project Site from various middle and high elevation locations within this area. Under Alternative 10, development could potentially block small portions of the viewshed towards Cahuenga Peak; however, given the overall wide viewshed available, impacts

would be less than significant, as the prominent view of Cahuenga Peak would remain. Since development of structures and signage under Alternative 10 would not result in a substantial coverage of a prominent view resource, Project impacts from the Cahuenga Pass West geographic area would be less than significant.

Although Alternative 10 proposes more development in the Entertainment, Business, and Studio Areas than the proposed Project, impacts within this portion of the Project Site would be similar with regard to visual character and views due to the distance between the Cahuenga Pass West area and the Project Site as well as the small portion of the available field of view occupied by the Project Site (see Figures 118A-F from the Draft EIR).

- **Universal City Metro Line Station, Campo de Cahuenga, and Weddington Park (South)**

Changes in the Project Site's visual character and potential impacts with regard to views of valued visual resources would be similar for these three areas. On-site development within the viewshed of these areas includes development within the Lankershim Frontage and Studio Visual Quality Areas. The visual character of the Project Site as seen from these geographic areas is highly urbanized, with low- to high-rise structures along the entire Lankershim Boulevard frontage. Developed over many years without a cohesive design principle, the Project Site does not create a sense of place and results in an uneven visual relationship with surrounding residential and commercial uses. Development under Alternative 10 is not anticipated to result in a substantial change in contrast as the permitted development would contribute to the existing "urban skyline" in this area, and in so doing would reinforce the existing pattern of mid- to high-rise development along Lankershim Boulevard (see Figures 19 and 20 on pages 33 and 34). Given the proximity of these geographic areas to the Project Site and the nature of on- and off-site development on the east side of Lankershim Boulevard, a change in prominence is also not anticipated to occur. As a wide field of view is currently available from these geographic areas and Alternative 10 development would not block a substantial portion of this available view, a substantial change in coverage would also not occur. As with the proposed Project, given the proposed improvements to the Project Site's visual character under Alternative 10 and the existing uses presently located within the Lankershim Frontage Visual Quality Area, no substantial changes in contrast would occur. Thus, as all three criteria (i.e., coverage, prominence, and contrast) must be substantially affected by the Project to result in a significant impact, visual character impacts related to structure development and signage visible from the Universal City Metro Red Line Station, Campo de Cahuenga, and Weddington Park (South) areas would be less than significant.

No views of valued visual resources are available across the Project Site or adjoining off-site areas from the Universal City Metro Red Line Station, Campo de Cahuenga, and Weddington Park (South) areas. Since Alternative 10 would not result in the substantial coverage of prominent view resources, view impacts from the Universal City

Metro Red Line Station, Campo de Cahuenga, and Weddington Park (South) areas would be less than significant.

Although Alternative 10 proposes more development in the Entertainment Area than the proposed Project, impacts from the geographic areas under Alternative 10 would be similar to those of the proposed Project with regard to visual character and views due to the consistencies with existing development patterns and lack of changes to contrast, coverage, and prominence.

- **City View Lofts and Toluca Estates**

Similar to the Project, potential buildings and signage associated with Alternative 10 would not constitute a substantial change in contrast since existing views of urban development would continue to be visible from this geographic area. Further, with regard to coverage, for the few residences that are able to see the Project Site from this location, a wide field of view is available, and Alternative 10 would not block a substantial portion of this available view. A comparison of the visual simulations for the City View Lofts area (see Figures 21 and 22 on pages 35 and 36 and Figures 121 and 122 from the Draft EIR) and the Toluca Estates area (Figure 23 on page 37 and Figure 123 from the Draft EIR) indicates that Alternative 10 impacts would be the same as those that would occur under the proposed Project. As a result, Alternative 10 impacts would be less than significant with regard to visual character and views.

- **Toluca Lake and Lakeside Golf Club**

From the Toluca Lake and Lakeside Golf Club geographic areas, views of on-site buildings and other structures are currently intermittently visible due to the existing vegetation and varying topography located within the Lakeside Golf Club. Development under Alternative 10 would continue existing on-site development patterns and would be consistent in terms of scale and massing. As such, no substantial changes in contrast and prominence would occur with the development of Alternative 10. With regard to view coverage from the Toluca Lake area, a less than substantial change would occur, as the long-range views of on-site buildings and other structures are currently intermittently visible above and through the tree lines (see Figure 24 on page 38). With regard to the Lakeside Golf Club, while new development under Alternative 10 would be noticeable, as shown in Figure 25 on page 39), a less than substantial change in view coverage would occur, as new development would not increase the portion of the Project Site that can be seen from this area.

Similarly, potential signage, whether freestanding or on the façade of a building, would be intermittently visible above and through the tree lines from the Toluca Lake area. From the Lakeside Golf Club, Alternative 10 signage would not contrast with existing development, would not alter the prominent view from this area, but could result in a limited

increase in coverage within a broad field of view. As such, no substantial changes in contrast, coverage, or prominence with regard to signage would occur. Thus, impacts from the Toluca Lake and Lakeside Golf Club geographic areas with the development of Alternative 10 would be less than significant.

Presently, no prominent view resources are visible across the Project Site from the Toluca Lake geographic area, whereas intermittent views of the Santa Monica Mountains are available beyond the Project Site from the Lakeside Golf Club. These views would remain, but could be potentially reduced to some degree by Alternative 10 development. As Alternative 10 development would not result in the substantial coverage of a valued view resource, Project impacts from the Toluca Lake and Lakeside Golf Club areas with the development of Alternative 10 would be less than significant.

Although Alternative 10 proposes more development in the Studio and Entertainment Areas than the proposed Project, impacts within this portion of the Project Site would be similar with regard to visual character and views due to the distance between these areas and the Project Site and that the additional development occurs within an area of existing on-site development (see Figures 124 and 125 from the Draft EIR).

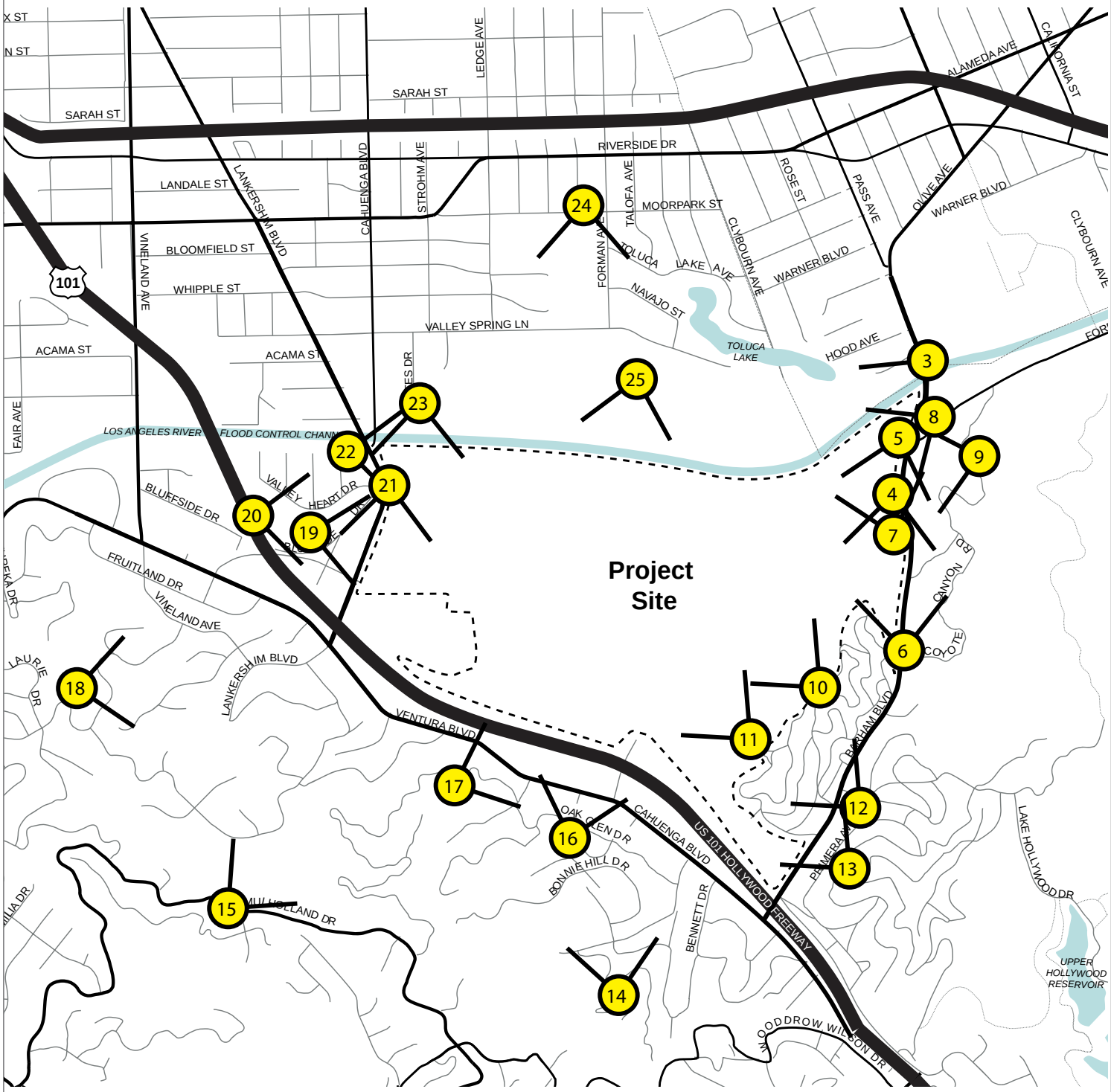
2. Consistency with Existing Regulatory Framework

Alternative 10 development would be consistent with the visual character policies set forth in the City's General Plan Framework Element, as it would include well-designed buildings, create safe and secure public spaces, provide attractive outdoor areas, and include pedestrian-oriented areas within a regional center. Alternative 10 would also be consistent with the aesthetic polices of the Sherman Oaks – Studio City – Toluca Lake – Cahuenga Pass Community Plan because Alternative 10 would not have an adverse aesthetic impact on the residential character and integrity of the existing single and multi-family neighborhoods in the area of the Project Site. Further, Alternative 10 development would result in a less than significant impact with regard to visual character and views (see above analysis). Therefore, Alternative 10 would not be anticipated to conflict with the applicable aesthetic policies set forth in the City's General Plan Framework Element and the Sherman Oaks – Studio City – Toluca Lake – Cahuenga Pass Community Plan. Impacts would thus be less than significant and similar to those of the proposed Project.

3.Cumulative Impacts

Development of Alternative 10 in combination with other future projects in the immediately surrounding area could contribute to cumulative visual impacts, resulting in a gradual change in the perception of the Project Site and surrounding areas over time. In general, the land use plans that guide development in the Project Site area anticipate the intensification of the existing commercial, industrial and studio production land uses in the surrounding area, while preserving existing residential areas. Although development under

Alternative 10 may change the skyline in this area over time, related projects are not anticipated to add to this potential impact. Through on-going implementation of applicable land use plans and Alternative 10's less than significant impacts, Alternative 10 cumulative impacts would be less than significant and similar to those of the proposed Project.



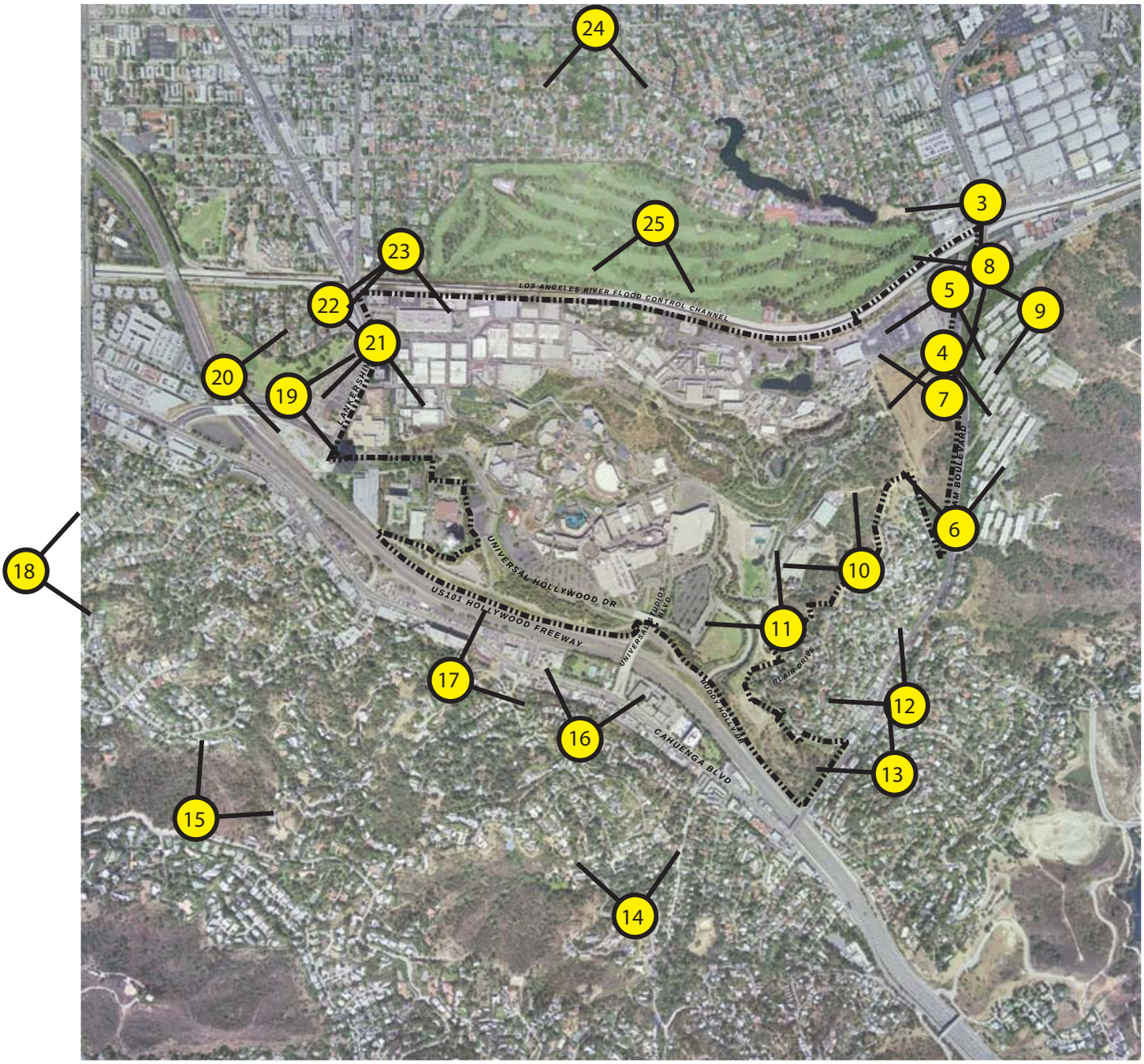
Note: Viewpoint Photo Location numbering starts with Photo Location 3.

Photo Location and Viewpoint Direction

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 1
Viewpoint Photo Locations



Note: Viewpoint Photo Location numbering starts with Photo Location 3.

Photo Location and Viewpoint Direction

Source: Rios Clementi Hale Studios, 2012.

matrix environmental

Figure 2
Viewpoint Photo Locations on Aerial Photograph

EXISTING

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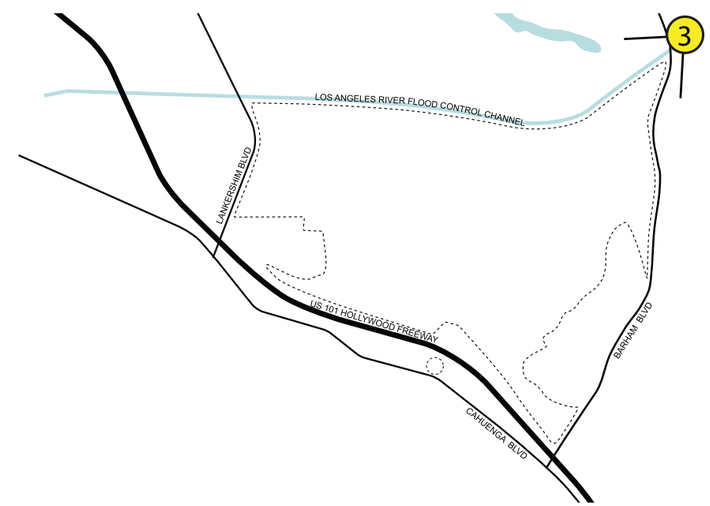

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 3
Barham Boulevard - South

EXISTING

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN W/ SIGNAGE

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 4
Barham Boulevard - South

EXISTING

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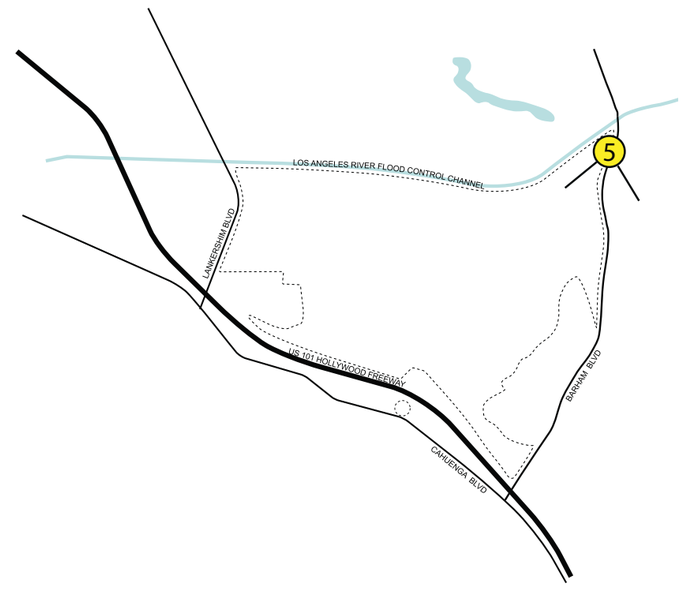
NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN W/ SIGNAGE



Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 5
Barham Boulevard - South

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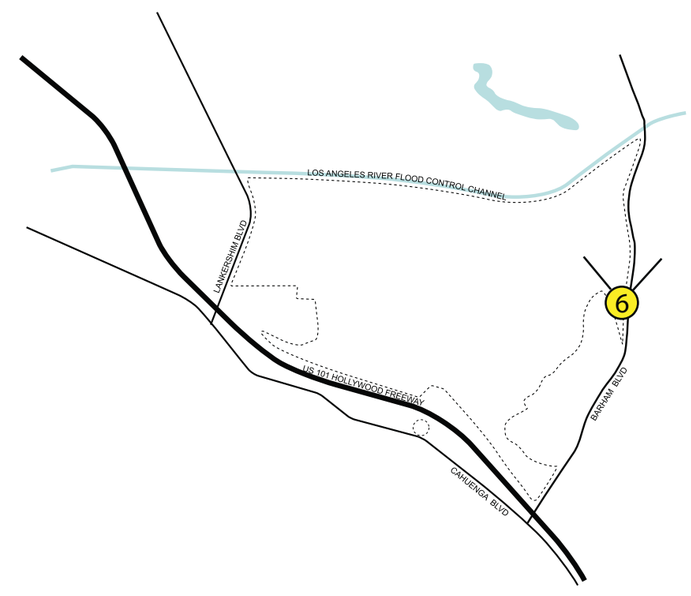

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 6
Barham Blvd North

EXISTING

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NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN W/ SIGNAGE

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 7
Barham Blvd North

EXISTING

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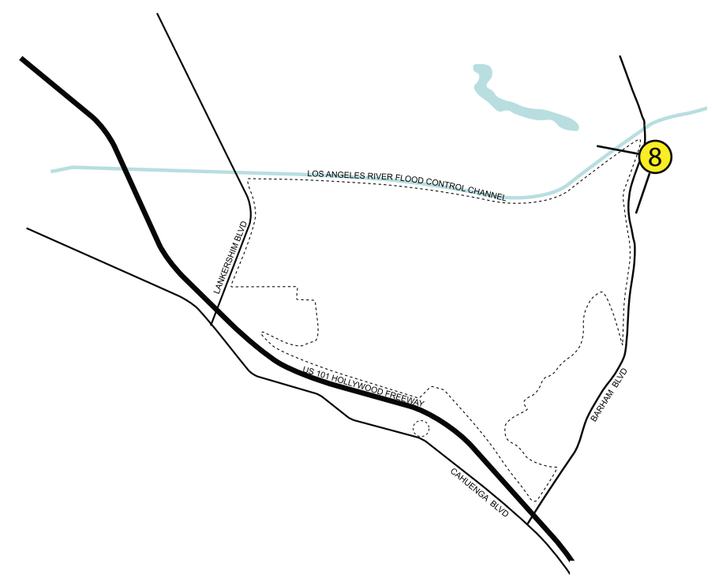

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 8
Forest Lawn Drive West

EXISTING

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN W/ SIGNAGE

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 9
Oakwood Garden Apartments

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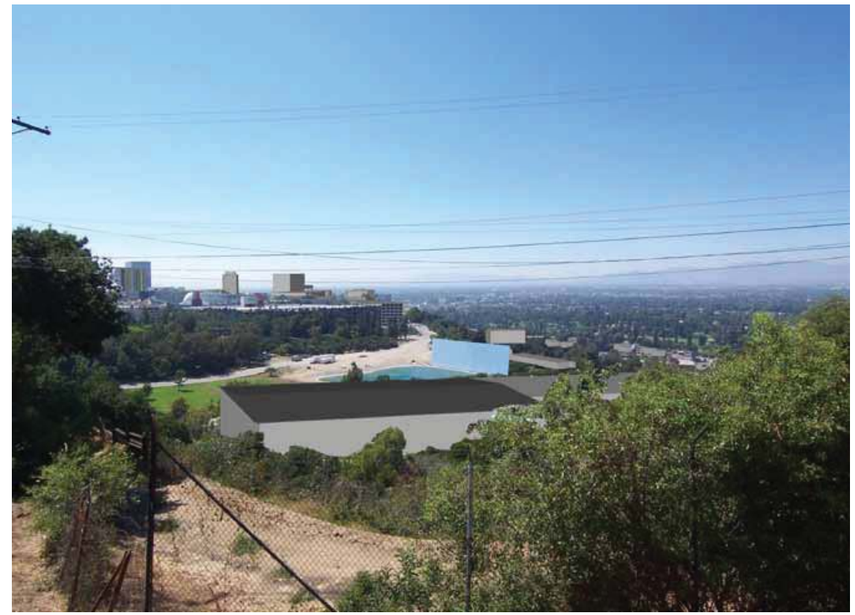

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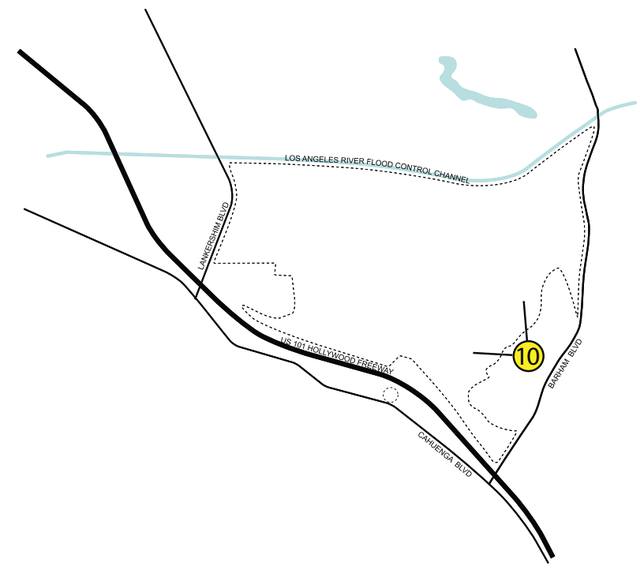

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 10
Hollywood Manor

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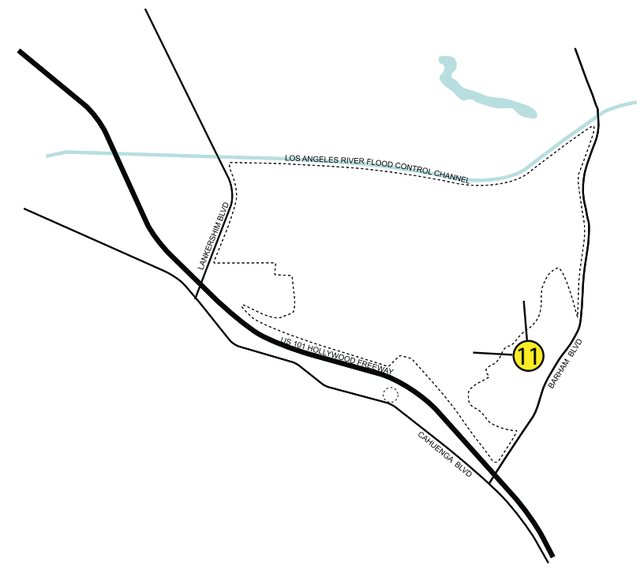

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 11
Hollywood Manor

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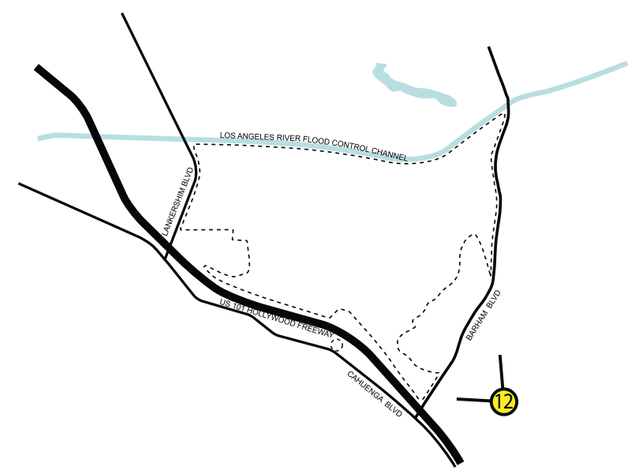

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 12
Hollywood Knolls

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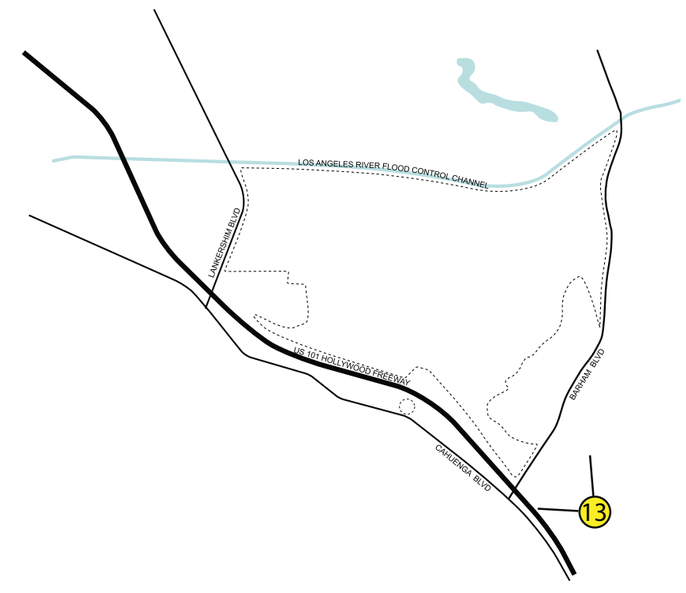

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 13
Hollywood Knolls

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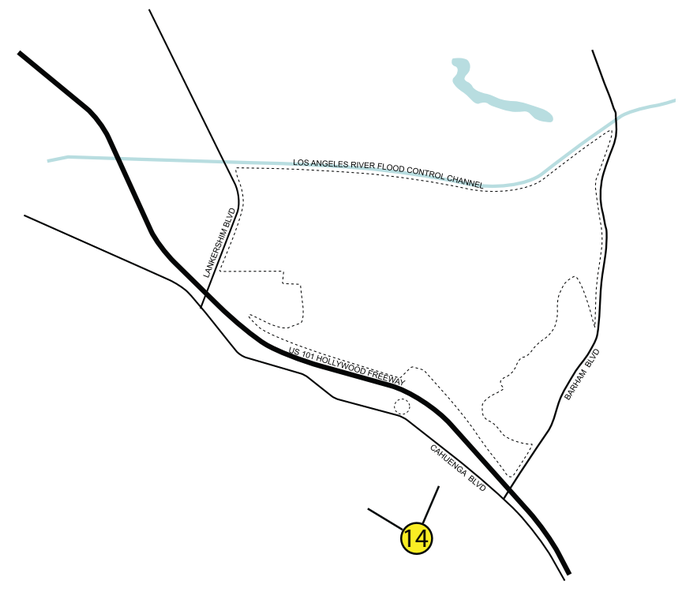

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 14
Mulholland Ridge

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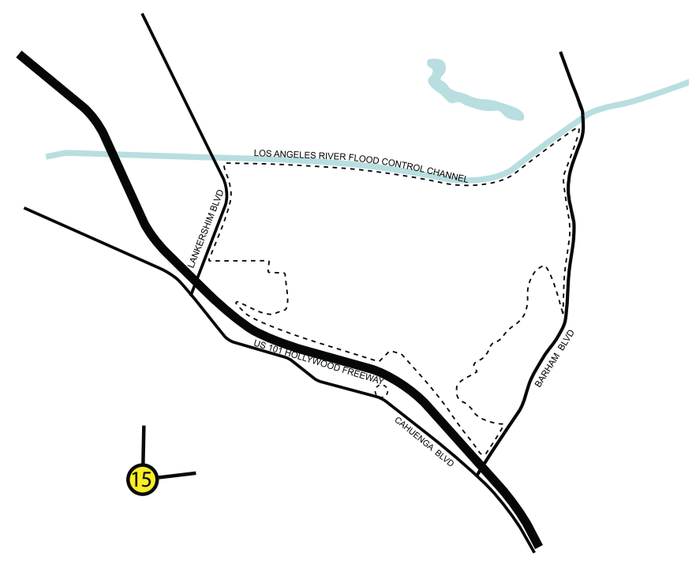

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 15
Cahuenga Pass East - High

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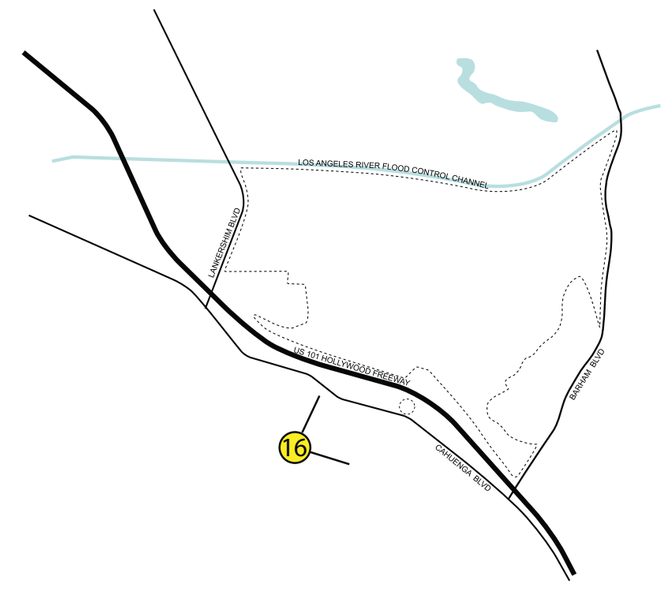

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 16
Cahuenga Pass East - Mid

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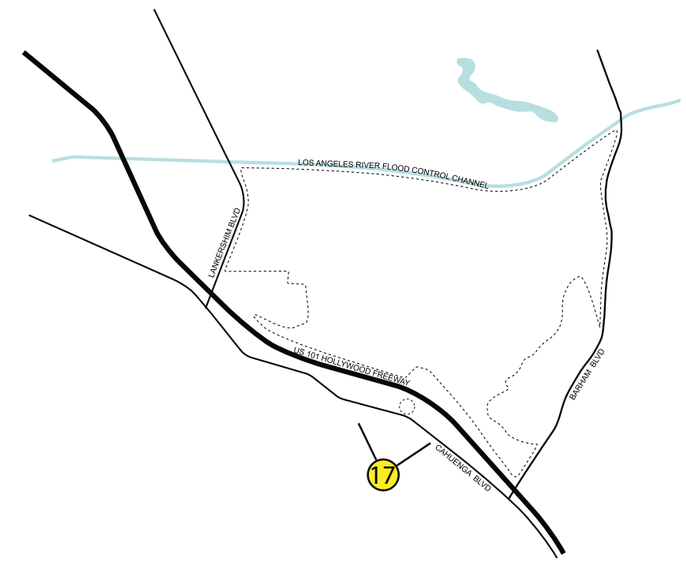

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 17
Cahuenga Pass East - Low

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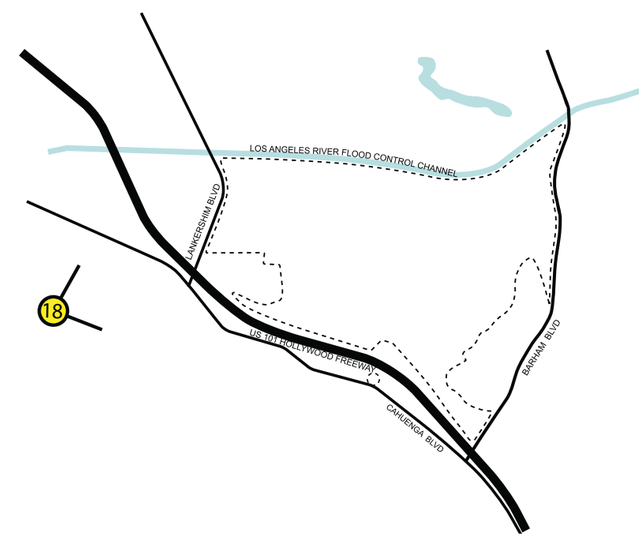

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 18
Cahuenga Pass West

EXISTING

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN

NO RESIDENTIAL ALTERNATIVE CONCEPTUAL PLAN W/ SIGNAGE

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 19
Universal City Metro Line Station and Campo de Cahuenga

EXISTING

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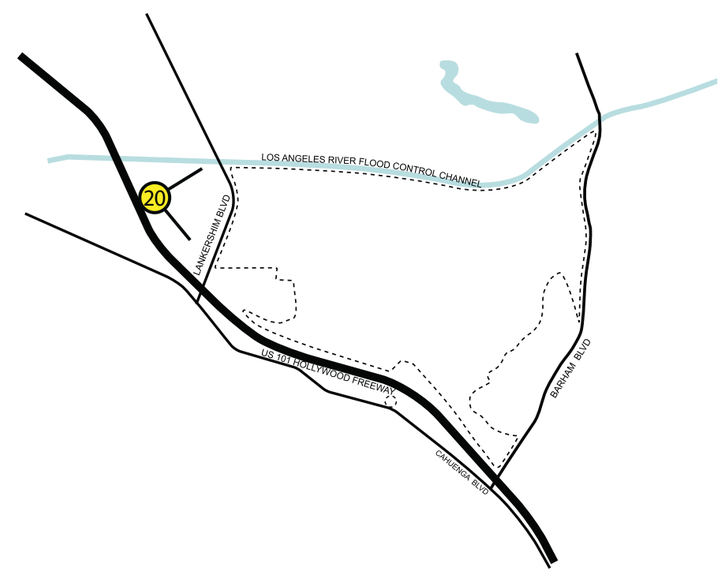

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 20
Weddington Park - South

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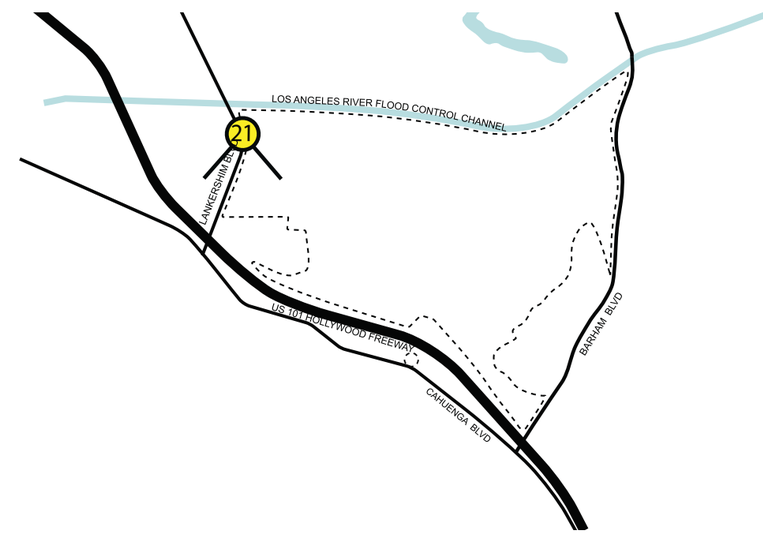

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 21
City View Lofts - South

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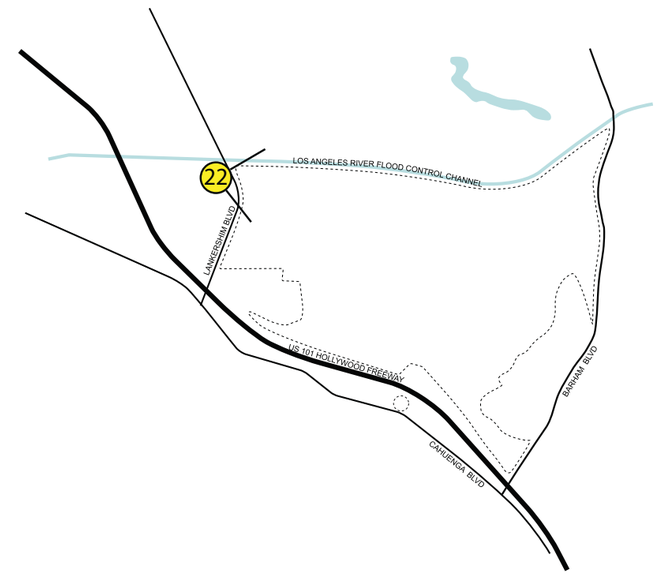

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 22
City View Lofts - East

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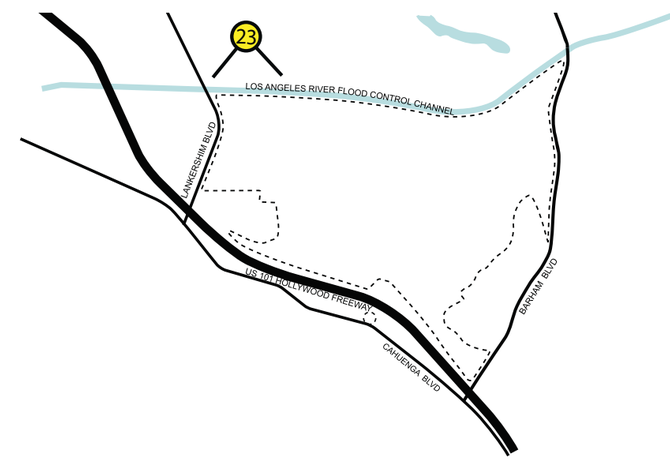

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 23
Toluca Estates

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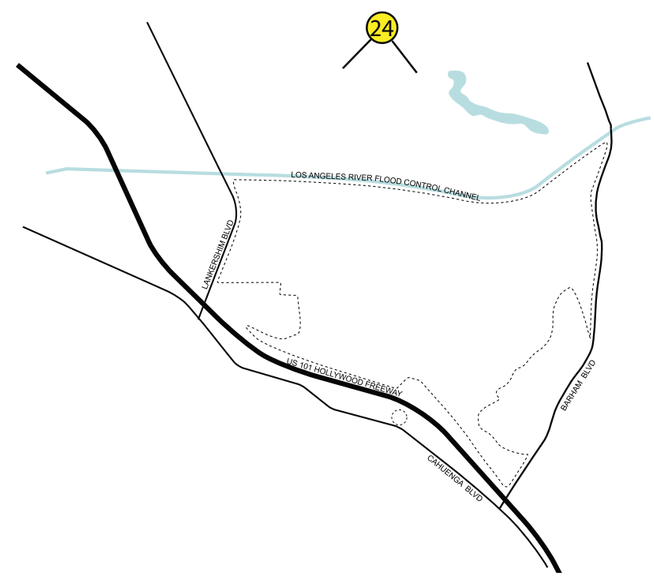

Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 24
Toluca Lake

EXISTING

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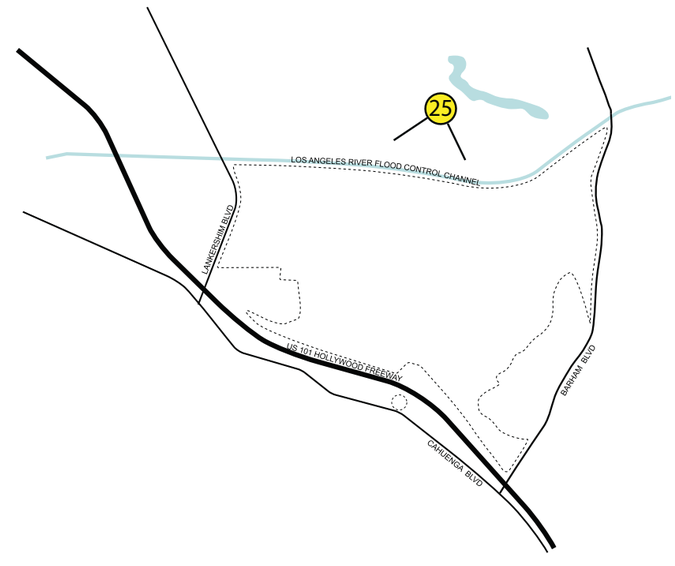


Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 25
Lakeside Golf Club

Appendix FEIR-18

Alternative 10: No Residential Alternative
Light and Glare: Natural Light

Alternative 10: No Residential Alternative

Light and Glare – Natural Light

This report analyzes the potential for Alternative 10 development to result in impacts with regard to natural light, or shading, which results from the blockage of direct sunlight by on-site buildings in a manner which affects adjacent off-site properties. This analysis addresses potential impacts to the shadow-sensitive uses that are located in the Project area. Per the *City's CEQA Thresholds Guide*, shadow-sensitive uses include routinely usable outdoor spaces associated with residential (e.g., backyards, balconies), recreational (e.g., public parks, swimming pools), and institutional (e.g., schools, convalescent homes) uses, as well as certain commercial uses (e.g., pedestrian oriented outdoor spaces, restaurants with outdoor eating spaces, nurseries), and existing solar collectors.

The shadow analysis presented in this report is based on the same methodology and significance thresholds used in the shade/shadow analysis of the proposed Project presented in Section IV.E.1, Light and Glare – Natural Light, of the Draft EIR. For example, the shade/shadow analysis assumes the following conservative assumptions as to how development could occur on the Project Site under Alternative 10:

1. Development could occur at the maximum heights permitted within each Height Zone and Height Exception area as measured in terms of mean sea level (MSL);

2. Development could occur anywhere on the Project Site within the boundaries of the Height Zone and Height Exception; and

3. Development of 100 percent of each Height Zone and Height Exception area could occur.

This analysis would represent the most conservative approach in projecting the casting of shadows from the full allowable height envelope under Alternative 10. This Height Zones analysis is conservative in that it assumes development of the entire Project Site to the property line or applicable setback and to the Height Zone and Height Exception, which results in more development than is permitted by Alternative 10 for purposes of this analysis. Shadow patterns from existing on-site buildings and landforms are incorporated into the analysis so that incremental increases in existing shading of off-site shadow-sensitive uses can be identified. Existing off-site topography and land uses are assumed to remain constant in the future.

Using the same significance thresholds that were used in the Draft EIR, a significant impact would occur if shadow-sensitive uses would be shaded by on-site project-related structures for more than three continuous hours between the hours of 9:00 A.M. and 3:00 P.M. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 A.M. and 5:00 P.M. Pacific Daylight Time (between early April and late October). In addition, a significant shading impact would occur if:

- Alternative 10 structures add incrementally to existing shading of off-site shadow-sensitive uses, resulting in continuous shading of such areas for three hours or more between the hours of 9:00 A.M. and 3:00 P.M. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 A.M. and 5:00 P.M. Pacific Daylight Time (between early April and late October); or

- Alternative 10 structures add incrementally to the shading of off-site shadow-sensitive uses already shaded for a period of three hours or more between the hours of 9:00 A.M. and 3:00 P.M. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 A.M. and 5:00 P.M. Pacific Daylight Time (between early April and late October).

Based on this analysis, as discussed in more detail below, Alternative 10 development would result in less than significant impacts before mitigation with regard to all off-site shadow-sensitive uses, with two exceptions. Potential impacts at the Campo de Cahuenga and the Toluca Estates areas would be reduced to less than significant levels with the proposed mitigation that would modify Alternative 10's 850-foot MSL Height Zone (see Figure 19 on page 26). Alternative 10 development would result in similar impacts compared to those of the proposed Project for the large majority of the analyzed shadow-sensitive off-site areas, as the location and maximum permitted heights of the individual height zones along the Project Site's western and northern boundaries under Alternative 10 would be the same as those of the proposed Project. Due to the reduction of building heights along the Project Site's eastern boundary under Alternative 10, the significant shading impacts that would occur before mitigation under the proposed Project within the Hollywood Manor area would be eliminated and the less than significant shading impacts within the Oakwood Garden Apartments would be reduced.

The only off-site shadow-sensitive uses that would experience an increase in shading impacts under Alternative 10 are the shadow-sensitive uses associated with the Universal Hilton and Sheraton Hotels. These impacts, however, would still remain less than significant under Alternative 10, and would occur only because development under Alternative 10 up to a maximum height exception of 1,000 feet can occur anywhere within the 890-foot MSL Height Zone, whereas heights up to this level could only occur within defined locations within the 890-foot MSL Height Zone under the proposed Project. In summary, on an overall basis, shading impacts under Alternative 10 would be less than significant, and further reduce the less than significant impacts of the proposed Project.

Construction-related shading under Alternative 10 would be the same as the proposed Project's less than significant impacts. As with the Project, although construction-related shading is highly situational in nature and does not lend itself to a quantitative shadow analysis, certain observations concerning the issue can be made with regard to Alternative 10. Cranes, scaffolding, and other construction equipment associated with mid- and high-rise construction are potential sources of shadows. However, these shadows are highly transitory, given the frequency at which this construction equipment is moved and the lack of large surface areas associated with this equipment which is needed to generate shadows which are wide enough to shade a use for any considerable period. Therefore, any construction-related shading associated with development of Alternative 10 would not be expected to cause a significant shading impact. Thus, Alternative 10 construction-related shading impacts would be less than significant and the same as those of the proposed Project.

None of the related projects would contribute to a cumulative shading impact, as the Metro Universal related project is no longer proposed. Thus, cumulative shading impacts under Alternative 10 would be less than significant, and would further reduce the less than significant cumulative shading impacts of the proposed Project.

Furthermore, the proposed annexation/detachment of land areas between the City of Los Angeles and County of Los Angeles would not alter the potential for shade/shadow impacts on the Project Site.

The following provides a more detailed discussion of Alternative 10's shade/shadow impacts from the 13 off-site locations analyzed.

1. Potential Impacts at Individual Receptors

Shadows from development that could occur under Alternative 10 were analyzed with regard to the 13 off-site locations analyzed in the Draft EIR as shown in Figure 1 on page 8. Figure 2 on page 9, presents the height zones proposed for Alternative 10 and which serve as the basis for this analysis. Figures 3 through 14 on pages 10 through 21 show all of the off-site shadows cast by Alternative 10 Height Zones during each season for all Height Zones, whereas Figures 15 through 18 on pages 22 through 25 show the extent of shading that off-site shadow-sensitive uses would experience during each season. The analysis presented below starts with the off-site shadow-sensitive uses to the west of the Project Site and then works around the Project Site in a clockwise fashion.

- **Campo de Cahuenga**

The configuration of the height zones and their maximum allowable heights under Alternative 10 are the same as those of the proposed Project with regard to the shadow-sensitive receptors located to the west of the Project Site. As such, less than significant

impacts would occur at the Campo de Cahuenga during the summer and fall seasons. As the proposed 850-foot MSL Height Zone would cause the Campo de Cahuenga to be shaded for 3.5 hours during the spring equinox and would add one-half hour of shading to an area fully shaded for 3.0 hours during the winter solstice, potential impacts to this location would be significant at these times of the year without mitigation. This assessment of significance is conservative as this location currently experiences at least some shading from existing sources throughout the year. However, as existing shading from vegetation and other local sources is difficult to quantify, such shading was not taken into account in this determination of significance. Notwithstanding, this impact would be reduced to a less than significant level with the reductions to the allowable heights within the 850-foot MSL Height Zone that are shown in Figure 19 on page 26. The reductions are consistent with mitigation proposed for the Project (See Mitigation Measure E.1-2).

- **Weddington Park (South), Island Residential Area, and City View Lofts**

Alternative 10 development would result in intermittent shading of these areas during most of the year. However, all three of these areas would not be shaded for three continuous hours or more during the spring equinox or winter solstice, or for four continuous hours or more during the summer solstice or fall equinox. As such, potential shading impacts attributable to Alternative 10 development with regard to Weddington Park (South), the Island Residential Area, and City View Lofts would be less than significant.

- **North Hollywood Residences**

Alternative 10 development would not shade any North Hollywood residences during the spring equinox, winter solstice, summer solstice, or fall equinox; therefore, potential shading impacts would be less than significant.

- **Ca' del Sole Restaurant**

Whereas the Ca' del Sole Restaurant would experience some shading during the winter solstice (between 9:30 A.M. and 12:30 P.M.), shadows from the 850-foot MSL Height Zone would not reach the Ca' del Sole's outdoor dining patio. As the Ca' del Sole Restaurant's outdoor dining area would not be shaded for three continuous hours or more during the spring equinox or winter solstice, or for four continuous hours or more during the summer solstice or fall equinox, potential impacts would be less than significant.

- **Toluca Estates Area**

Development within Alternative 10's 850-foot MSL Height Zone during the winter solstice, as is the case with the proposed Project, would shade one property at 22 Toluca Estates Drive for 4.5 hours (between 10:00 A.M. and 2:30 P.M.). As such, potential shading impacts at this location within the Toluca Estates area would be significant without

mitigation. All other properties within the Toluca Estates area would be shaded for less than three continuous hours during the winter solstice and less than three continuous hours during the spring equinox as well as less than four continuous hours during the summer solstice and fall equinox. The significant impact during the winter season would be reduced to a less than significant level with the reductions to the allowable heights within the 850-foot MSL Height Zone that are shown in Figure 19 on page 26. The reductions are consistent with mitigation proposed for the Project (Mitigation Measure E.1-2).

- **Lakeside Golf Club**

Although the Lakeside Golf Club is a recreational use, users of this facility are highly mobile and generally do not stay in the same location for more than a limited amount of time. Hence, the Lakeside Golf Club is not defined as shadow-sensitive. The Lakeside Golf Club is not currently shaded by Project Site or off-site structures. However, the peripheries and some internal areas of the golf course do contain large, mature trees that currently shade various portions of the golf course. During the winter solstice, buildings in Alternative 10's 625-foot, 750-foot, and 850-foot MSL Height Zones would cross the Los Angeles River Flood Control Channel and shade a narrow strip along the southern and southeastern edges of the Lakeside Golf Club during the morning, afternoon, and evening hours. Alternative 10 shadows would not occur on the Lakeside Golf Club during the summer solstice as well as the spring and fall equinoxes.

- **City of Burbank Area**

Alternative 10 development would not shade any City of Burbank shadow-sensitive uses during the spring equinox, winter solstice, summer solstice, or fall equinox; therefore, potential impacts would be less than significant.

- **Oakwood Garden Apartments**

The Oakwood Garden Apartments property would not be shaded by Alternative 10 development during the spring equinox, with very limited shadows in the late afternoon on the summer solstice, and limited shading during the afternoon on the fall equinox and winter solstice. During the summer and winter solstices, shading would be limited to the undeveloped area between the buildings and Barham Boulevard (i.e., no shading of buildings). During the fall equinox, the buildings within the Oakwood Garden Apartment development would be shaded for less than one hour in the late afternoon. Since the Oakwood Garden Apartments would not experience shading for three continuous hours or more during the spring equinox or winter solstice, or for more than four continuous hours during the summer solstice or fall equinox, potential impacts would be less than significant.

- **Hollywood Manor**

The Hollywood Manor area would not be shaded by Alternative 10 development during the spring and fall equinoxes or during the summer solstice. During the winter solstice, Alternative 10 development within the 810-foot MSL Height Zone would shade two residences in the early morning and four residences in the late afternoon. However, none of these residences would be shaded for three continuous hours or more during the spring equinox or winter solstice, or for more than four continuous hours during the summer solstice or fall equinox. Based on this analysis, shading impacts attributable to Alternative 10 within the Hollywood Manor neighborhood would be less than significant, and thus Mitigation Measure E.1-3 and E.1-4 under the proposed Project would not be required for Alternative 10.

- **Universal Hilton Hotel Outdoor Seating/Dining and Outdoor Pool/Poolside Bar Areas**

Alternative 10 development could potentially shade these shadow-sensitive locations during the early morning hours on the summer and winter solstices as well as the spring and fall equinoxes from development per the 1,000-foot MSL Height Exception. However by the late-morning time period, these areas would no longer be shaded by on-site development under Alternative 10. As the Universal Hilton Hotel's outdoor seating/dining area and pool, and poolside bar areas would not be shaded for three continuous hours or more during the spring equinox or winter solstice, or for four continuous hours or more during the summer solstice or fall equinox, potential shading impacts would be less than significant.

- **Sheraton Hotel Outdoor Pool and Poolside Bar Area**

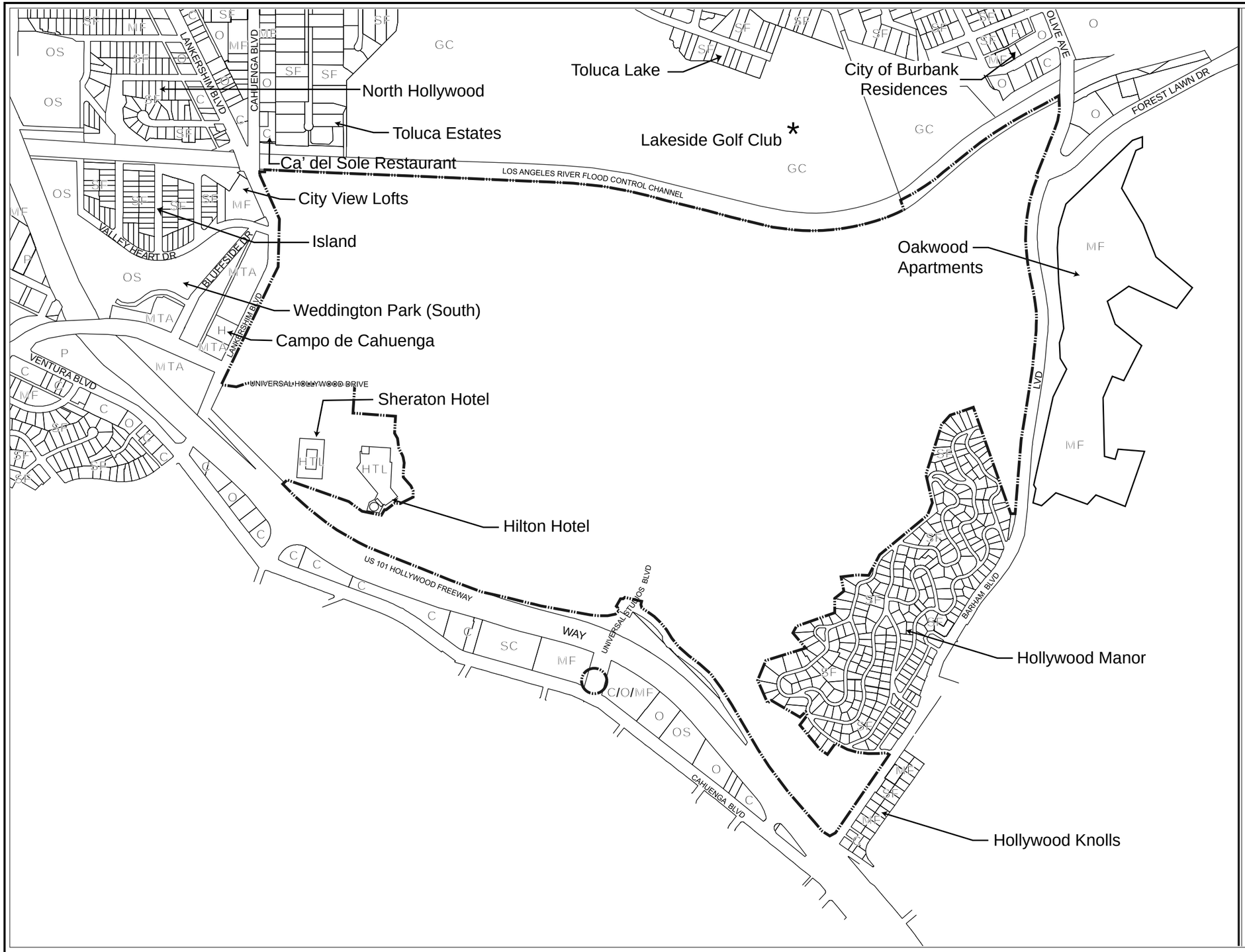
Alternative 10 development could potentially shade these shadow-sensitive locations during the early morning hours on the winter solstice and spring equinox from development within the 720-foot MSL Height Zone and the 1,000-foot MSL Height Exception. However by the late-morning time period, these areas would no longer be shaded by on-site development under Alternative 10. No shading of these shade sensitive uses would occur during the summer solstice and the fall equinox. As the Sheraton Hotel's outdoor pool and poolside bar areas would not be shaded for three continuous hours or more during the spring equinox or winter solstice, or for four continuous hours or more during the summer solstice or fall equinox, potential shading impacts would be less than significant.

2. Comparison of Impacts – Alternative 10 and the Proposed Project

Alternative 10 development would result in similar impacts compared to those of the proposed Project for the large majority of the analyzed off-site shadow-sensitive areas as the location and maximum permitted heights of the individual height zones along the Project Site's western and northern boundaries under Alternative 10 would be the same as those of the proposed Project. Due to the reduction of building heights along the Project Site's eastern boundary under Alternative 10, the significant shading impacts that would occur before mitigation under the proposed Project within the Hollywood Manor area would be eliminated and the less than significant shading impacts within the Oakwood Garden Apartments would be reduced. The only off-site shadow-sensitive uses that would experience an increase in shading impacts under Alternative 10 are the shadow-sensitive uses associated with the Universal Hilton and Sheraton Hotels. These impacts, however, would remain less than significant under Alternative 10, and would occur only because development under Alternative 10 up to a maximum height exception of 1,000 feet can occur anywhere within the 890-foot MSL Height Zone, whereas heights up to this level could only occur within defined locations under the proposed Project. However, it is important to note that this analysis assumes that the entire height exception area is 1000 feet, whereas only a cumulative maximum of a 50,000 square foot floor plate could be developed up to 1,000 feet msl. In summary, on an overall basis, Alternative 10 shading impacts would be less than those of the proposed Project.

3. Cumulative Impacts

For cumulative shading impacts to occur under Alternative 10, as with the proposed Project, the following set of conditions would need to occur: (1) the related projects would take a physical form capable of projecting substantial shadows (i.e., large mid- to high-rise development); (2) the related projects would be located within close proximity (i.e., several hundred feet) of the Project Site; (3) the related projects would shade the same off-site shadow-sensitive uses shaded by Alternative 10; and (4) that any shading of off-site shadow-sensitive uses by both Alternative 10 and cumulative development would occur in such a manner as to shade these uses for more than three continuous hours during the spring equinox or winter solstice, or for more than four continuous hours during the summer solstice or fall equinox. The only related project that meets these criteria is the Metro Universal project located on the west side of Lankershim Boulevard, north of Campo de Cahuenga Way. As this related project is no longer proposed, no related projects would contribute to a cumulative shading impact. As a result, cumulative shading impacts under Alternative 10 would be less than significant, and would further reduce the less than significant cumulative shading impacts of the proposed Project.



Legend

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

* The Lakeside Golf Club is not considered a shadow-sensitive use but is discussed in analysis.

Project Boundary

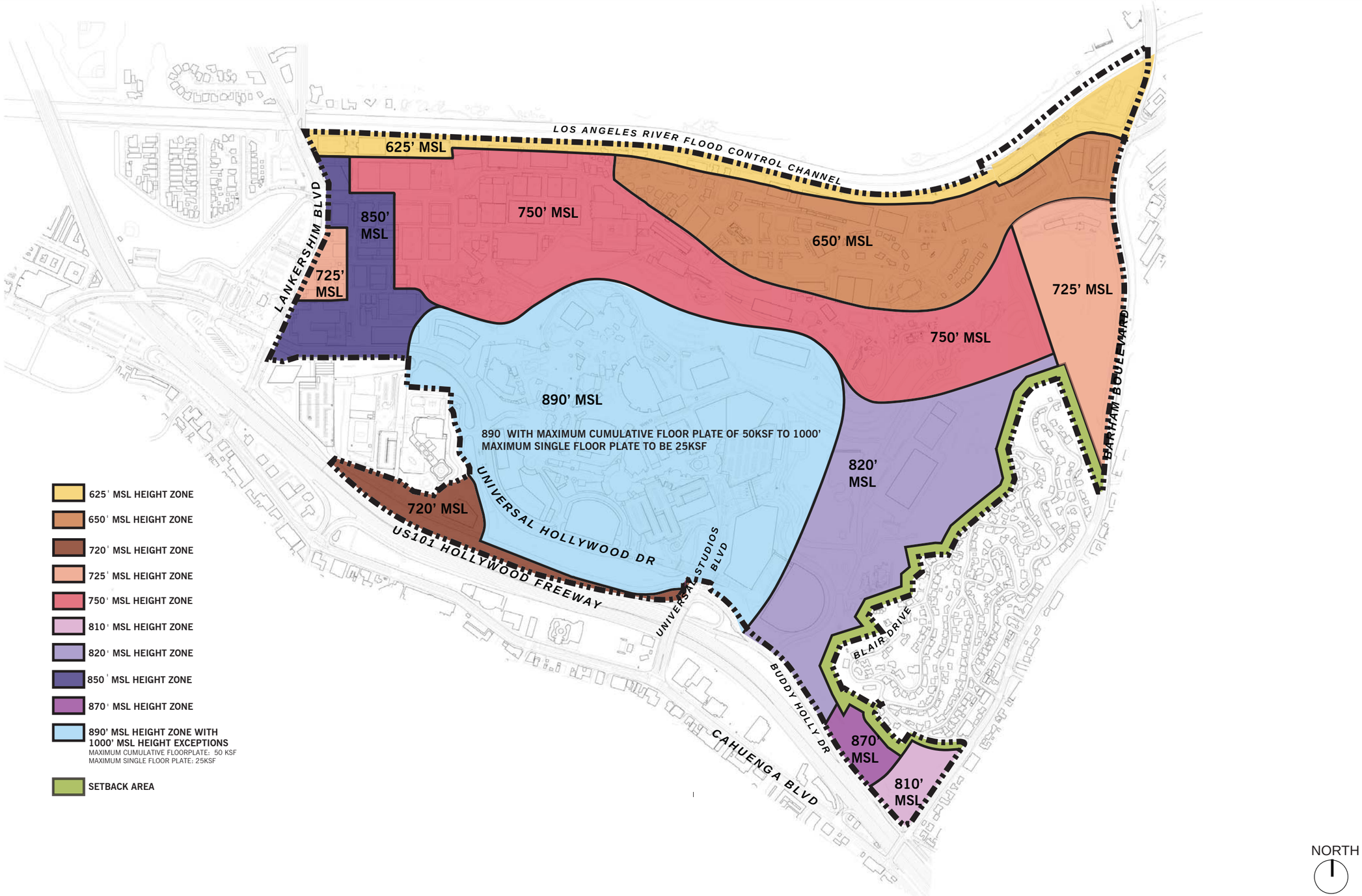
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles and Matrix Environmental, 2012.

matrix environmental

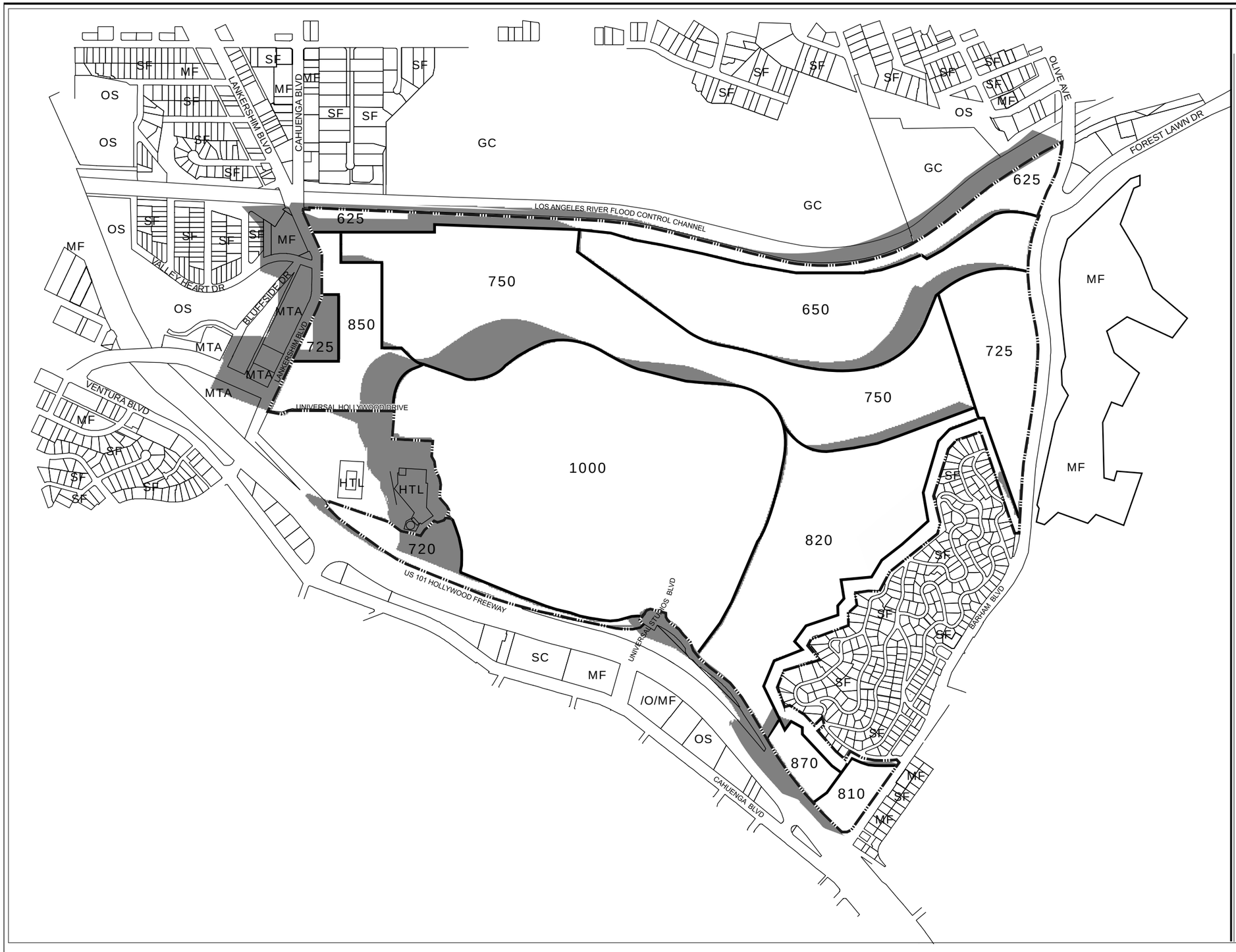
Figure 1
Off-Site Locations Analyzed



Source: Rios Clementi Hale Studios 2012.

matrix environmental

Figure 2
Alternative 10 - Proposed Height Zones



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

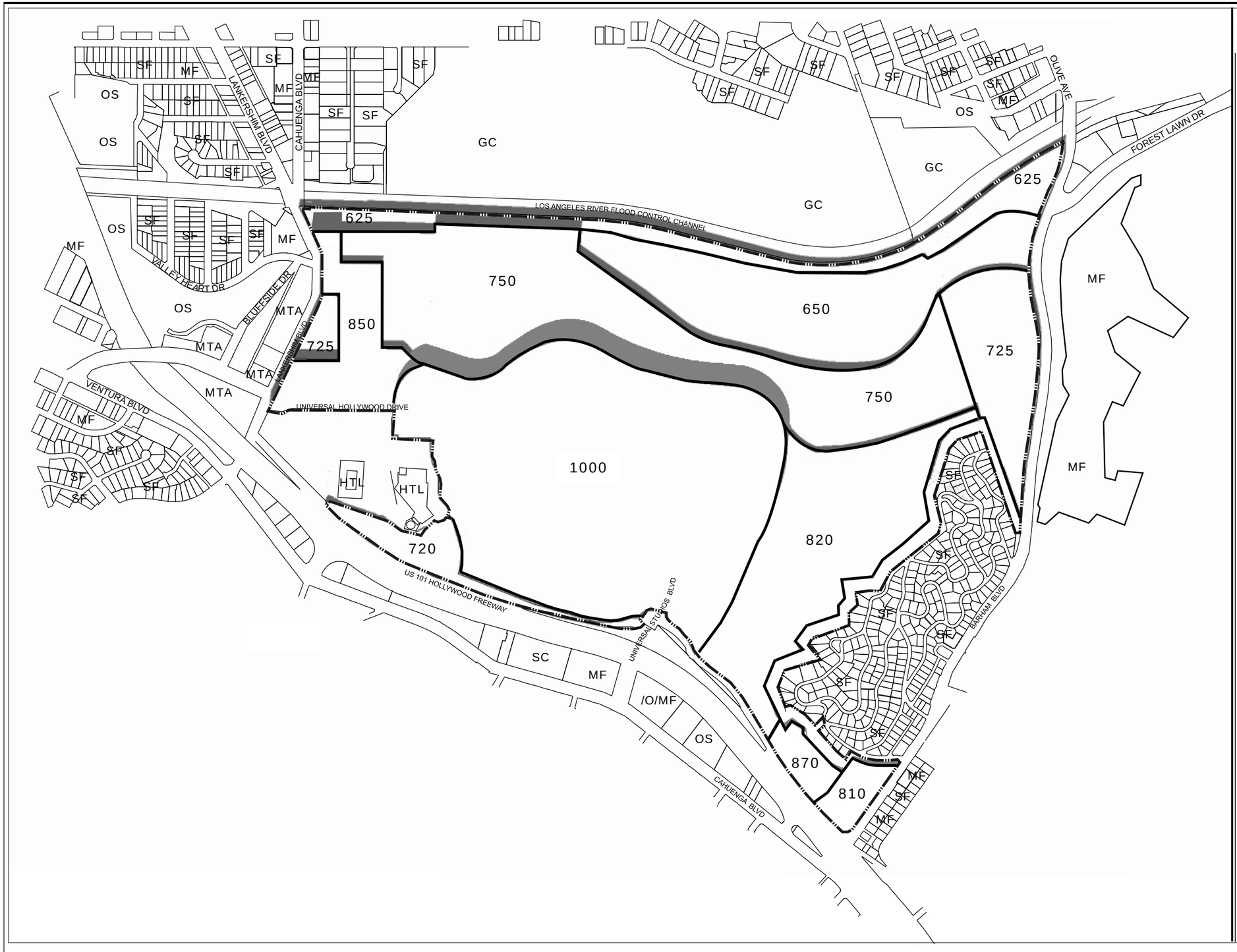
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 3
Future Fall Equinox Shadows 9:00 AM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

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SC	School/Church
GC	Golf Course
V	Vacant
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HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

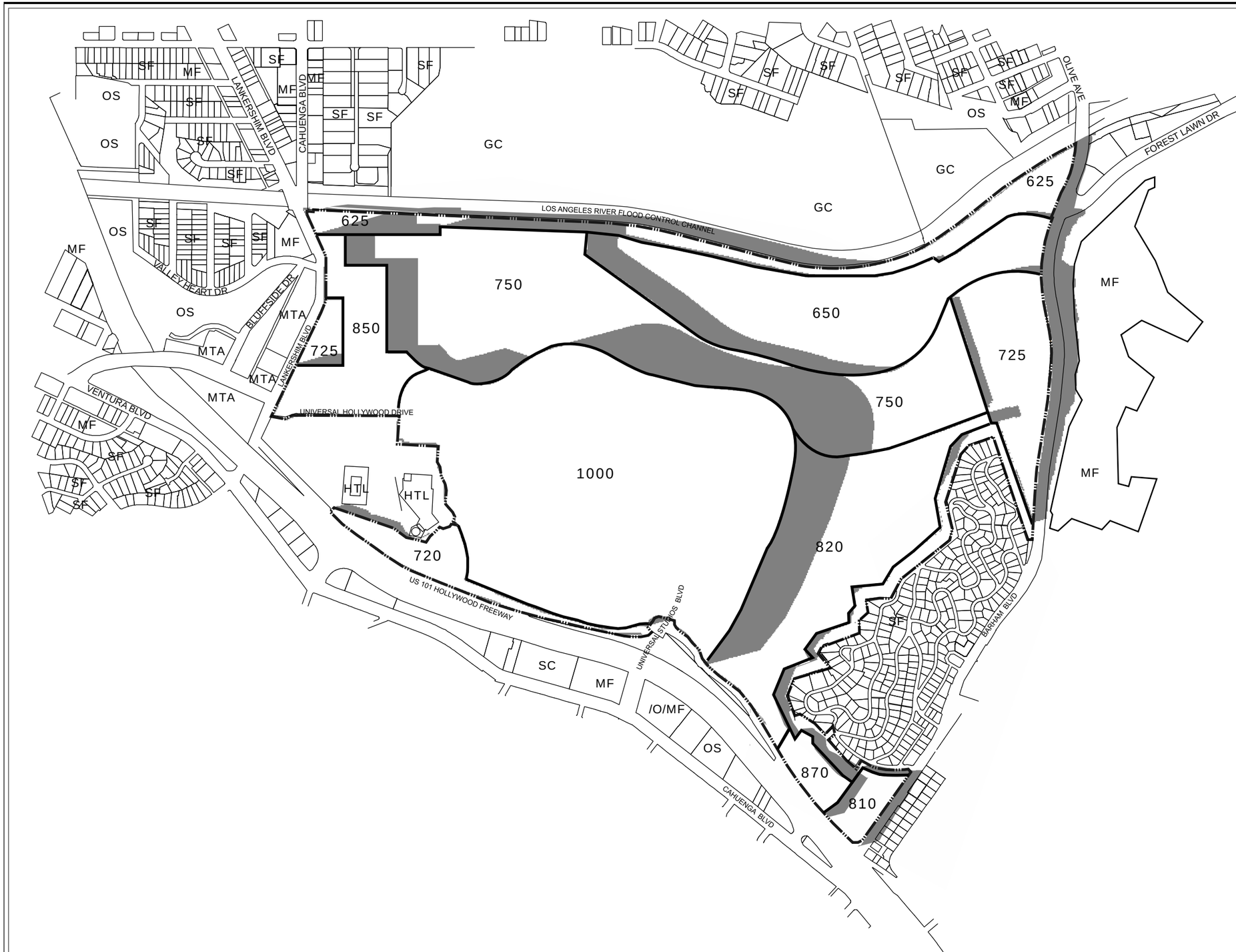
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 4
Future Fall Equinox Shadows 1:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
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SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

NORTH

0 375 750 1,125 1,500

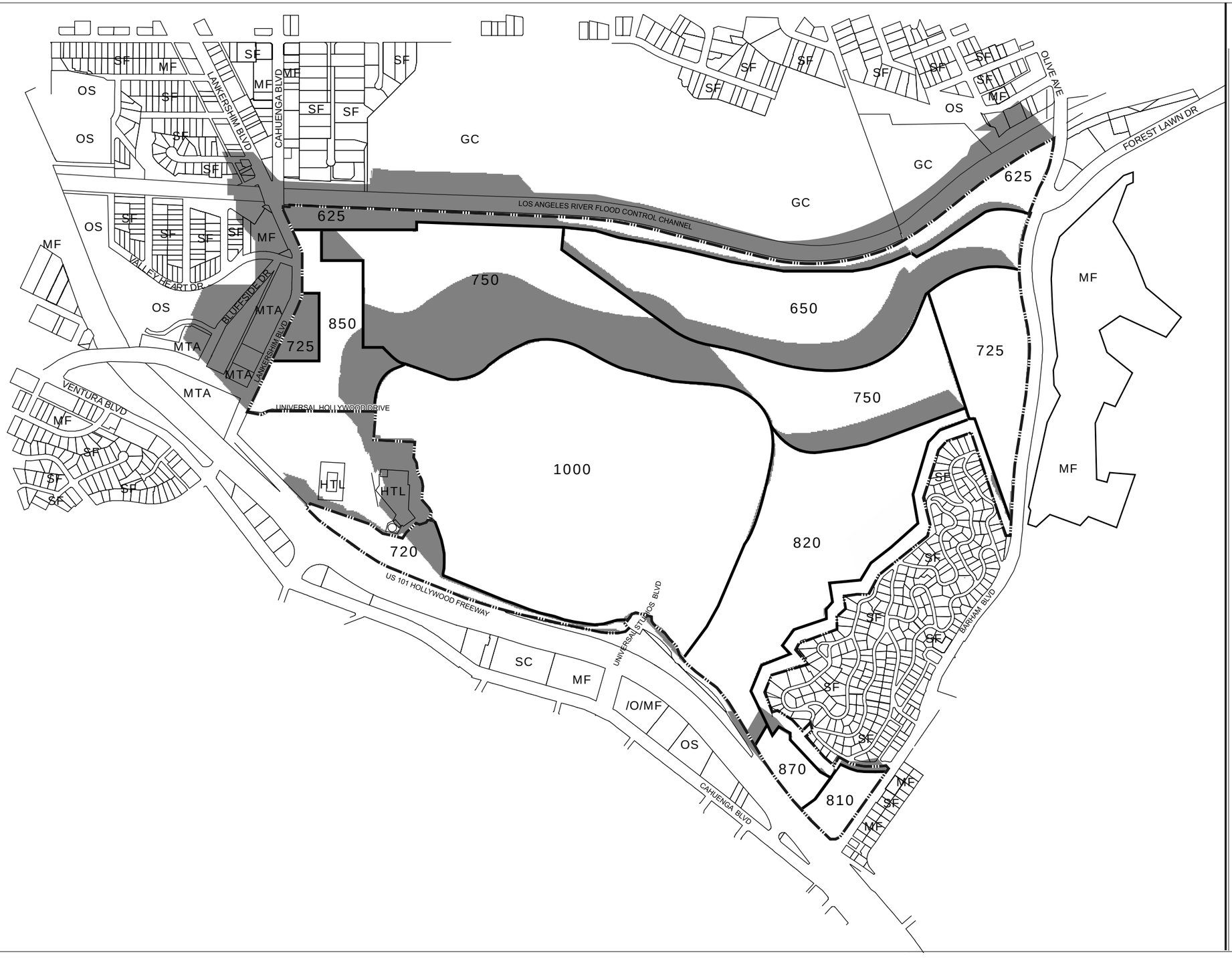
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 5

Future Fall Equinox Shadows 5:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
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GC	Golf Course
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HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

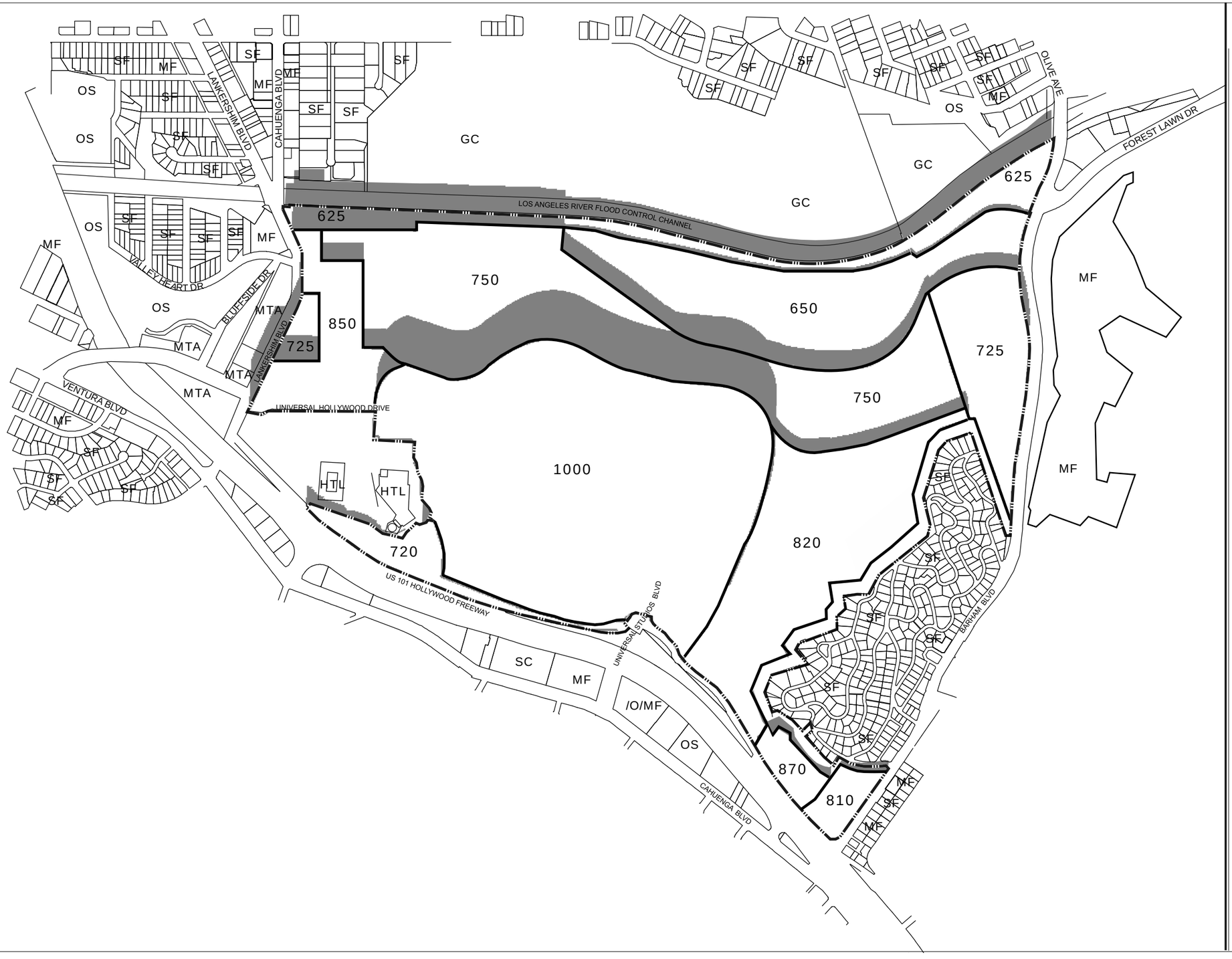
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 6
Future Winter Solstice Shadows 9:00 AM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
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HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

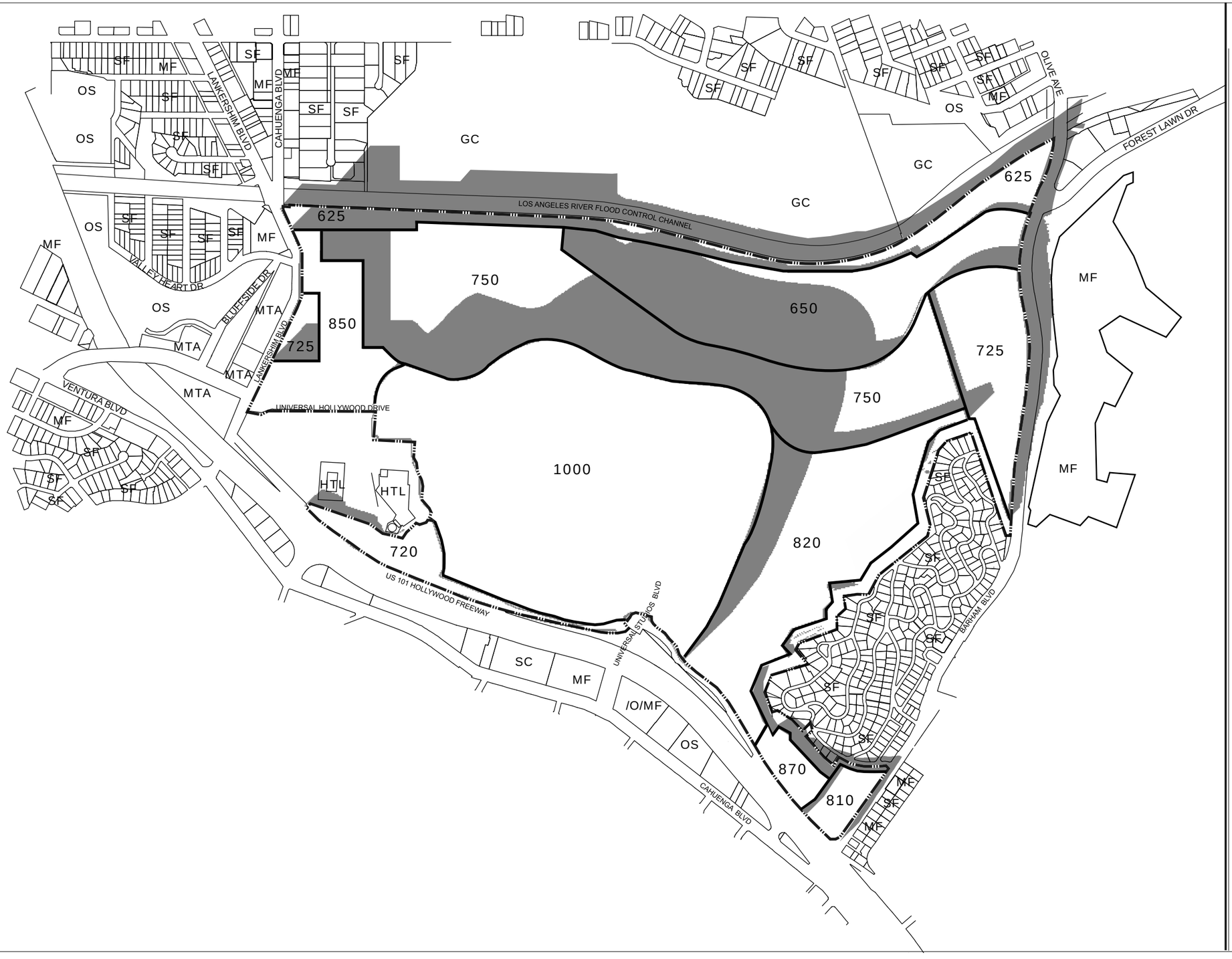
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 7
Future Winter Solstice Shadows 12:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
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HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

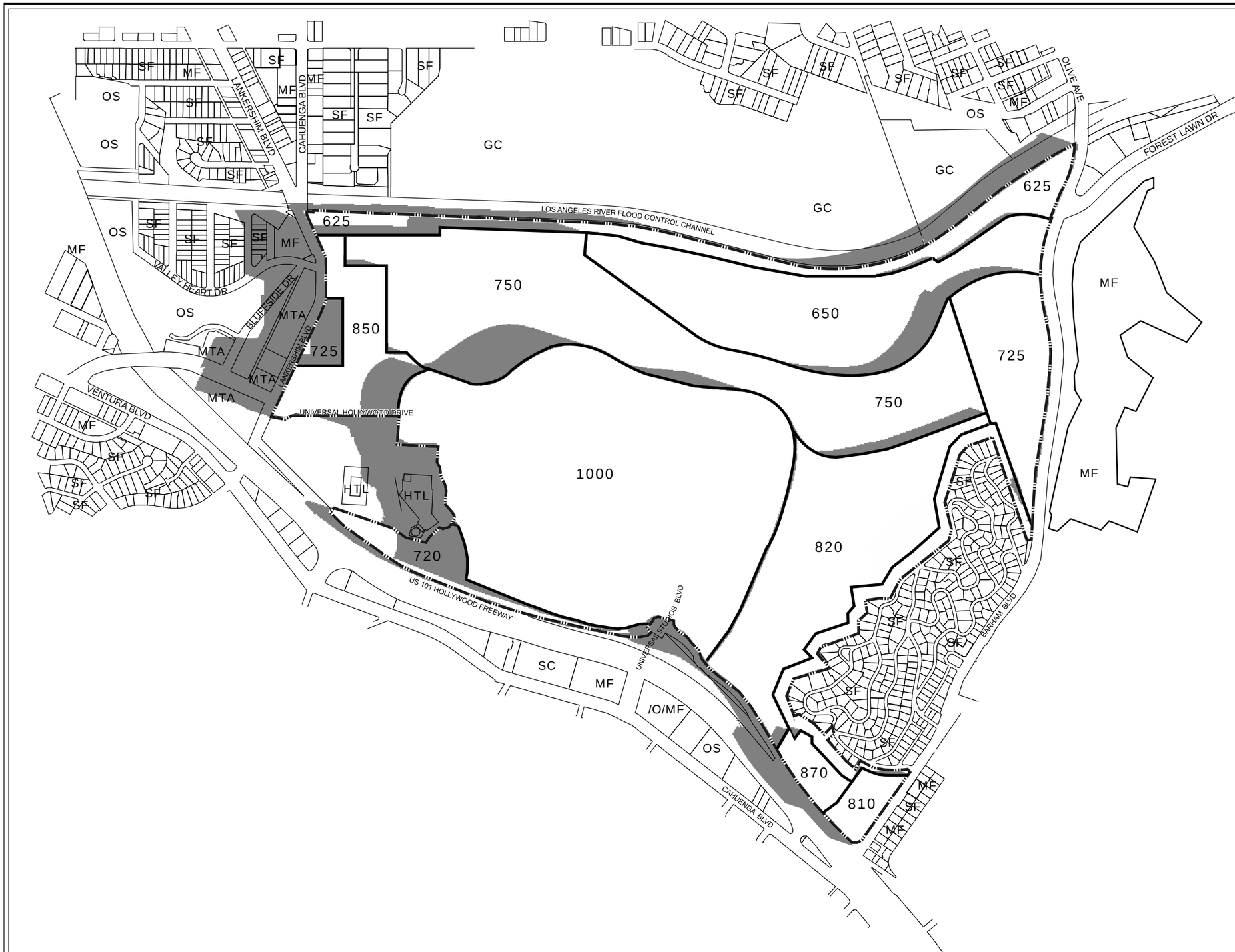
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 8
Future Winter Solstice Shadows 3:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
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Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

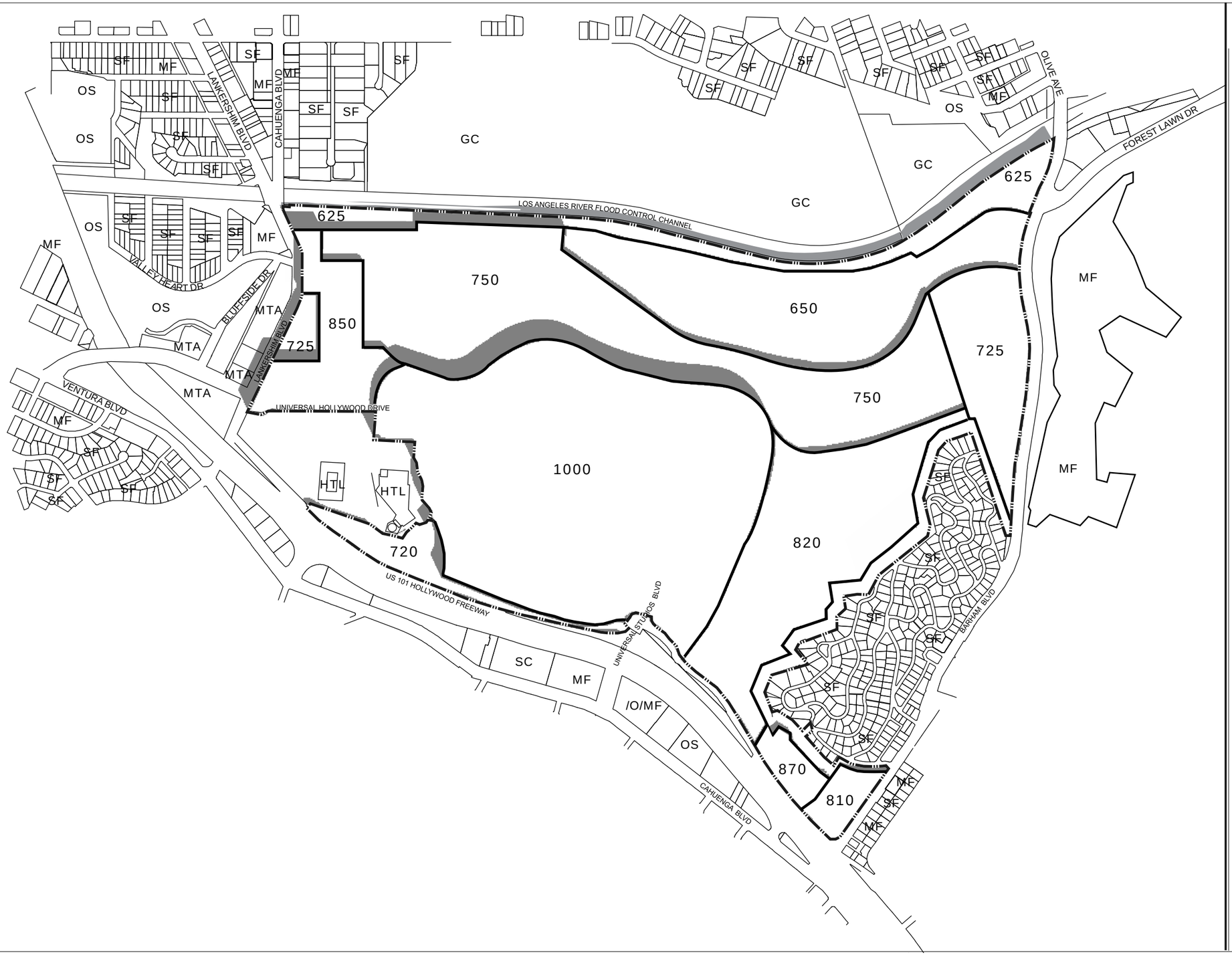
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 9
Future Spring Equinox Shadows 9:00 AM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
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Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

NORTH

0 375 750 1,125 1,500

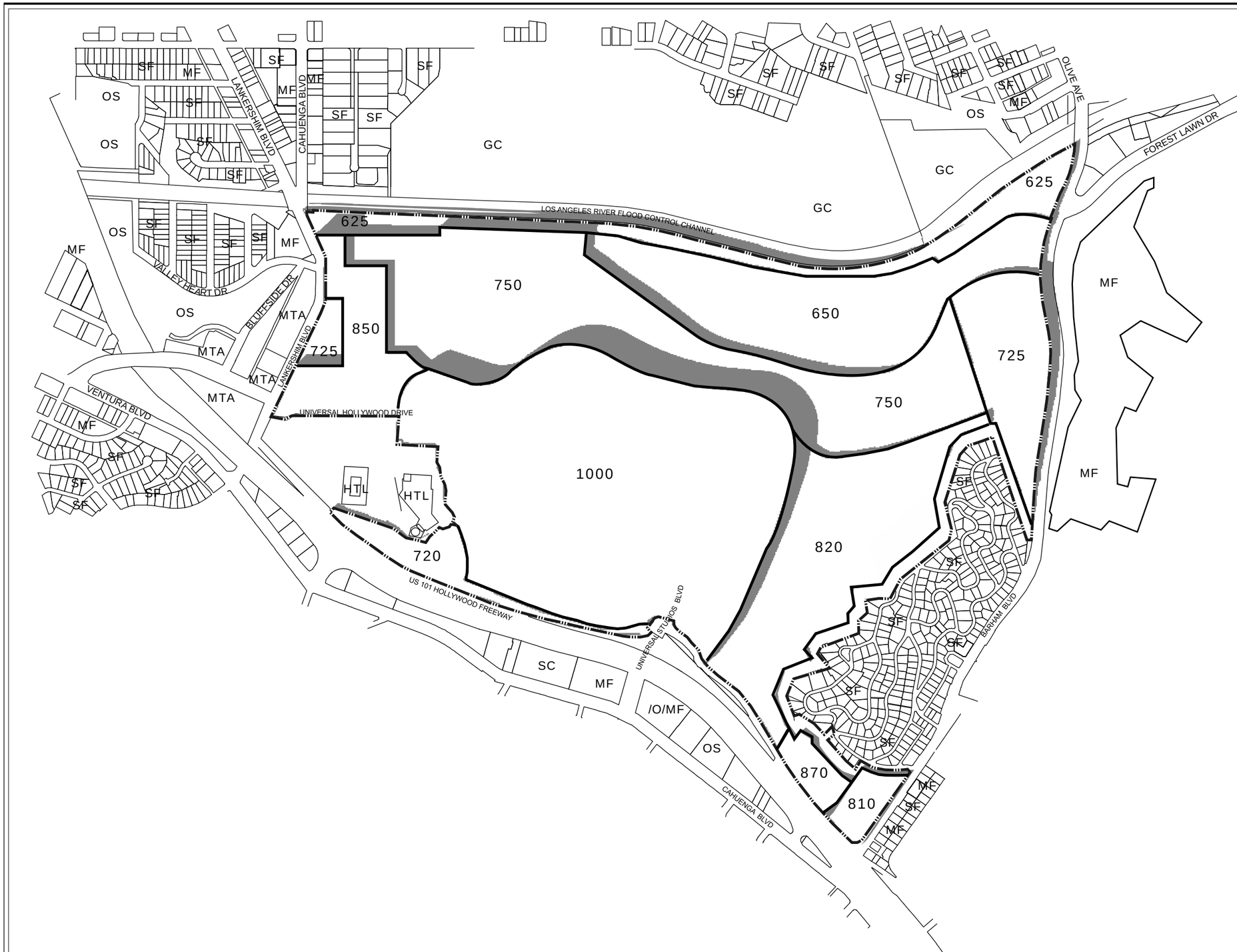
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 10

Future Spring Equinox Shadows 12:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

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Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

NORTH

0 375 750 1,125 1,500

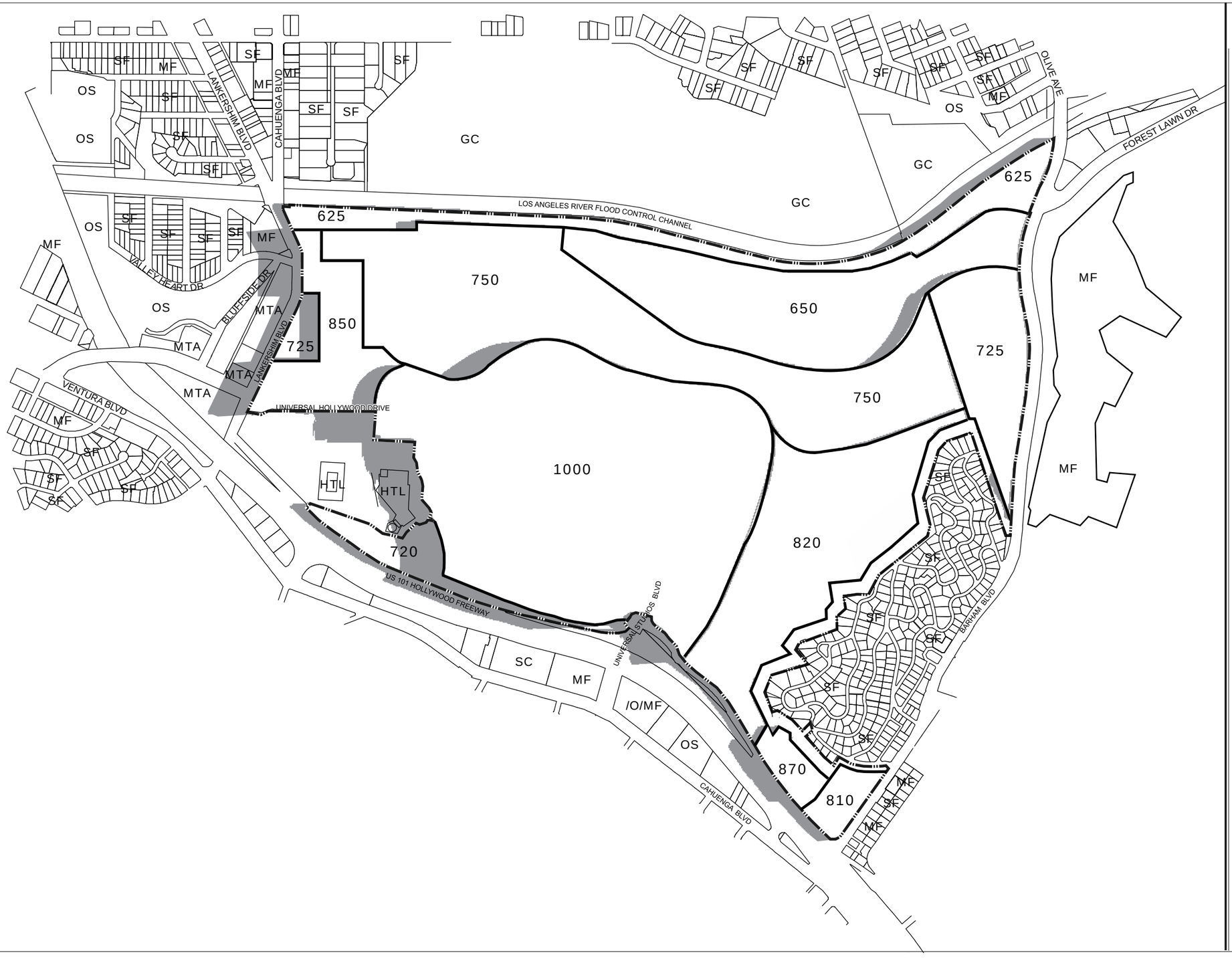
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 11

Future Spring Equinox Shadows 3:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
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Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

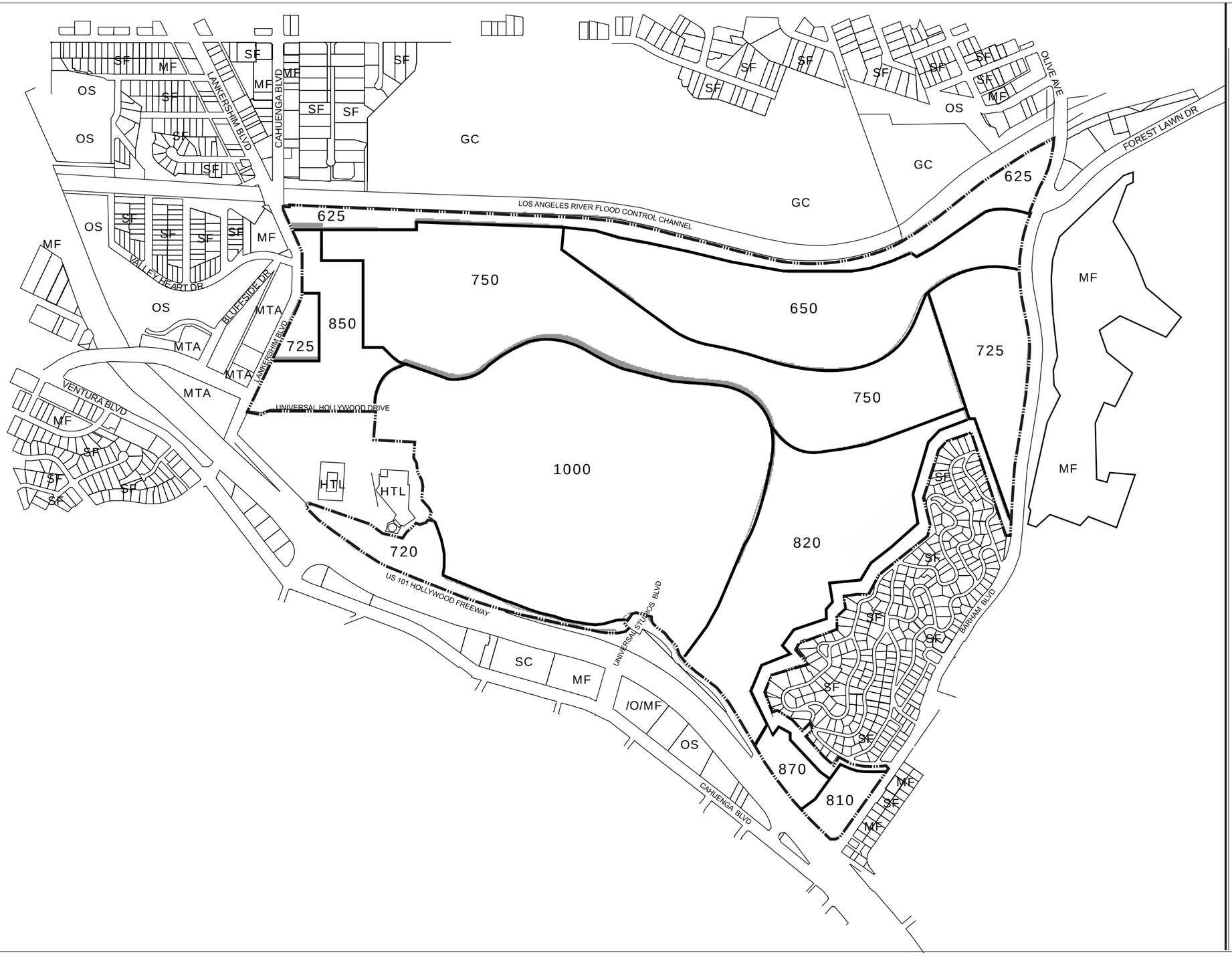
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 12
Future Summer Solstice Shadows 9:00 AM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

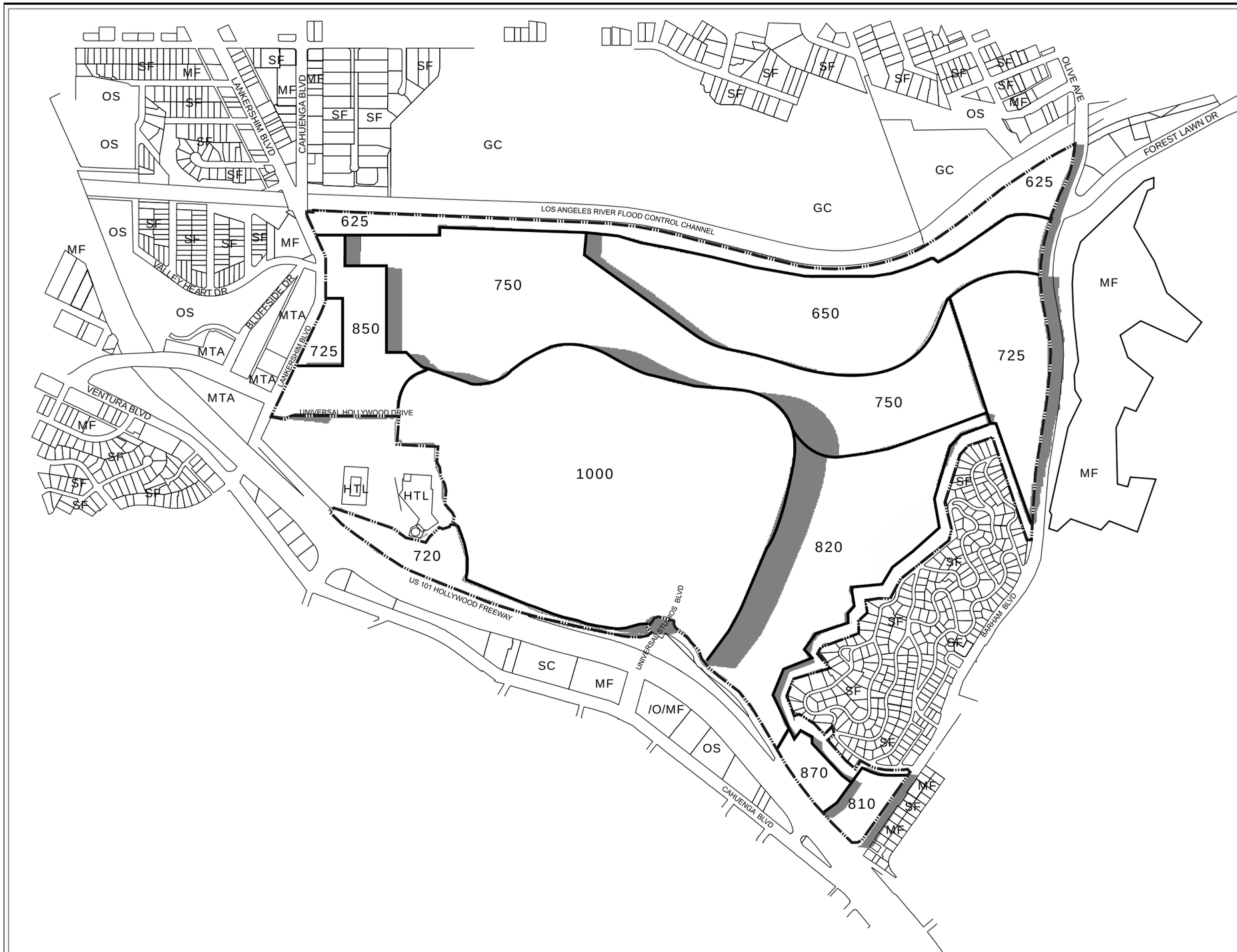
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 13
Future Summer Solstice Shadows 1:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

NORTH

0 375 750 1,125 1,500

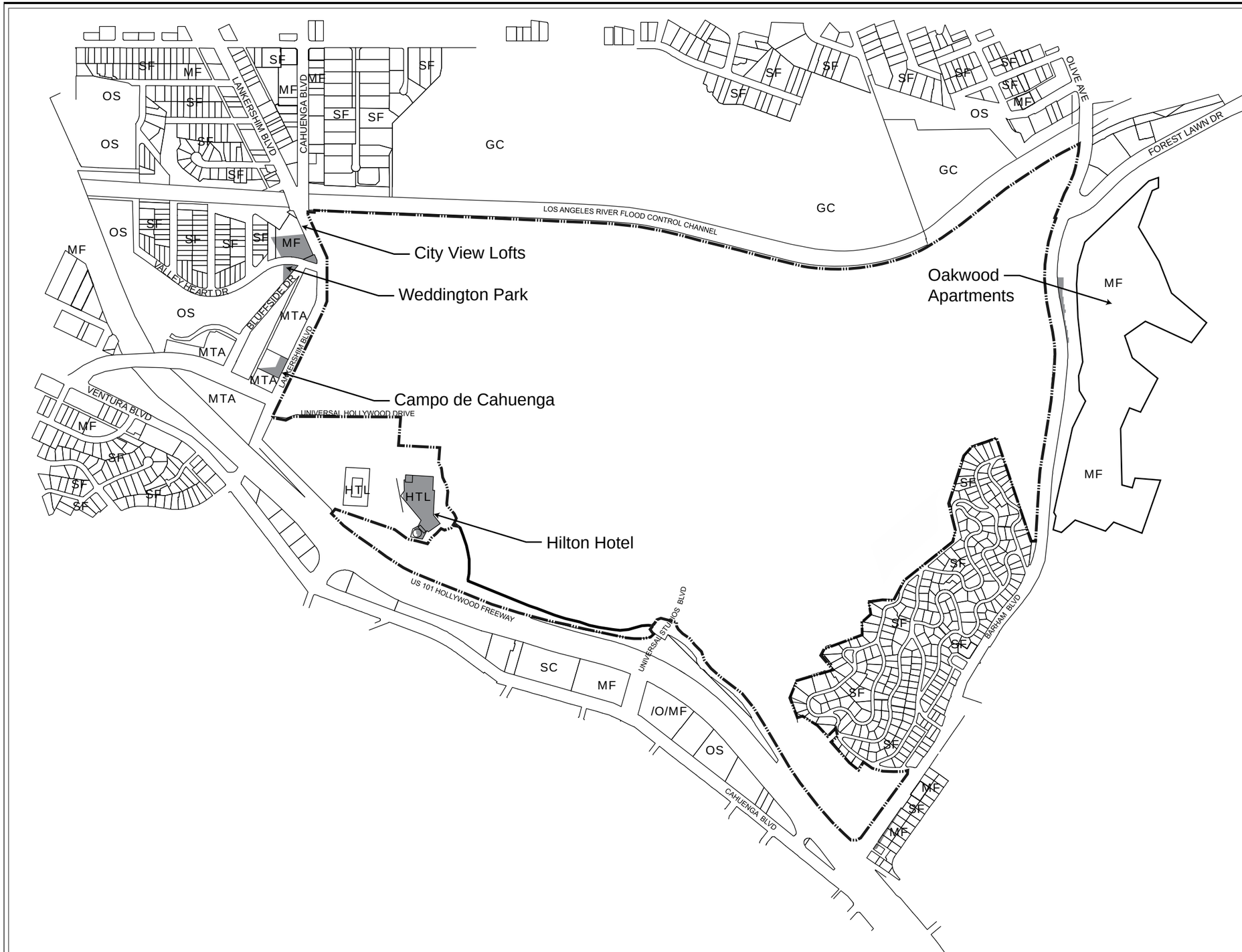
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 14

Future Summer Solstice Shadows 5:00 PM



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

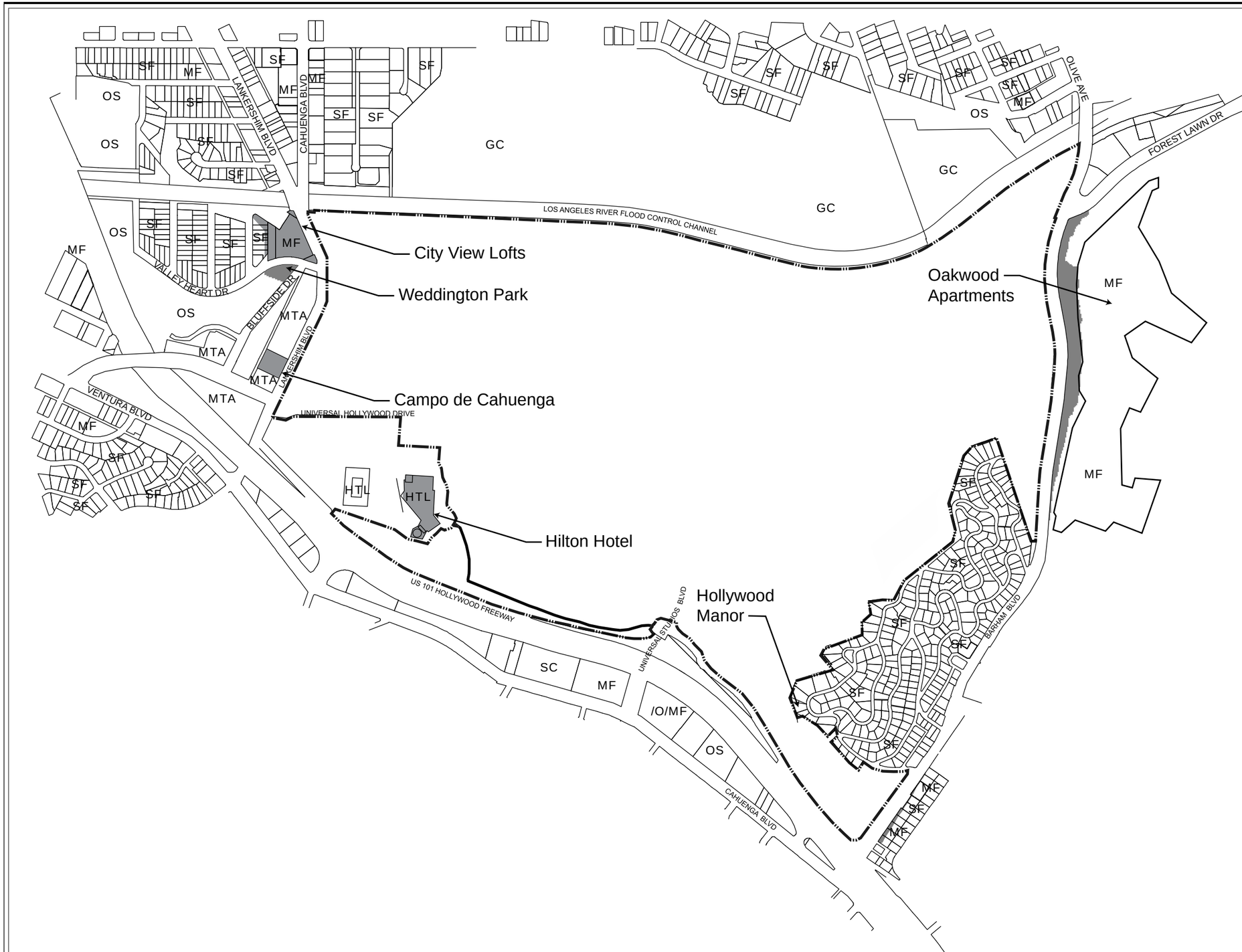
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 15
Off-Site Shadow-Sensitive Uses
Shaded in the Future by Project Height Zones and
Height Exceptions from 9:00 AM to 5:00 PM During Summer Solstice



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

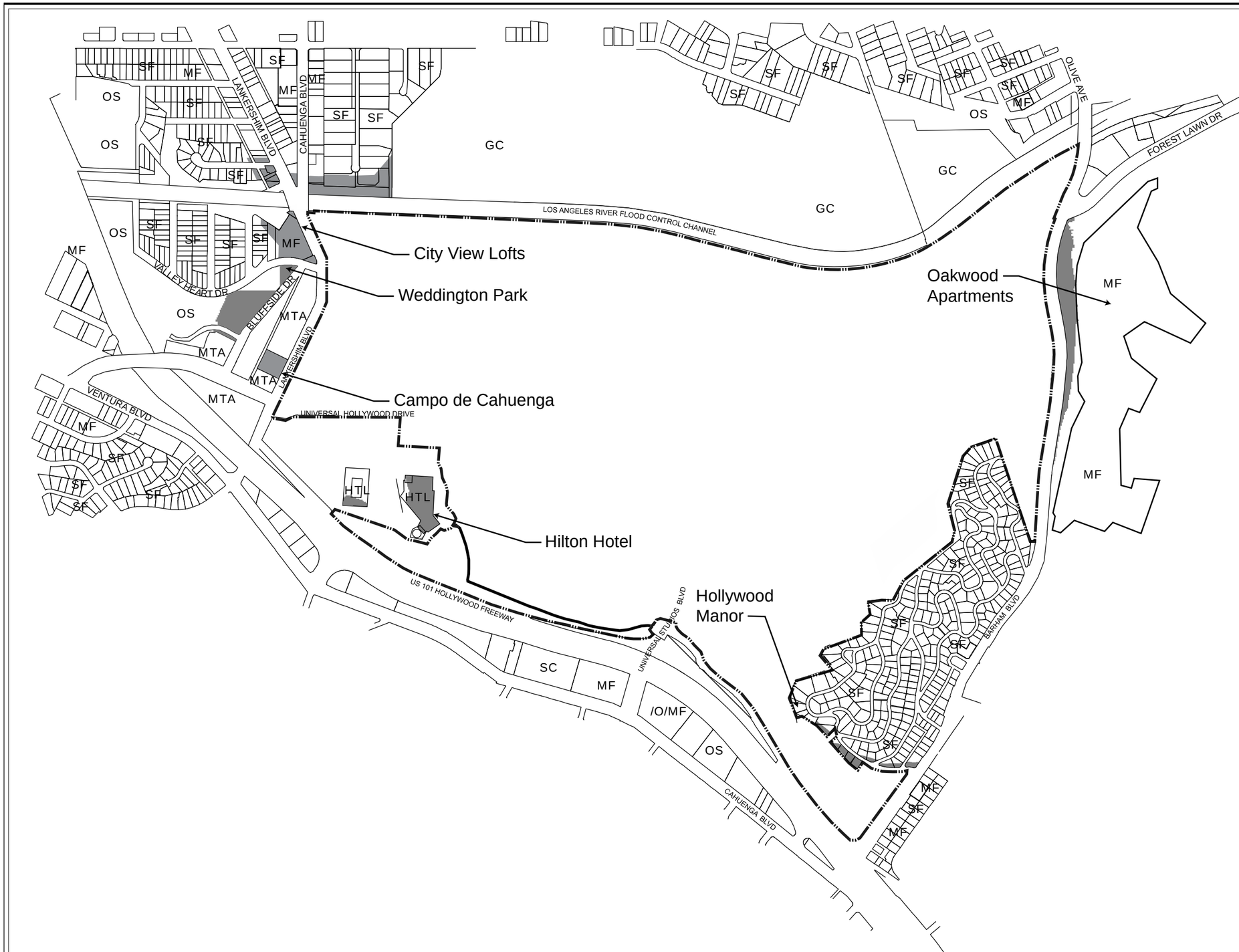
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 16
Off-Site Shadow-Sensitive Uses
Shaded in the Future by Project Height Zones and
Height Exceptions from 9:00 AM to 5:00 PM During Fall Equinox



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

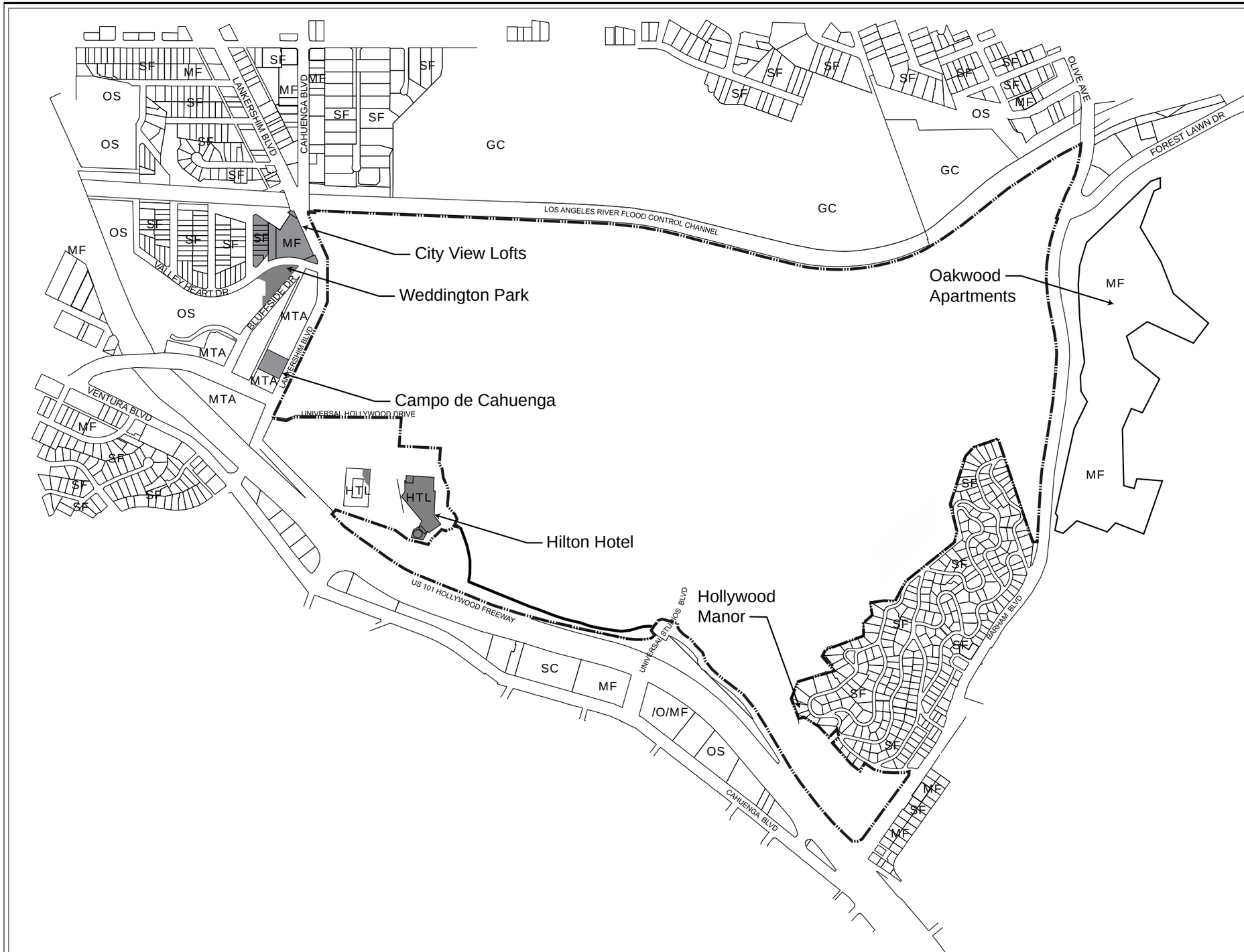
NORTH

0 375 750 1,125 1,500
Feet

Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

matrix environmental

Figure 17
Off-Site Shadow-Sensitive Uses
Shaded in the Future by Project Height Zones and
Height Exceptions from 9:00 AM to 3:00 PM During Winter Solstice



Legend

625 Height Zone

Note: In Height Zones with Height Exceptions, the number referenced and analysis is based on the Height Exception.

Jurisdictional Boundaries

Height District Boundary

Proposed Project Shadows

Project Boundary

Note: As a result of incorporating topographical features into the shadows analysis, the shape of some shadows may appear to be incongruent to the shape of the building or Height Zone casting the shadow.

Land Use

SF	Single-Family Residential
MF	Multiple-Family Residential
C	Commercial
O	Office
OS	Park/Open Space
SC	School/Church
GC	Golf Course
V	Vacant
P	Parking
H	Historic
HTL	Hotel
MTA	Metro Universal Red Line Station

Project Boundary

Note: All heights are expressed in terms of height above mean sea level (msl).

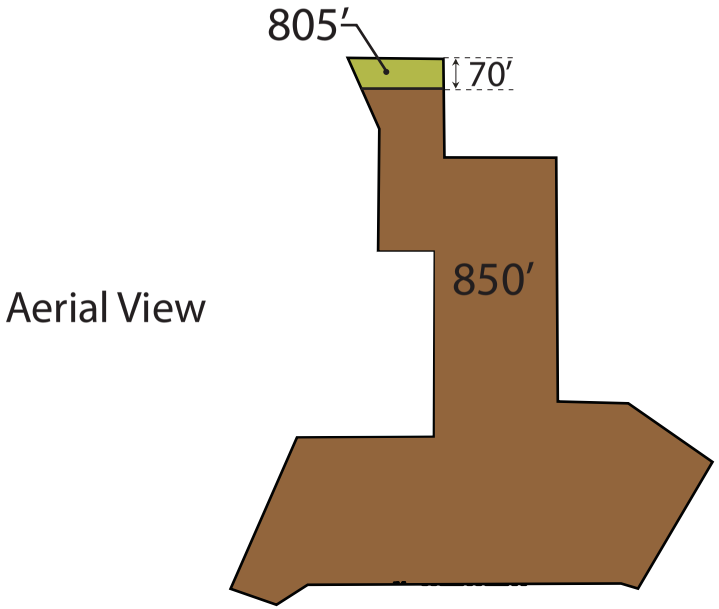
NORTH

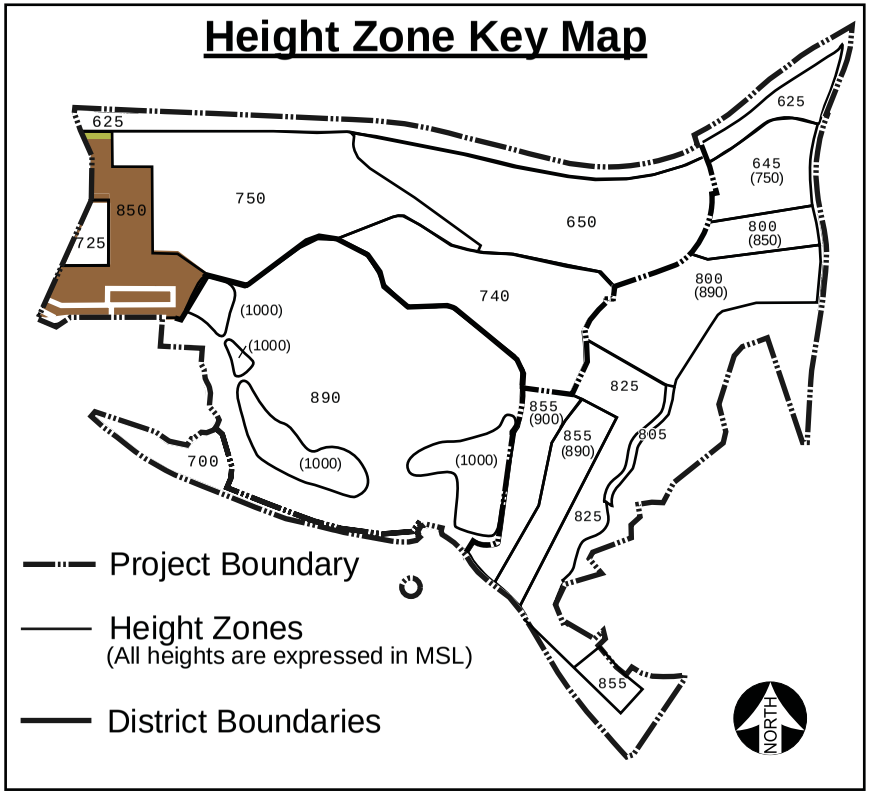
0 375 750 1,125 1,500
Feet

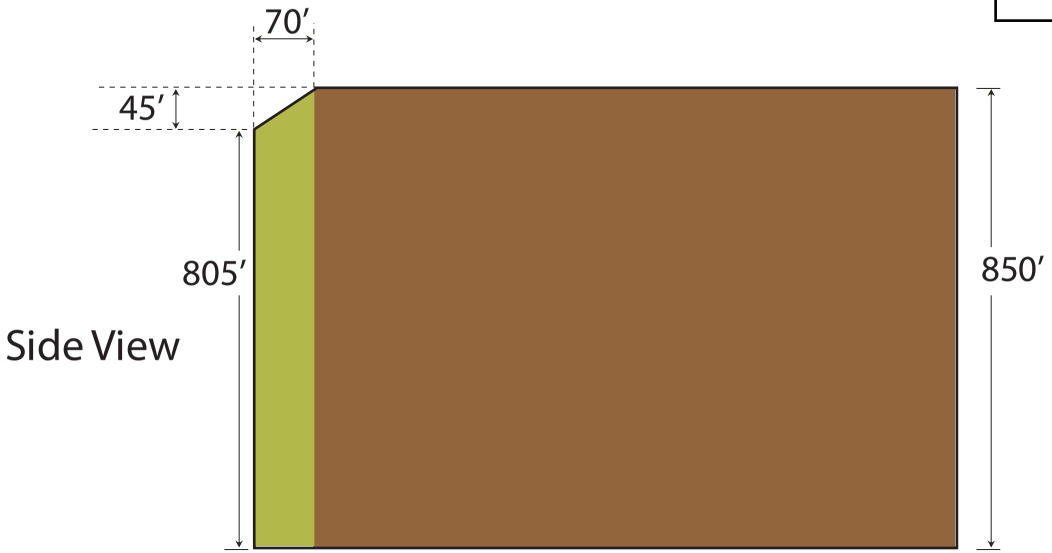
Source: ESRI Streetmap; County of Los Angeles, Google Earth Pro, and Matrix Environmental, 2012.

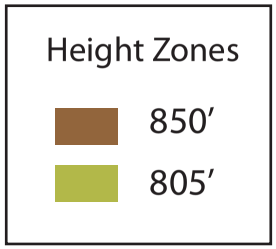
matrix environmental

Figure 18
Off-Site Shadow-Sensitive Uses
Shaded in the Future by Project Height Zones and
Height Exceptions from 9:00 AM to 3:00 PM During Spring Equinox









Source: Matrix Environmental, 2012.

matrix environmental

Figure 19
Maximum Allowable Heights to Reduce Alternative 10
Significant Impact to Less than Significant

Appendix FEIR-19

Alternative 10: No Residential Alternative
Light and Glare: Artificial Light

Francis Krahe & Associates Inc.
Architectural Lighting Design

304 South Broadway
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Los Angeles, CA 90013

t - 213 . 617 . 0477
f - 213 . 617 . 0482
www.fkaild.com

August 15, 2012

Bruce Lackow
Matrix Environmental
6701 Center Drive West, Suite 900
Los Angeles, CA 90045

Email: b.lackow@matrixeir.com

Re: NBC Universal Evolution Plan
Alternative 10 - Lighting

Dear Mr. Lackow:

Francis Krahe & Associates Inc. ("FKA") has reviewed the Alternative 10 – the No Residential Alternative ("Alternative 10") project description and Conceptual Site Plan. This letter summarizes FKA's evaluation of potential lighting impacts from Alternative 10 and compares the potential impacts of Alternative 10 to those of the proposed Project as analyzed in the NBCU Evolution Plan Draft EIR ("DEIR").

A. Methods

This memorandum incorporates by reference the information regarding methodology, regulations, and thresholds contained in the *Environmental Impact Lighting Analysis* prepared by FKA (March 2010), which is included as Appendix G-1 to the DEIR. This memorandum also incorporates by reference the summary of such information and conclusions contained in Section IV.E.2, *Light and Glare – Artificial Light*, of the DEIR.

In order to complete the analysis of Alternative 10, FKA reviewed the proposed Alternative 10 building types and building heights within the Project Site relative to the proposed Project that was analyzed in the *Environmental Impact Lighting Analysis* (March 2010). The analysis and conclusions regarding FKA's review are described below.

B. Business, Studio, and Entertainment Areas

In the Business, Studio, and Entertainment Areas, Alternative 10 proposes some additional square footage and development as compared to the proposed Project. However, given the similarity in the types and intensity of uses between Alternative 10 and the proposed Project, as well as the implementation of design features as required by the proposed City and County Specific Plans, lighting associated with Alternative 10's development would not alter the impacts related to the Business, Studio, and Entertainment Areas discussed in the DEIR for the proposed Project. As such, potential lighting impacts for Alternative 10 would be the same as the less than significant impacts of the proposed Project.

C. Back Lot Area

In the proposed Project Mixed-Use Residential Area (within the existing Back Lot Area) Alternative 10 would eliminate the proposed residential, community-serving and neighborhood retail uses, and include additional studio office, studio and parking uses. Although Alternative 10 would include some development in the Back Lot Area, such development would be more limited in scale and located further from the adjacent residential properties. In addition, Alternative 10 would generally reduce the heights of potential uses within the Back Lot Area. With the change in the proposed uses, and the reduction in scale and height, the exterior lighting components for proposed uses also generally would be reduced under Alternative 10 as compared to the proposed Project. For example, exterior balcony and roof top recreational lighting would not be included. Lastly, as with the proposed Project, implementation of the design features required by the proposed City and County Specific Plans would reduce lighting impacts. Together, these factors would reduce the lighting impacts associated with Alternative 10's proposed uses in the Back Lot Area as compared to the proposed Project, and Alternative 10's lighting impacts would be less than the less than significant impacts of the proposed Project.

To support this less than significant impacts conclusion in more detail, FKA specifically compared the Alternative 10 building types identified on the Alternative 10 Conceptual Site Plan to the buildings modeled in the *Environmental Impact Lighting Analysis* for the proposed Project.

The Conceptual Site Plan for Alternative 10 includes additional studio facilities and parking structures within the Back Lot Area in proximity to the existing off-site residential uses in lieu of the proposed Project's residential, community-serving and retail uses. As shown on the Conceptual Site Plan for Alternative 10, the proposed location of the studio facilities is more distant from the observer positions utilized in the computer model at Building Site #1 (see *Environmental Impact Lighting Analysis,* Section Four – Analysis of Project Lighting Impacts). Further, the exterior lighting components for Alternative 10's proposed studio facilities would be more limited than the lighting components for proposed for the Project's uses in the Mixed-Use Residential Area as discussed above. The studio facilities under Alternative 10 also would not include exterior balcony or roof top lighting, and the building type would be more opaque than the proposed Project's residential building modeled in the proposed Project's lighting analysis. The maximum building height in this area (820 ft. MSL zone) also would be

reduced from the maximum heights proposed under the Project in this area (855 ft. MSL zone with 900 ft. height exception). This factor would reduce the maximum illuminance from studio facilities under Alternative 10, as the visibility from the observer positions would be reduced as a result of the lower maximum building height. Therefore, overall, the proposed studio facilities under the Alternative 10 Conceptual Plan would have less lighting impact than the proposed Project's residential, community-serving and retail facilities in the Mixed-Use Residential Area.

The Conceptual Site Plan for Alternative 10 also includes an additional parking garage in the southern portion of the Back Lot Area. The proposed location of the parking garage is similar to the distance from the observer positions utilized in the computer model at Building Site #1 (see *Environmental Impact Lighting Analysis,* Section Four – Analysis of Project Lighting Impacts). The exterior lighting characteristics of the proposed parking structure would be similar to the lighting components included in the analysis of the Project's Mixed-Use Residential Area buildings. However, the parking structures would not include exterior balcony lighting (although the open segments of the garage may present a similar pattern of brightness). The parking structure would likely include roof top lighting for the top deck. The ratio of open area would be no greater than the transparency modeled for the proposed Project's residential building. However, since the maximum building height would be reduced in this Back Lot Area (820 ft. MSL Zone), the maximum illuminance at the parking structure would be less than or equal to the maximum illuminance values for the proposed Project's residential buildings in the DEIR analysis. The visibility from the observer positions would be reduced as a result of the reduced maximum building height, and as a result the proposed parking structure would have less lighting impact than the proposed Project's buildings in the Mixed-Use Residential Area.

D. Signage

Overall, the signage program for the Business, Studio, and Entertainment Areas under Alternative 10 would not materially change. In addition, signage originally proposed for the Mixed-Use Residential Area under the proposed Project would not be included, and thus there would be less signage in the Back Lot Area under Alternative 10. Lastly, all signage under Alternative 10 would be subject to design features as required by the proposed City and County Specific Plans, which would ensure impacts remain less than significant. As a result, signage proposed under Alternative 10 would have similar or less lighting impacts than the proposed Project's less than significant impacts.

Sincerely,

FRANCIS KRAHE & ASSOCIATES, INC.

Francis Krahe

Appendix FEIR-20

Alternative 10: No Residential Alternative
Geotechnical

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

ALASKA
CALIFORNIA
COLORADO
FLORIDA
MISSOURI
OREGON
WASHINGTON

August 21, 2012

Mr. E. Mark Lyum
NBC Universal, Inc.
100 Universal City Plaza
Universal City, California 91608

RE: GEOTECHNICAL INPUT TO DEIR ALTERNATIVE, NBC UNIVERSAL EVOLUTION PLAN, UNIVERSAL CITY, CITY OF LOS ANGELES AND LOS ANGELES COUNTY, CALIFORNIA FOR UNIVERSAL STUDIOS LLLP, L.P

Dear Mr. Lyum:

This letter presents the geotechnical input for a recently proposed alternative to the subject NBC Universal Evolution Plan. The Draft Environmental Impact Report (DEIR) is dated November 2010; our geotechnical investigation is dated March 2010[i].

The NBC Universal Evolution Plan includes a Mixed-Use Residential area within approximately 124 acres of the eastern portion of the 391 acre Universal property. It is our understanding that an alternative design is being developed to eliminate the residential component from the Evolution Plan. If eliminated, the planned annexation of approximately 76 acres from County jurisdiction into the City of Los Angeles would not proceed as originally planned.

The geotechnical hazards within the Mixed-Use Residential Area are described in our report and were presented on Figure 7, Geotechnical Hazards Map of that report.

The alternative to eliminate the residential component of the Evolution Plan does not affect the findings and conclusions of our original geotechnical investigation for the DEIR. Prior to proceeding with construction of any component of the Evolution Plan, a design-level geotechnical investigation would need to be performed for that component. The investigation would address the geotechnical conditions of the site, including any geologic hazards and recommendations to mitigate those hazards.

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GLENDALE, CALIFORNIA 91204
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TDD 1-800-833-6388
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SHANNON & WILSON, INC.

We appreciate the opportunity to be of continued service to you and would be pleased to answer any questions.

Sincerely,

SHANNON & WILSON, INC.

PROFESSIONAL GEOLOGIST No. 5789
DEAN G. FRANCUCH
No. 1842
CERTIFIED ENGINEERING GEOLOGIST
Exp: 3/31/14
STATE OF CALIFORNIA

Dean G. Francuch
Engineering Geologist
Associate

REGISTERED PROFESSIONAL ENGINEER
JAMES L. VAN BEVEREN
No. GE852
Exp. 06/30/13
GEOTECHNICAL
STATE OF CALIFORNIA

James L. Van Beveren
Geotechnical Engineer
Senior Vice President

JVB:DGF/jvb

---

[i] Shannon & Wilson, 2010, Geotechnical Investigation NBC Universal Evolution Plan, Universal City, City of Los Angeles and Los Angeles County, California; prepared for Universal Studios LLLP, L.P., March 2010, Project 06-030.1.

Appendix FEIR-21

Alternative 10: No Residential Alternative
Water Resources: Surface Water - Drainage

MEMORANDUM

To: **Bruce Lackow** **Job Number: 237-004**

Of: **Matrix Environmental** **Date: August 25, 2012**

From: **Incledon Consulting Group**

RE: **NBC Universal Evolution Plan Alternative 10 – Hydrology Analysis**

The No Residential Alternative ("Alternative 10") was introduced as an alternative for inclusion in the Environmental Impact Report (EIR) for the NBC Universal Evolution Plan. Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio office and entertainment uses of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood retail and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

The following is a tabular comparison of the proposed net new square footage by land use under Alternative 10 and the proposed Project:

Land Use	Net New Project Development	Net New Alternative 10 Development
Studio (sq. ft.)	307,949	307,949
Studio Office (sq. ft.)	437,326	647,320 [a]
Office (sq. ft.)	495,406	495,406
Entertainment (sq. ft.)	145,655	337,895
Entertainment Retail (sq. ft.)	39,216	39,216
Amphitheater (sq. ft.)	(50,600)	(50,600)
Hotel	450,000 [b]	900,000 [c]
Neighborhood Retail and Community - Serving Commercial (sq. ft.)	180,000	0
Residential	2,937 units	0 units
Total		
Commercial (sq. ft.)	**2,004,952**	**2,677,186**
Residential	**2,937 units**	**0 units**

[a] *Studio Office uses under Alternative 10 include a 5,000 square foot expansion of an existing child care center.*

[b] *Includes up to 500 hotel guest rooms and related hotel facilities.*

[c] *Includes up to 1,000 hotel guest rooms and related hotel facilities.*

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (within the existing Back Lot Area) of the Project Site.

The following memorandum provides a summary of the potential hydrology impacts related to Alternative 10 and compares those impacts to the potential hydrology impacts of the proposed Project.

Methodology

This hydrology study evaluates the change in runoff patterns and quantity for the Project Site associated with Alternative 10 and the impact of these changes on the existing downstream storm drains and facilities. The Project Site primarily drains directly to the Los Angeles Flood Control Channel/Los Angeles River (LAFCC) through the on-site storm drain system.

Consistent with the hydrology analysis for the proposed Project, the Alternative 10 hydrology analysis uses the 50-year frequency, 24-hour storm duration peak flows for design storm calculations. Peak flow is more relevant than total runoff volume accumulated over the duration of the storm for determining the impact on drainage systems.

Also consistent with the Project analysis, the County Hydrology Manual and the Storm Water Management Model system for a Windows-based interface (XP-SWMM) was used to calculate and model storm water runoff. XP Software's XPSWMM 2006 v10.6 was used to calculate the storm water runoff volumes and peak flow rates for each catchment using the times of concentration as calculated by

the County's program. The catchment area, time of concentration, soil type, impervious percentage, and rainfall depth were the inputs used by the XPSWMM 2006 v10.6 computer program. These inputs were determined from physical features of the Project Site and information provided on County hydrologic maps. The resulting output was a hydrograph and peak flow rate for each catchment area. The volume of storm water runoff was calculated from the area under the hydrograph curve. Please refer to our Project Hydrology Technical Report included as Appendix I-1-1 to the Draft EIR for further discussion of the methodology.

Hydrology Results

Tables 1 and 2 below provide the detailed hydrology results for individual catchments for the existing and Alternative 10 conditions (the Existing Condition numbers in Table 1 are the same as calculated for the proposed Project analysis). In addition, an overall comparison of the existing and Alternative 10 hydrology conditions is included in Table 3. This table shows the difference in flow rate and volume and the percentage change between the existing and Alternative 10 conditions. Figures 1 and 2 at the end of this memorandum show the existing and Alternative 10 catchments and peak flow rates, respectively.

Table 1: Existing 50-Year Flow Rates and Volumes by Catchment Area

Catchment	Peak Flow Rate Q50 (cfs)	Volume (acre-ft)
A	24.2	4.5
B	8.8	1.3
C	3.4	0.5
D[1]	169.2	30.0
E	20.1	3.4
F	39.1	6.6
G	9.3	0.9
H	9.1	1.1
I	18.4	2.7
J	114.9	17.7
L[2]	138.8	24.1
M[3]	228.2	37.9
O	30.4	6.6
P	15.8	2.1
Q	27.2	2.7
R	15.4	2.1
S	14.8	2.2
T	14.1	1.1
U[4]	32.6	1.7
V	49.8	4.1
TOTAL	***983.6***	***153.3***

1. Includes 17.1 acres of off-site area
2. Includes 5.9 acres of off-site area
3. Includes 4.2 acres of off-site area
4. Includes 1.4 acres of off-site area

Table 2: Alternative 10 50-Year Flow Rates and Volumes by Catchment Area		
Catchment	**Peak Flow Rate Q50 (cfs)**	**Volume (acre-ft)**
A	24.2	4.5
B	8.8	1.3
C	3.4	0.5
D[1]	170.2	28.2
E	20.1	3.4
F	39.4	6.6
G	9.3	0.9
H	9.1	1.0
I	20.4	3.2
J	102.9	16.1
L[2]	137.4	22.1
M[3]	226.9	37.1
O	31.5	3.9
P	19.9	2.6
Q	30.9	2.0
R	17.6	2.2
S	14.8	1.7
T	14.1	1.2
U[4]	32.6	1.7
V	48.7	3.0
TOTAL	***982.2***	***143.2***

1. Includes 17.1 acres of off-site area
2. Includes 5.9 acres of off-site area
3. Includes 4.2 acres of off-site area
4. Includes 1.4 acres of off-site area

Table 3: Existing and Alternative 10 50-year Flow Rates and Volumes		
Condition	**Peak Flow Rate Q50 (cfs)**	**Volume (acre-ft)**
Existing	983.6	153.3
Alternative 10	982.2	143.2
Difference	-1.4	-10.1
% Change	-0.1%	-6.6%

1. Total area includes off-site areas as identified in Tables 1 and 2.

Based on the hydrology analysis, Alternative 10 is not anticipated to result in any potentially significant hydrologic impacts. Alternative 10 would result in an overall decrease in peak flow rate and a decrease in runoff volume. There is a decrease in flow rate of 1.4 cubic feet per second (cfs), or less than 1%, as compared to existing conditions, and a decrease of 10.1 acre-feet (ac-ft), or 6.6% in runoff volume, when compared to existing conditions.

While all storm water ultimately flows to the LAFCC, there are three general directions in which surface water flow leaves the Project Site: northerly towards the LAFCC, southerly towards the SR-101 Freeway and easterly towards Barham Boulevard. Division of the Project Site into these three areas determined by general direction provides a more detailed hydrology assessment for management of surface water flows. Table 4 below provides hydrologic comparisons of peak flow rates and runoff volumes by general

drainage direction. The changes in tributary area for each direction can be attributed to alterations in drainage patterns and building layout as proposed by Alternative 10.

Table 4: Hydrologic Summaries by Drainage Direction[1]			
	Northerly[2]	**Southerly[3]**	**Easterly[4]**
Peak Flow Rate (Q_{50})			
Existing Condition (cfs)	762.4	171.4	49.8
Alternative 10 Condition (cfs)	763.5	170.0	48.7
Difference	1.1	-1.4	-1.1
%Difference	0.1%	-0.8%	-2.2%
Runoff Volume			
Existing Condition (Acre-ft)	123.4	25.8	4.1
Alternative 10 Condition (Acre-ft)	116.4	23.8	3.0
Difference	-7.0	-2.0	-1.1
%Difference	-5.7%	-7.8%	-26.8%

1. Numbers presented include off-site areas as identified in Tables 1 and 2
2. Catchments draining Northerly toward LACFCD Channel include A, B, C, D, E, F, G, H, I, J, M, O, P, Q, R, S, & T
3. Catchments draining Southerly toward SR-101 Freeway include L & U
4. Catchments draining Easterly toward Barham Boulevard include V only

Draining Northerly

Based on the hydrology analysis by drainage direction, Alternative 10 would result in more tributary area draining northerly towards the LAFCC. In general, the area draining to the channel would produce more peak flow (increase of 1.1 cfs, or less than 1%) and less runoff volume (decrease of 7.0 ac-ft, or 5.7%) than the current existing conditions.

Draining Southerly

Based on the hydrology analysis, Alternative 10 would result in less tributary area draining southerly towards the SR-101 Freeway. In general, the area draining to the freeway would produce less peak flow (decrease of 1.4 cfs, or less than 1.0%), and less runoff volume (decrease of 2.0 ac-ft, or 7.8%) than the current existing conditions.

Draining Easterly

Based on the hydrology analysis, Alternative 10 would result in less tributary area draining easterly towards Barham Boulevard. In general, the area draining to Barham Boulevard would produce less peak flow (decrease of 1.1 cfs, or 2.2%), and less runoff volume (decrease of 1.1 ac-ft, or 26.8%) than the current existing conditions.

The proposed Project condition hydrology analysis results indicate that the overall peak flow rate before installation of a detention system would be 1011.6 cfs and the overall runoff volume would be 156.5 ac-ft. When compared to the proposed Project hydrology analysis, Alternative 10 hydrology conditions would result in an overall 29.4 cfs decrease in peak flow rate and a 13.3 ac-ft decrease in runoff volume. Under the proposed Project hydrology conditions, the northerly peak flow rate would be 841.5 cfs and the runoff volume would be 130.6 ac-ft. Alternative 10 hydrology conditions would result in a 78.0 cfs decrease in peak flow rate and a 14.2 ac-ft decrease in runoff volume in the northerly flow direction. Under the

proposed Project hydrology conditions, the southerly peak flow rate would be 148.2 cfs and the runoff volume would be 24.4 ac-ft. Alternative 10 hydrology conditions would result in a 21.8 cfs increase in peak flow rate, and a 0.6 ac-ft decrease in runoff volume in the southerly flow direction. Under the proposed Project hydrology conditions, the easterly peak flow rate would be 21.9 cfs and the runoff volume would be 1.5 ac-ft. Alternative 10 hydrology conditions would result in a 26.8 cfs increase in peak flow rate and a 1.5 ac-ft increase in runoff volume in the easterly flow direction when compared to the proposed Project hydrology conditions.

Alternative 10 Impacts

Alternative 10 development requires changes and/or modifications to the on-site drainage system. New storm drains would be designed and sized using the County Hydrology Manual method for at least a 50-year frequency storm event capacity. With the construction of new storm drain lines, all 50-year frequency storm water flows would be collected and conveyed ultimately to the LAFCC and the chance of on-site flooding would be minimized.

Alternative 10 development does not increase overall peak flow rate with respect to the existing Project Site conditions. Peak flow rate measures the highest rate at which storm water is leaving the Project Site during a storm event. No additional detention features are proposed as a part of Alternative 10 since the overall peak flow rate resulting from Alternative 10 is less than the overall peak flow rate leaving the existing Project Site. Since there is a slight decrease in peak flow rate with Alternative 10, the Project will not result in a permanent adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.

Prior to obtaining building permits, hydrology and hydraulic reports would be prepared and submitted to the City and County, as applicable, for approval of the drainage facilities for the proposed building. Storm drainage improvements will be completed with each project-specific report. Exact storm drain pipe sizes and configurations would be determined based on the final design for Alternative 10. If annexation/detachment does not occur as proposed, there would be no effect on the hydrology impacts. All storm drain lines on the Project Site ultimately drain to the LAFCC/Los Angeles River and all proposed storm drain lines would also drain to the LAFCC/Los Angeles River. The analysis of impacts would be the same as described above whether annexation/detachment occurs or not as the methodology is the same and both jurisdictions would use the County Hydrology Manual and method.

The majority of the additional storm drain facilities for Alternative 10 will be constructed within the Project Site. No off-site storm drains located in Lankershim Boulevard or Barham Boulevard would be changed or replaced as a part of Alternative 10. There would be off-site improvements related to the construction of new and relocated outfalls to the LAFCC. These off-site improvements would occur along River Road, the access road to the LAFCC, as storm drains from the Project Site are connected to their respective outfalls. During construction, a Storm Water Pollution Prevention Plan and Erosion Control Plan would be implemented to provide temporary storm water management. The construction of new drainage facilities would be required in a manner and sequence that would preclude flooding.

Since there is no overall increase in peak flow rate, Alternative 10 is not anticipated to have a cumulative effect on surrounding areas. The majority of area surrounding the Project Site is fully developed and consists of highly urbanized developments. In addition, Alternative 10 development has less impact on hydrologic factors affecting runoff flow rates and volumes than the proposed Project development. As a result, substantial additional changes in hydrologic factors affecting runoff flow rates and volumes are not expected.

Impact Assessment

With the implementation of the above modifications to the storm drain system, Alternative 10 is not anticipated to result in any potentially significant hydrologic impacts, and would further reduce the less than significant impacts of the proposed Project.

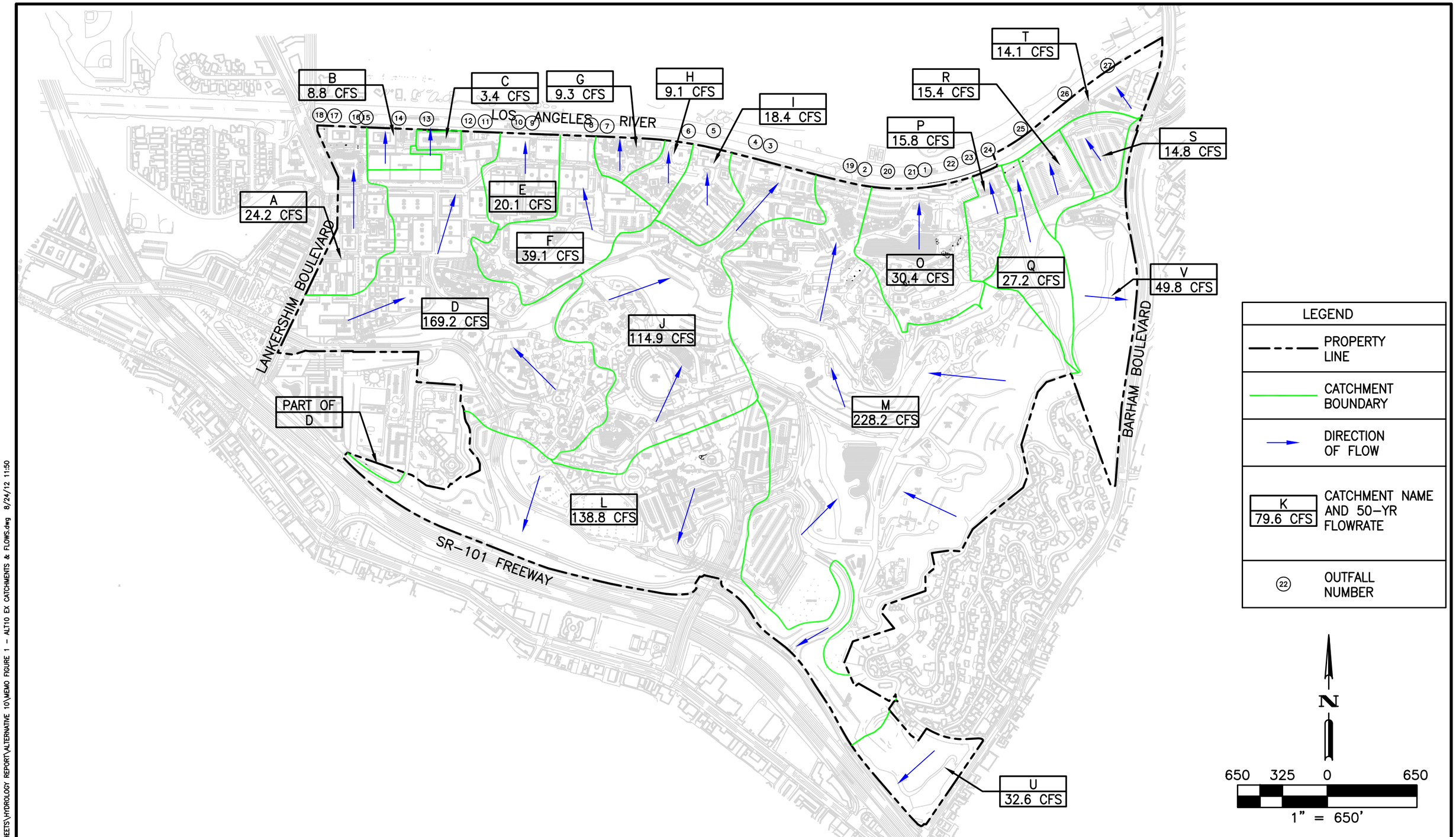

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FIGURE 1 - EXISTING CATCHMENTS AND 50-YEAR FLOWS
AUGUST 2012

I:\237.004\CAD\SHEETS\HYDROLOGY REPORT\ALTERNATIVE 10\MEMO FIGURE 1 - ALT10 EX CATCHMENTS & FLOWS.dwg 8/24/12 11:50

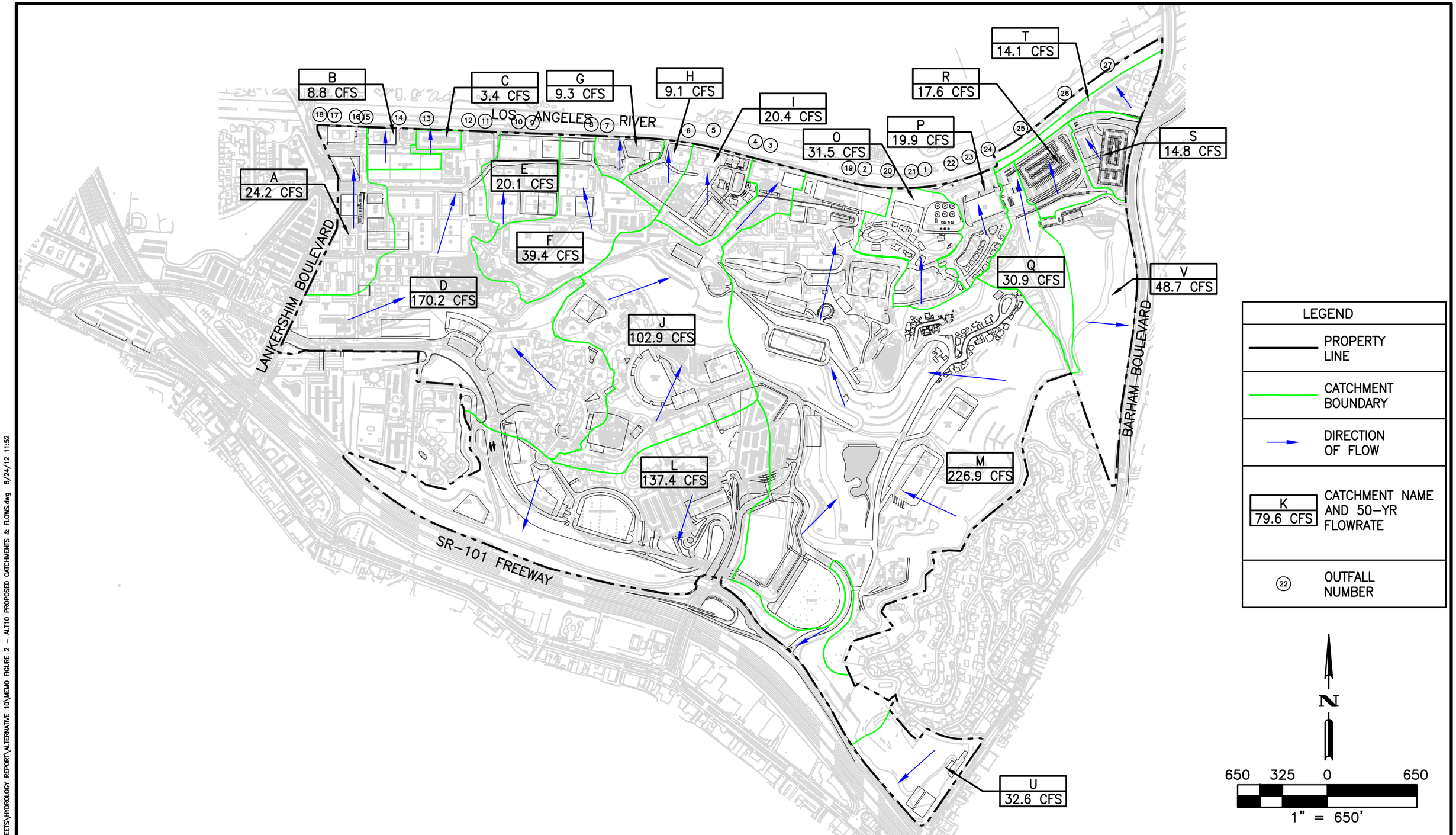

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FIGURE 2 - ALTERNATIVE 10 CATCHMENTS AND 50-YEAR FLOWS

AUGUST 2012

I:\237.004\CAD\SHEETS\HYDROLOGY REPORT\ALTERNATIVE 10\MEMO FIGURE 2 - ALT10 PROPOSED CATCHMENTS & FLOWS.dwg 8/24/12 11:52

Appendix FEIR-22

Alternative 10: No Residential Alternative
Water Resources: Surface Water – Surface Water Quality

Technical Memorandum

To: *Universal City Studios LLC*

From: *CDM Smith*

Date: *August 21, 2012*

Subject: *NBC Universal Evolution Plan - Surface Water Quality Analysis Update for Alternative 10 – No Residential Alternative*

This technical memorandum summarizes analysis of the pollutant loading model developed for Alternative 10: No Residential Alternative ("Alternative 10") for comparison to the surface water quality analysis for the proposed NBC Universal Evolution Plan project (Project) at Universal Studies (Project Site). For Alternative 10, pollutant loads were computed for scenarios with and without inclusion of BMPs using Low Impact Development practices. The objective of the model update was to compare estimated pollutant loadings between Alternative 10 and the proposed Project, as well as between Alternative 10 and baseline conditions.

This analysis assumes that Alternative 10 would include the same commitment to stormwater quality management during construction, in accordance with the most recent (2009) General Construction Permit, and to operation and maintenance BMPs as described under the proposed Project, to the extent applicable to Alternative 10. This Technical Memorandum focuses on the permanent stormwater quality management features that would be included in Alternative 10.

Description of Alternative 10: No Residential Alternative

Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Figure 1 provides an illustration of the Conceptual Site Plan for Alternative 10.

Model Description

The same pollutant loading model that was previously used to evaluate the Baseline and the proposed Project condition was used to estimate the generation of pollutants and expected constituent concentrations resulting from stormwater runoff from Alternative 10 and to quantify the effectiveness of existing and proposed best management practices (BMPs) on reducing pollutant loads and concentrations. The model was used to estimate the existing and future stormwater runoff quality in order to provide a comparative analysis of the expected impacts from existing and future land use conditions. The proposed conditions analysis accounts for the increase in impervious surfaces and changes in land use relating to the proposed Project and Alternative 10. Increasing the impervious surface will result in increased runoff with possible increases in pollutant loadings discharged to the receiving water, the Los Angeles River. Conversely, BMPs can reduce the expected pollutant loads. The following includes a description of the model, the evaluation methodology behind the model, configuration of the model, inputs, and modeling results.

In general, the pollutant loading model used for analysis of the proposed Project calculates pollutant loads by estimating runoff coefficients to convert rainfall data into runoff volumes, then using the runoff volumes and land use specific pollutant event mean concentrations (EMCs) to estimate pollutant loads. The pollutant loading model is based on four main equations, which determine the runoff coefficient, the annual runoff, the annual pollutant loadings, and the resulting average annual pollutant concentrations. For purposes of this model, the term pollutant (or pollution) refers to any physical or chemical constituent that exists naturally or is anthropogenically deposited within a watershed that can be mobilized by rainfall and transported by runoff, and that has the potential for causing deleterious effects on the receiving water environment. (For more information regarding the pollutant loading model refer to the Surface Water Quality Technical Report for the Project included as Appendix I-2 of the Draft EIR.)

Source: Rios Clementi Hale Studios (July 3, 2012)

N

CDM Smith

NBC Universal Evolution Plan
Alternative 10 Conceptual Plan

Figure 1

Methodology

The same model methodology that was used to evaluate the proposed Project condition was used to evaluate Alternative 10. The model methodology was adapted from an empirical method that has been referred to by others as the Simple Method.[1] The Simple Method is an empirical approach developed for estimating pollutant export from urban development sites. The model was developed to provide a simple yet effective method for predicting runoff volumes, pollutant loads, and resulting pollutant concentrations from proposed Project areas.

The model was developed in spreadsheet format and utilizes available stormwater monitoring and rainfall data, Project Site drainage and land use information, as well as a relationship for the prediction of runoff volumes. The model is capable of estimating changes in runoff volumes, pollutant loads, and resulting pollutant concentrations that may occur as a result of property development or redevelopment. The model does not incorporate individual storm event hydraulics or hydrology of the Project Site, which would be more appropriate for design stages. This type of model allows the incorporation of the pollutant and retention expected from Low Impact Development and other structural BMPs. While the impact of source control BMPs could also potentially be simulated through adjustment of EMCs, the data is generally not available or is inconclusive for source control BMPs and is therefore not included in this analysis. Model calculations are deterministic in that only a single average value is obtained from a set of inputs without an estimation of the potential variation in stormwater loads or concentrations.

This type of loading model is very useful in the planning and evaluation stages of a project. Where estimates of the effluent quality or a percentage of reduction of a pollutant resulting from installation of BMPs are available, the model is used to evaluate the effectiveness of the proposed BMPs on improving water quality.

Hydrology Inputs

As with the Project analysis, a long-term average (66 years) annual rainfall value of 16.51 inches was used to estimate the rainfall experienced in the vicinity of the Project Site. This value was obtained from the Western Regional Climate Center for Station Number 041194 in Burbank, California and represents the closest station with a long-term record.

The pollutant loading model estimates annual average runoff volumes based on the rational method. The rational method is probably the most widely used method for design of storm sewers.[2] It can be used to estimate runoff volumes as well as flow rates. However, for purposes of annual averages, only the simpler estimation of runoff volumes is used in the model. The model uses the rational equation as follows:

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[1] Schueler, T., *Controlling Urban Runoff, A Practical Manual for Planning and Designing Urban BMPs, Metropolitan Washington Council of Governments*. 1987.

[2.] Chow, T.V., D.R. Maidment, and L.W. Mays. *Applied Hydrology*. McGraw-Hill, Inc. New York, NY, 1988.

$$Q_i = (R_i) \times (I) \times (A_i) \times (CF_1) \qquad \text{Eqn. 1}$$

Where: Q_i = *annual runoff volume (ft³) from land use area i*
I = *annual average rainfall depth (inches)*
Ai = *land use area i (acres)*
Ri = *runoff coefficient of land use area i*
$CF1$ = *conversion factor to convert from in-acres to ft3*

Runoff is also expressed in model results in acre-ft/year. The runoff coefficient, Ri, is a unit-less value that is a function of the imperviousness of land use area, i, and is approximated in the model by the following equation.[3]

$$Ri = 0.007 \times (\%\ \text{imperviousness of Ai}) + 0.1 \qquad \text{Eqn. 2}$$

Table 1 includes estimated imperviousness for each of the existing and proposed land uses within the Project Site. Unless otherwise noted, all EMC data is from Los Angeles County Department of Public Works, Summary Water Quality Data - Storm Water Quality Data Tables (1994-2000): (http://ladpw.org/wmd/npdes/9400_wq_tbl/Table_4-12.pdf). For EMC values, outdoor attractions is classified as commercial land use, roads and surface parking is classified as transportation, and open space and commercial are classified by the land uses of the same name.

Table 1. EMCs and Impervious Factors by Existing and Alternative 10 Land Use Categories[1]

Constituent	Event Mean Concentration (mg/L)				
	Outdoor Attractions	Open Space	Roads and Surface Parking	Commercial	Compacted Earth
TSS	66	186	66	66	186
Total P	0.39	0.16	0.39	0.39	0.16
TKN	3.40	0.79	3.40	3.40	0.79
Total Cu	0.04	0.02	0.04	0.04	0.02
Dissolved Cu	0.01	0.0*	0.01	0.01	0.0*
Total Zn	0.24	0.05	0.24	0.24	0.05
Dissolved Zn	0.15	0.0*	0.15	0.15	0.0[2]
Oil and Grease	3.3	0.0*	3.3	3.3	0.0[2]
BOD_5	27	12	27	27	12
Impervious Factor (%)	70	15	91	90	30

[1] Because there is no change in type of land use categories from existing and Alternative 10, the EMCs and impervious factors are the same.
[2] Not enough data above detection limit, considered statistically invalid by Los Angeles County; therefore, 0.00 was adopted.

[3] Federal Highway Administration. *Pollutant Loadings and Impacts from Stormwater Runoff, Volume III: Analytical Investigations and Research Report.* Prepared by Woodward-Clyde Consultants: E.D. Driscoll, P.E. Shelley, and E.W. Strecker. FHWA-RD-88-008. 1990.

Water Quality Inputs

The water quality parameters selected for modeling were based on the typical pollutants found in urban stormwater from the various existing or proposed land uses, the pollutants listed on the 303(d) list for the receiving water body, or for which TMDLs have been completed. The parameters selected for modeling include total suspended solids (TSS), total phosphorus (Total P), total Kjeldahl nitrogen (TKN), total copper (Cu), dissolved Cu, total zinc (Zn), dissolved Zn, oil and grease, and 5-day biochemical oxygen demand (BOD5).

Other parameters on the 303(d) list, coliform bacteria, trash, Diazinon, and cyanide, are not modeled but discussed qualitatively in the Surface Water Quality Technical Report for the proposed NBC Universal Evolution Plan Project. Cadmium (Cd) and Selenium (Se), while covered in the TMDL for the Los Angeles River, were not included in the analysis, as these constituents are not routinely found in urban runoff and were not required to be analyzed under the individual NPDES permit covering the Project Site (rescinded by the LARWQCB in March 2007). Lastly, monitoring conducted to comply with this individual NPDES permit from 2002 to 2006 resulted in zero detections of total lead, suggesting that there is little to no lead in any of the existing soils on the property, and there are no known new sources. Therefore, lead is not carried forward in the pollutant load analysis.

As with the Project analysis, land use-based pollutant loads and concentrations were estimated in the model using pollutant concentrations derived from Los Angeles County's 1994-2000 monitoring data.[4] This data set is the most extensive, locally-derived data for a variety of land use types and has been accepted as a reasonable representation of local runoff quality. This six year period was the time frame during which land-use specific monitoring was conducted by the area-wide stormwater program as required by the area-wide NPDES permit in order to provide a sufficient body of data to characterize local runoff from various predominant land use subwatersheds. In general, the on-site data collected under the individual Permit is similar to the EMC data compiled by LACDPW for similar land uses, generally validating the use of the LACDPW EMC data for pollutant load modeling. Table 2 shows the EMCs used for the land use categories included in the existing and proposed Project Site.

The land use EMC for each pollutant was used in conjunction with the runoff volumes from each land use area to estimate the average annual load to the receiving water body from the Project area. The following equation was utilized in the model:

$$L_{Dj} = \sum_{i=1}^{n_{LU}} L_i = \sum_{i=1}^{n_{LU}} (EMC_i) \times (Q_i) \times (CF_2) \qquad \text{Eqn.3}$$

[4] Los Angeles County Department of Public Works, Summary Water Quality Data - Storm Water Quality Data Tables (1994-2000): http://ladpw.org/wmd/npdes/9400_wq_tbl/Table_4-12.pdf – last accessed September 26, 2006.

Where: L_{Dj} = *total average annual load (lbs) from drainage area j*
L_i = *load (lbs) from land use area i*
EMC_i = *event mean concentration (mg/L) from land use area i*
Q_i = *runoff volume (ft^3) from land use area i*
CF_2 = *conversion factor to convert mg/L to lbs/ft^3*
n_{LU} = *total number of different land use areas in drainage area j*

To estimate the annual average storm event pollutant concentrations to receiving waters, the total annual load calculated above is simply divided by the total runoff volume, or symbolically as:

$$C_{Dj} = \frac{L_{Dj}}{\left(\sum_{i=1}^{n_{LU}} Q_i\right) \times CF_2} \qquad \text{Eqn.4}$$

Where: C_{Dj} = *total annual average concentration (mg/L) from drainage area j*
L_{Dj} = *total average annual load (lbs) from drainage area j*
Q_i = *total annual runoff volume (ft3) from land use area i*
n_{LU} = *total number of different land use areas in drainage area j*
CF_2 = *conversion factor to convert mg/L to lbs/ft3*

The pollutant loading model simultaneously calculates loads and concentrations for each of the constituents of concern.

Pollutant Removal Approximations

As mentioned above, the pollutant loading model incorporates water quality treatment in Low Impact Development and other structural stormwater BMPs. Although it is possible to consider reductions in EMCs as a result of implementation of some source control measures, there is generally not sufficient data available to model most source control BMPs, so they were not included in the modeling effort. However, it should be noted that source control BMPs, examples of which include public education, street sweeping, use of alternative building materials and covered trash receptacles are expected to provide an additional level of pollutant reduction, which is not specifically included in the pollutant loading estimates.

The effects of the BMPs on a few constituents were modeled using a percent removal method where insufficient expected effluent quality data was available. The effects of the BMPs on most constituents were modeled using statistical estimates of effluent quality estimates. The reason for the difference in approach is as follows:

1 BMP monitoring studies for some BMP types only have percent removals reported rather than the effluent quality, and

2 Evaluation of data in the NSW BMP Database has revealed that using percent removals to predict treatment capacity, particularly for certain BMPs, has some serious short-comings, such as predicting "good" treatment when influent quality is poor and predicting "poor" treatment when the influent quality is good

BMPs selected for evaluation for Alternative 10 include CDS units, filtration, bioswales and bioretention with underdrains. BMPs relying on infiltration were not included in the analysis due to the poor and shallow (small depth to bedrock) soil conditions that underlie most of the Back Lot Area.

Percent Removal Method

Resultant pollutant loadings to the receiving waters after flow through these water quality features are calculated as follows:

$$L_{RW} = \sum_{j=1}^{n_{RW}} L_{Dj} \; x \, (1 - \frac{R}{100}) \qquad \text{Eqn. 5}$$

Where: LRW = *pollutant load (lbs/yr) to the receiving waters*
L_{Dj} = *total average annual load (lbs) from drainage area j*
n_{RW} = *number of different drainage areas tributary to receiving waters*
R = *removal rate (percent)*

Effluent Quality Method

Effluent quality is used to model the treatment expected to occur for most pollutants from the BMPs within the Project Site. Only data that have been reviewed, validated, and statistically summarized were used, which resulted in a much smaller set of studies than currently appears in the Performance International Stormwater BMP Database.[5] Average annual effluent loads were calculated by multiplying the assigned effluent concentrations by the predicted annual runoff volume. The mass removed by the system is equal to the difference between the influent and effluent loads. This assumes the BMPs will not be sources of pollution during average size storm events, which should be the case if properly maintained.

The resultant effluent quality or pollutant removal values used for the analysis are summarized in Table 2.

[5] Internal Stormwater BMP Database WERF/FHWA/ASCE/EPA NSW. *BMP Performance Data Summary Table*, Prepared by Wright Water Engineers, Inc and Geosyntec Consultants, Inc. 2008.

Table 2. Summary of Percent Removals and Effluent Quality for BMPs

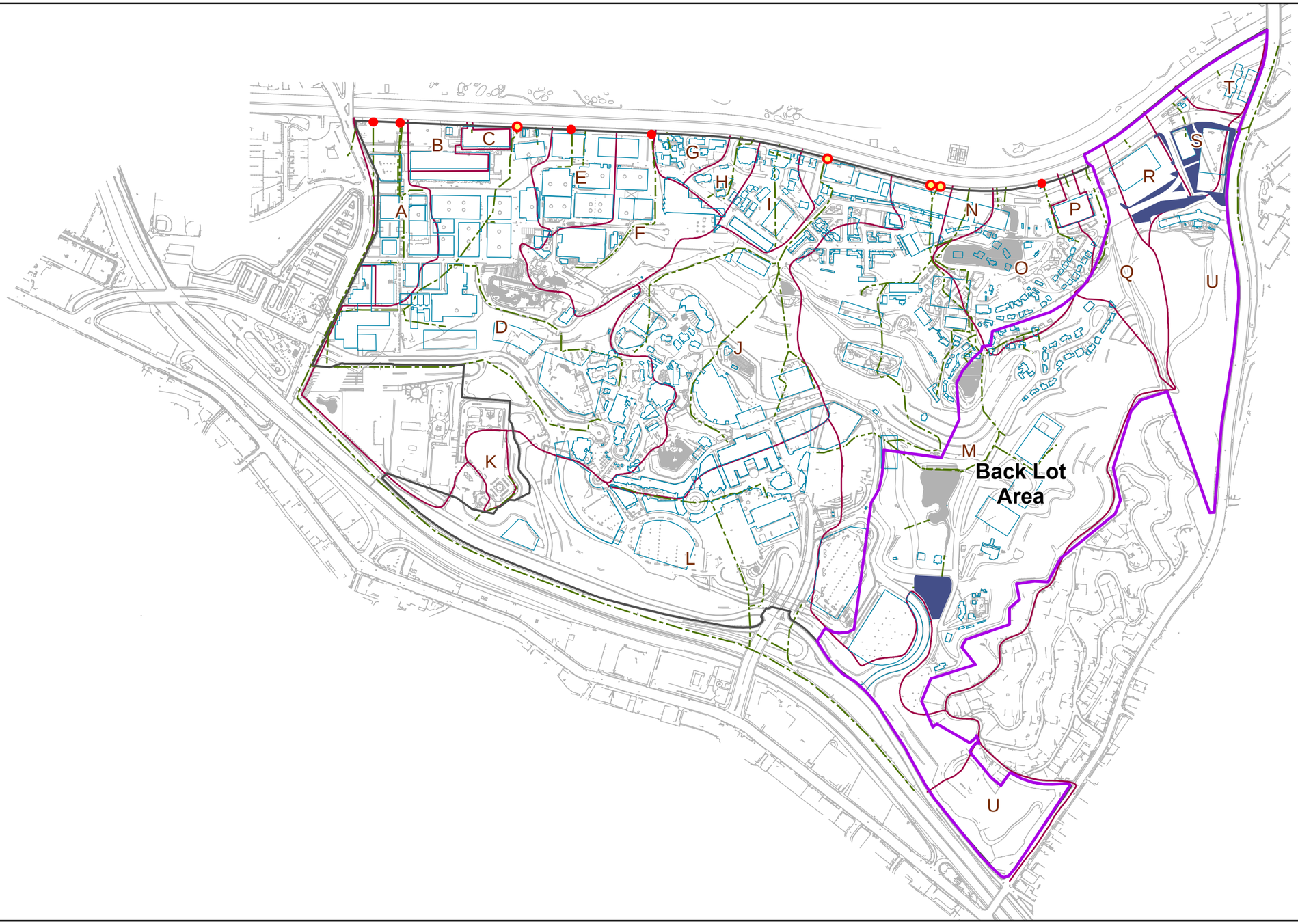
Constituent	CDS Units	Bioswales	Media Filters	Bioretention w/ Underdrains
Effluent Quality (mg/L)				
TSS	40.3	24.6	25.5	10
Total P	0.19	0.32	0.14	0.13
TKN	3	1.6	1.79	1.1
Total Cu	0.015	0.00865	0.00965	0.009
Dissolved Cu	0.0096	0.0062	0.007	0.0062[1]
Total Zn	0.1	0.03	0.05	0.02
Dissolved Zn	0.045	0.032	0.057	0.032[1]
Percent Reduction				
Oil and Grease	80	80	80	80
BOD_5	30	40	75	40

Source: Performance International Stormwater Best Management Practices (BMP) Database [2008]
[1] Not available from 2008 summary; taken from Analysis of Treatment System

Land Use

The Project Site, for analytical purposes, is subdivided into 20 drainage areas as shown in Figure 2. Generally, drainage areas were delineated to represent different storm drain outfalls from the Project Site to the Los Angeles River. Land uses were delineated based on baseline land use conditions. Tables 3 and 4 summarize the existing and proposed (Alternative 10) land use categories and acreages used in the pollutant loading model for the Project.[6] Land use acreage for the proposed Project is included in the Surface Water Quality Technical Report for the proposed Project

[6] Although there is technically an Area K within the boundaries of Universal City, it was not included in the analysis because it lies wholly outside of the Project Site boundary (i.e., the existing hotel complex located near the southwestern edge of Universal City, which is not part of the Project Site and not included as part of the proposed Project).



Legend

- Backlot Boundary
- Bioretention Facility
- Property Boundary Line
- Commercial / Office Buildings
- Storm Drain (18" or larger)
- Subwatershed
- Existing CDS Units
- Existing CDS Unit with Proposed Media Filter

N

350 0 700
Feet

CDM Smith

Universal City Studios
Alternative 10 LID BMPs

Figure 2

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Table 3. Acreage of Land Use by Drainage Area for Existing Conditions

Drainage Area	Outdoor Attractions	Open Space	Roads and Surface Parking	Commercial	Compacted Earth	Total
A	0.00	0.85	5.43	4.01	0.00	10.29
B	0.00	0.10	0.77	2.02	0.00	2.89
C	0.00	0.01	1.05	0.00	0.00	1.06
D[1]	3.57	9.89	24.65	16.23	0.00	54.34
E	0.00	0.09	2.77	4.49	0.00	7.35
F	1.55	2.85	7.65	4.20	0.00	16.25
G	0.00	0.78	1.18	0.75	0.00	2.71
H	0.00	0.76	1.45	0.76	0.00	2.97
I	0.00	0.60	3.61	2.17	0.00	6.38
J	2.61	8.15	25.58	7.87	0.00	44.21
L	0.50	18.04	34.58	4.12	2.00	59.24
M	1.65	42.88	51.74	7.38	6.94	110.59
O	0.47	3.54	10.98	1.38	0.00	16.37
P	0.00	0.12	3.03	1.45	0.00	4.60
Q	0.00	4.75	3.30	0.17	0.93	9.15
R	0.00	0.76	4.21	0.00	0.01	4.98
S	0.00	0.06	4.66	0.00	0.00	4.72
T	0.00	1.91	1.61	0.62	0.00	4.14
U	0.00	7.50	0.61	0.00	0.46	8.57
V	0.00	12.64	4.17	0.35	0.97	18.13
TOTAL	10.35	116.28	193.03	57.97	11.31	388.94

Source: Incledon Consulting Group, 2009
Note: This table corresponds to Table A-1 in the Surface Water Quality Technical Report for the proposed Project, Attachment A)
[1]Drainage Area D was modeled to include a 0.64-acre non-contiguous parcel west of Drainage Area L (refer to the Surface Water Quality Technical Report for the proposed Project, Figure 2-1).

Table 4. Acreage of Land Use by Drainage Area for Alternative 10 Scenario

Drainage Area	Outdoor Attractions	Open Space	Roads and Surface Parking	Commercial	Compacted Earth	Total
A	0.00	0.68	4.52	5.09	0.00	10.29
B	0.00	0.05	0.88	1.96	0.00	2.89
C	0.00	0.00	1.06	0.00	0.00	1.06
D	3.85	8.73	23.57	17.89	0.00	54.04
E	0.00	0.09	2.94	4.31	0.00	7.35
F	1.55	2.90	7.16	4.66	0.00	16.28
G	0.00	0.78	1.18	0.75	0.00	2.71
H	0.00	0.80	1.42	0.76	0.00	2.97
I	0.00	0.81	4.38	2.26	0.00	7.45
J	2.26	8.36	20.33	10.01	0.00	40.97
L	0.50	19.66	25.16	11.65	2.00	58.97
M	1.17	53.84	35.52	21.74	5.10	117.37
O	0.45	2.55	5.47	1.67	0.00	10.14
P	0.00	0.64	4.28	1.17	0.00	6.09
Q	0.00	7.02	1.49	0.00	0.97	9.48
R	0.00	1.17	3.19	1.24	0.00	5.60
S	0.00	1.50	1.63	1.70	0.00	4.82
T	0.00	1.85	1.70	0.62	0.00	4.17
U	0.00	8.11	0.00	0.00	0.45	8.56
V	0.00	15.14	1.12	0.49	0.97	17.73
TOTAL	9.78	134.68	147.00	87.98	9.49	388.94

Source: Incledon Consulting Group, 2012
[1]Drainage Area D was modeled to include a 0.64-acre non-contiguous parcel west of Drainage Area L (refer to the Surface Water Quality Technical Report for the proposed Project, Figure 2-1).

Outdoor Attractions

A majority of the theme park attractions are indoors or completely covered and therefore generally similar to other commercial type land uses. However, there are a few theme park attractions, referred to in the model as "outdoor attractions" that are not entirely contained indoors or completely covered. The "outdoor attractions" included in this category are as follows:

Rides:

3 Jurassic Park

Tram Tour:

4 Earthquake, Carnage (Fast and Furious), War of the Worlds, Collapsing Bridge, Flash Flood, Ice Tunnel

Entertainment:

5 Kid Zone, Coke Soak, Waterworld

CityWalk:

6 City Walk Fountain

Roads and Surface Parking

Automobiles, trucks, and other vehicles can contribute significantly to pollutants in runoff from streets, highways, and parking areas, and monitoring data from high traffic (measured as Average Daily Traffic [ADT]) highways and other transportation land uses suggests that pollutant concentrations in these locations may be higher than other urban uses; however, for the purposes of the pollutant loading model, the streets in the project area would not be considered to be high ADT transportation (major roadways) land use. Generally, runoff from the local subwatersheds from which land-use specific EMC data has been compiled (in particular that from the Los Angeles County Stormwater program) includes runoff from the paved areas (local streets, parking, driveways) that make up a fraction of the overall land use of the monitored subwatersheds). Therefore, local streets with lower trip volumes and surface parking are typically combined for modeling purposes with the adjacent land uses. For example, a local street next to a commercial lot is counted in the commercial acreage. The volume and nature of activity on the existing streets and parking areas within the Project Site was reviewed and considered similar to other typical commercial areas monitored by LACDPW.

Commercial

There are no land uses on-site similar to those categorized as industrial in the monitoring data base. Since a majority of the land uses associated with the Project Site are more commercial in nature (including theme park attractions that are entirely indoor or completely covered) the commercial land use data is used for the modeling. Buildings classified as Technicolor Commercial land use under the proposed Project analysis have been consolidated into the Commercial land use category.

Open Space

The open space land use includes natural and landscaped areas with non-compacted soils. The baseline condition pollutant loading model assumes an estimated impervious factor of 15 percent.

Compacted Earth

The compacted earth land use includes open space areas with compacted soils. The baseline condition pollutant loading model assumes an estimated impervious factor of 30 percent.

Land Use for Alternative 10 Scenarios

Alternative 10 involves a very different use of the proposed Project's proposed Mixed-Use Residential Area (within the existing Back Lot Area). Whereas the proposed Project would include new multi-family residential development, Alternative 10 eliminates the residential, community-serving and neighborhood retail uses of the Project and increases the studio production and entertainment elements of the Project. Under the Alternative 10 Conceptual Site Plan (refer to Figure 1), in the part of the Back Lot that is closest to the Los Angeles River (drainage areas R and S), redevelopment of a current parking lot with three new commercial buildings is proposed. Further south in the Back Lot in drainage area M, structured parking and two new commercial buildings are proposed in areas that are currently comprised of surface parking and open space or sets (Figure 2).

Model Results

Runoff Volumes

Using the rainfall previously discussed and the imperviousness values noted above, Table 5 summarizes the annual average runoff volumes computed by the model for each drainage area for baseline conditions, proposed Project, and Alternative 10 scenario.

Table 5. Summary of Estimated Annual Average Runoff Volume for Each Drainage Area

Drainage Area	Runoff Volume (acre-ft/yr)		
	Baseline[1]	Proposed Project[1]	Alternative 10
A	9.8	9.9	9.9
B	2.8	2.9	2.9
C	1.1	1.1	1.1
D	47.0	47.2	47.5
E	7.3	7.3	7.3
F	14.0	13.9	14.0
G	2.2	2.2	2.2
H	2.4	2.4	2.4
I	6.0	5.9	6.9
J	38.3	38.1	34.8
L	45.5	40.9	44.0
M	76.3	34.6	76.2[2]
O	13.9	11.1	8.3
P	4.6	3.9	5.7
Q	5.3	N/A	3.9
R	4.5	N/A	4.8[2]

S	4.7	N/A	3.8[2]
T	2.8	N/A	2.9
U	2.9	N/A	2.5
V	8.6	N/A	6.3
BL-1	N/A	64.9	N/A
BL-2	N/A	13.1	N/A
BL-3	N/A	10.2	N/A
BL-4	N/A	5.6	N/A
TOTAL	300.0	315.1	287.4

1) Values for baseline and proposed Project are same as documented in Table A-5 of the Surface Water Quality Technical Report for the proposed Project, Attachment A.
2) Does not include volume reduction achieved in proposed bioretention BMPs

BMP Effectiveness

Existing BMPs included in the baseline condition model are continuous deflection separator (CDS) system units at stormwater outfalls that serve drainage areas A, D, E, J, and M (Refer to Figure 2 for locations of CDS units). For the proposed Project and Alternative 10 scenario, three additional CDS units are proposed for drainage areas F, L, and O and media filters (or systems with equivalent treatment or pollutant removal performance) are proposed to be installed in series with the existing CDS units on drainage areas D, J, and M. For these systems in series, the minimum effluent and maximum percent removal of the CDS or media filter is applied to the treated runoff volume. The area-wide NPDES Permit requires completion of a Standard Urban Stormwater Mitigation Plan (SUSMP) that provides treatment for at least 80 percent of average annual runoff for new development or significant redevelopment. Table 6 summarizes the estimated pollutant load removed from drainage areas with existing CDS units or CDS units with proposed additional media filters, assuming that the design criteria of 80 percent of average annual runoff is achieved.

Table 6. Summary of Pollutant Removal in Existing and Proposed CDS Units and Proposed Media Filters for Alternative 10 Scenario

Variable	Units	Drainage Area							
		A[1]	D[1]	E[1]	F	J[1]	L	M[1,2]	O
BMP Tributary Area	acres	10.3	54.0	7.3	16.3	41.0	59.0	117.4	10.1
Treatment Volume Achieved	ac-ft/yr	9.9	47.5	7.3	14.0	34.9	44.0	76.2	8.3
Pollutant Removal Achieved									
TSS	lbs/yr	603.3	4,823.8	417.3	997.8	3,687.6	4,131.3	11,662.2	652.5
TP	lbs/yr	4.2	24.6	3.2	5.7	17.8	15.7	34.0	3.3
TKN	lbs/yr	7.5	152.2	6.2	7.6	108.7	2.0	190.9	3.1
Total Copper	lbs/yr	0.5	2.9	0.4	0.7	2.1	2.0	4.1	0.4
Dissolved Copper	lbs/yr	0.1	0.6	0.1	0.1	0.5	0.2	0.7	0.1
Total Zinc	lbs/yr	3.0	18.7	2.2	4.0	13.5	10.8	25.2	2.2
Dissolved Zinc	lbs/yr	2.2	10.2	1.7	3.0	7.3	8.1	12.7	1.7
Oil and Grease	lbs/yr	55.7	258.4	42.0	75.8	186.7	216.1	317.8	43.6
BOD	lbs/yr	172	2,030	129	239	1,478	713	2,765	139

1) Drainage areas with existing CDS units
2) Treatment volume does not account for upstream retention in proposed bioretention BMP for Alternative 10 scenario (see Table 7)

For purposes of this analysis, bioretention facilities are proposed within open spaces surrounding new commercial buildings proposed in drainage areas R and S, and adjacent to the proposed parking structure in drainage area M (see Figure 2). For the bioretention facility in drainage area M, there is sufficient open space adjacent to the building to size the BMP to capture and infiltrate runoff from the majority of storms over rooftop tributary area. Accordingly, the model assumes full retention of 80 percent of average annual runoff (without underdrains). For the bioretention areas in drainage areas R and S, it is assumed that infiltration will be infeasible due to compacted soils and potentially high groundwater, and therefore underdrains will be necessary to discharge treated stormwater to the Los Angeles River (see Table 2 for effluent concentrations and percent removal for various pollutants). To meet SUSMP requirements, these BMPs will be sized[7] to allow for bio-treatment and release of 80

[7] The City of Los Angeles requires a minimum bio-treatment footprint equal to 4 percent of the impervious tributary area to achieve the design criteria of 80 percent of average annual runoff (personal communication with Ammar Eltawil, City of Los Angeles SUSMP Program Manager).

percent of average annual runoff volume. Table 7 summarizes runoff volume retention or bio-treatment and pollutant removal from the proposed bioretention BMPs in the Back Lot under the Alternative 10 scenario.

Table 7. Summary of Proposed Back Lot Bioretention BMPs for Alternative 10 Scenario

Variable	Units	Drainage Area M	Drainage Area R	Drainage Area S
BMP Tributary Area	acres	5.8	5.6	4.8
Bioretention Bottom Area	acres	1.1	1.2	1.3
Retention Volume Achieved	ac-ft/yr	4.1	NA[1]	NA[1]
Bio-treatment Volume Achieved	ac-ft/yr	NA	3.85	3.02
Pollutant Removal Achieved				
TSS	lbs/yr	954	672	571
TP	lbs/yr	4.0	2.6	1.9
TKN	lbs/yr	33.5	23.1	17.3
Total Copper	lbs/yr	0.39	0.30	0.23
Dissolved Copper	lbs/yr	0.13	0.072	0.051
Total Zinc	lbs/yr	2.4	2.2	1.6
Dissolved Zinc	lbs/yr	1.4	1.1	0.85
Oil and Grease	lbs/yr	31	26	19
BOD	lbs/yr	276	109	83

1) Bioretention with underdrains will provide some infiltration of stormwater; however it was conservatively assumed that 100 percent of inflow would be discharged to the river

Pollutant Loads

The estimated pollutant loads and average pollutant concentrations for baseline conditions, the proposed Project, and Alternative 10 scenario were calculated by subtracting estimated annual pollutant removal from pre-BMP loading estimates (Table 8). The calculation of the loads and concentrations for baseline condition, shown in Table 8, also accounts for the estimated pollutant removal associated with the existing CDS units.

Table 8. Estimated Loads and Concentrations for Proposed Project Site – Baseline Condition, Proposed Project, and Alternative 10 Scenario

Constituent	Pollutant Load (lbs/yr)			Average Pollutant Concentration (mg/L)		
	Baseline	Proposed	Alternative 10	Baseline	Proposed	Alternative 10
TSS	50,800	38,165	37,079	62	46	48
Total P	227	190	164	0.28	0.23	0.21
TKN	2,467	1,878	1,842	3.0	2.3	2.4
Total Cu	21	14	14	0.026	0.016	0.018
Dissolved Cu	9	7	7	0.011	0.008	0.009
Total Zn	131	80	83	0.160	0.097	0.107
Dissolved Zn	74	51	52	0.090	0.062	0.068
Oil and Grease	1,446	854	930	1.8	1.0	1.2
BOD_5	17,542	10,875	11,252	22	13	15

Significance Thresholds

The *L.A. CEQA Thresholds Guide* (pg. G.2-4) states that a project would normally have a significant impact on surface water quality if discharges associated with the proposed Project would:

7 Create "pollution," "contamination" or "nuisance" as defined in Section 13050 of the California Water Code. These definitions are:

- Pollution means an alteration of the quality of the waters of the state to a degree, which unreasonably affects either of the following: 1) the waters for beneficial uses[8] or 2) facilities which serve these beneficial uses. Pollution may include contamination.

- Contamination means an impairment of the quality of the waters of the state by waste[9] to a degree which creates a hazard to the public health through poisoning or

[8] Section 13050 provides the following definition for beneficial uses – " 'Beneficial uses' of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves."

[9] Section 13050 provides the following definition for waste – " 'Waste' includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal."

through the spread of disease. Contamination includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

- Nuisance means anything which meets all of the following requirements: 1) is injurious to health, or is indecent or offensive to the senses or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) affects at the same time an entire community of neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and 3) occurs during, or as a result of, the treatment or disposal of wastes.

or

8 Cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan (Basin Plan) for the receiving water body.[10]

Summary of Surface Water Quality Impacts

Based on the above analysis for Alternative 10 and as detailed in the Surface Water Quality Technical Report for the proposed NBC Universal Evolution Plan Project (proposed Project), in summary, both the proposed Project and Alternative 10 scenarios reduce pollutant loads to the Los Angeles River relative to the baseline condition. The majority of loads and concentrations for Alternative 10 are comparable to those for the proposed Project. However, slightly higher loads for some constituents in Alternative 10 are due to the removal of bioswale BMPs that intended to treat all of the drainage area from Building Lots 1 and 3 in the proposed Project. Based on these considerations, potential impacts on surface water associated with construction and operation of either the proposed Project or Alternative 10 are not anticipated to cause or contribute to "pollution," "contamination" or "nuisance" or an exceedance of water quality standards, nor are they expected to adversely affect beneficial uses, or significantly impact the Los Angeles River. The less than significant impacts of Alternative 10 would be similar to the less than significant impacts of the proposed Project.

Mitigation Measures

Similar to the proposed Project, with continued implementation of existing water quality BMPs and proposed Project Design Features, no significant surface water quality impacts are anticipated from the construction and operation of either the proposed Project or Alternative 10; therefore, no mitigation is required. Although no mitigation is required, the surface water quality Project Design Features identified for the Project (see Section 4 of the Surface Water Quality Technical Report for the proposed Project included as Appendix I-2 to the Draft EIR) would be implemented under Alternative 10, except that PDF-SWQ-3 would be modified as described below to reflect the change in proposed development in the Back Lot and PDF-SWQ-4 and PDF-SWQ-5 would no longer be applicable.

[10] Evaluation of this significance criterion includes discussion of the applicability of the SUSMP requirements of the MS4 Permit and its implementing regulations.

PDF-SWQ-3 Prior to the issuance of a B-Permit or building permit for any Project (as that term is defined in the Specific Plans) that triggers the Standard Urban Stormwater Mitigation Plan (SUSMP) requirements, the Applicant or its successor shall prepare and submit a SUSMP to the City of Los Angeles or County of Los Angeles to the satisfaction of the applicable jurisdiction, as applicable, for review. In addition, drawings and specifications of the proposed permanent stormwater quality Best Management Practices (BMPs),including continuous deflection separator units and media filters (or BMPs of similar technology with equivalent treatment or pollutant removal performance) in Drainage Areas A, D, E, F, J, L, M, O, as shown on Figure 2, and bioswales and biorentention/underdrain BMPs (or BMPs of similar technology with equivalent treatment or pollutant removal performance) in Drainage Areas M, R, and S, as applicable, shall be submitted for review to the City of Los Angeles or County of Los Angeles, as applicable.

Unavoidable Adverse Impacts

As with the proposed Project, with adherence to existing regulatory requirements, and incorporation of Project Design Features, impacts to surface water quality associated with Alternative 10 would be less than significant, as neither the proposed Project not Alternative 10 are anticipated to create pollution, contamination or nuisance as defined in Section 13050 of the CWC or cause a regulatory standards to be violated, as defined in the applicable NPDES stormwater permits or Water Quality Control Plan (Basin Plan) for the receiving water body. As such, significant adverse impacts would be avoided.

Annexation and Detachment

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site. Other jurisdictional boundary adjustments as provided for in the proposed Project would be made with refinements to reflect the land use configurations associated with this alternative. Should annexation and detachment be approved, the appropriate lead agency's policies and procedures would remain and be applicable to the areas within the new City/County boundaries. Similar with the proposed Project, the potential impacts associated with the operation of Alternative 10 would not change if annexation/detachment occurs.

Appendix FEIR-23

Alternative 10: No Residential Alternative
Water Resources: Groundwater

Technical Memorandum

To: *Universal City Studios LLC*

From: *CDM Smith*

Date: *August 21, 2012*

Subject: *NBC Universal Evolution Plan - Groundwater Analysis for Alternative 10 – No Residential Alternative*

This technical memorandum provides an analysis of groundwater hydrology and water quality conditions associated with Alternative 10: No Residential Alternative for comparison to existing conditions and the proposed Project at Universal Studies (the Project Site). The objective of this technical memorandum is to compare groundwater hydrology and water quality between Alternative 10 and the proposed Project, as well as between Alternative 10 and baseline conditions.

Description of Alternative 10: No Residential Alternative

The No Residential Alternative represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. The No Residential Alternative ("Alternative 10") would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Figure 1 at the end of this memorandum provides an illustration of the Conceptual Site Plan for Alternative 10.

Groundwater Comparison

Alternative 10 would be developed across the entire 391-acre Project Site like the proposed Project, but at a significantly reduced level. Under this alternative, the proposed uses are similar to those set forth for the proposed Project, but the quantity of development that would occur within the Back Lot portion of the Project Site is significantly reduced. Although there would no longer be residential development in the Mixed-Use Residential Area, which would eliminate the proposed neighborhood retail and community-serving commercial uses, Alternative 10 would include additional studio office and entertainment uses, and additional hotel uses. Additional parking structures are also part of Alternative 10.

Groundwater Hydrology
Existing Conditions

The Project Site is located in an area with large variations in surface elevation and in the elevation and extent where groundwater is encountered. Shallow groundwater is encountered along the Los Angeles Flood Control Channel/Los Angeles River in the northern portion of the Project Site. Under the remainder of the Project Site the occurrence of groundwater is limited to joints and fractures in the bedrock materials. A review of previous investigations performed for the Project Site indicates that the Topanga Formation beneath a majority of the Project Site is considered non-waterbearing, as it does not yield significant quantities of water to extraction wells.[1] Recent Alluvium (Qal) located under portions of the Project Site in the north and west, and in a small area along the southwest boundary of Universal City and the Project Site (in the area along the 101 freeway) is considered to be water bearing. Available data indicates that groundwater flow beneath the Project Site is consistent with the region - a northeasterly direction toward the Los Angeles Flood Control Channel/Los Angeles River and then east along the general path of the flood control channel/river. The northeasterly flow is perpendicular to the strike of the bedrock. Groundwater levels measured at the Project Site found

[1] MWH Americas Inc. (MWH). *Phase I Environmental Site Assessment, Universal City Studios Backlot Study Area, Universal City, California. May 25, 2005, MWH Preliminary Phase II Environmental Site Assessment, Universal City Studios Backlot Study Area, Universal City, California. May 26, 2005, and URS. Supplemental Phase II Environmental Site Assessment, Universal City Studios Backlot Study Area, Universal City, California.* May 16, 2006.

groundwater at elevations ranging from approximately 512 to 697 feet above MSL; therefore, groundwater found beneath a majority of the Project Site is not considered to be hydrologically connected with the San Fernando Groundwater Basin (Basin) where groundwater levels are generally lower.

Currently, limited dewatering occurs at the Project Site. The following locations on the Project Site have shallow groundwater that, as necessary, needs to be dewatered and is discharged in the sanitary sewer under an existing Industrial Wastewater Permit:

- Jurassic Park Ride – "zero level/splash down" area
- Jaws Lake area – between Jaws and Falls Lake
- Collapsing Bridge area

No groundwater production wells or public water supply wells are associated with the Project Site.

Based on the site-specific land uses and impervious percentage factors, the existing Project Site is approximately 66 percent impervious.

Project Impacts

The primary concerns relating to groundwater hydrology associated with Project construction and operation are: (1) effects upon groundwater level, rate, direction or flow related to possible temporary, short-term and/or long-term dewatering activities; and (2) reduction in pervious surfaces that has the potential to result in reduction of groundwater recharge.

Significance Thresholds

The *L.A. CEQA Thresholds Guide* (pg. G.3-4) states that a project would normally have a significant impact on groundwater level if it would:

- Change potable water level sufficiently to:
    - Reduce the ability of the water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought;
    - Reduce yields of adjacent wells or wellfields (public or private); or
    - Adversely change the rate or direction of flow of groundwater; or
- Result in demonstrable and sustained reductions of groundwater recharge capacity.

As with the Project, these thresholds are used to determine if Alternative 10 would have significant groundwater hydrology impacts.

Construction

Groundwater under the Project Site is not currently pumped for beneficial uses (i.e., drinking water, industrial or agricultural supply). In addition, no water supply wells are located at the Project Site that could be impacted by construction of either Alternative 10 or the proposed Project and the closest municipal supply well in the San Fernando Basin is approximately 1.2 miles from the Project Site, and neither alternative would include construction of water supply wells. Therefore, due to the distance to water supply wells, and the fact that drinking water, industrial or agricultural supply wells would not be constructed, construction of Alternative 10 is not expected to change potable water levels sufficiently to reduce the ability of water utilities to use the Basin for public water supplies or to reduce yields of adjacent wells or wellfields (public or private).

Groundwater could be encountered as close to the surface as 15 feet below ground surface (bgs). Alternative 10 would include additional parking structures similar to the proposed Project, except for the reduced development in the Back Lot Area. Therefore, similar to the proposed Project, portions of Alternative 10 could encounter groundwater during construction and require dewatering. If construction dewatering is required, local groundwater flow direction and depth may be temporarily affected. The hydraulic conductivity observed in the shallow zone at the site is low, with a maximum value of 6.8 ft/day observed at one location, and a geometric mean hydraulic conductivity of 1.5 ft/day. The estimated maximum depth of excavation will extend for only a short distance into the saturated zone, and final basement slab levels will require an anticipated maximum construction drawdown of 11 feet. Anticipated dewatering requirements during construction range from about 65 gallons per minute (gpm) initially, declining over several months to about 9 gpm. At this rate, the radius of drawdown influence is estimated to extend a maximum of approximately 300 feet. Therefore, dewatering is not anticipated to draw water across any substantial distance and impacts are considered negligible from a local and regional basin perspective. Since no water supply wells would be affected and construction dewatering is not anticipated to adversely impact the rate or direction of flow of groundwater, as with the proposed Project, no significant impact from construction of Alternative 10 is anticipated to groundwater hydrology.

Operation

No water supply wells are located at the Project Site and no drinking water, industrial or agricultural supply wells would installed, or operated as part of Alternative 10. The nearest water supply well (a public well owned by Los Angeles Department of Water and Power, which is currently inactive) is approximately 1.2 miles northeast of the Project Site, with the nearest active water well field approximately 3 miles away. Therefore, no impact on public water supplies and no reduction in yields of adjacent wells or wellfields (public or private) are expected.

As with the proposed Project, development associated with Alternative 10 is not expected to include activities that would require groundwater remediation that could affect groundwater hydrology. In addition, no long-term dewatering is anticipated with the operation of Alternative 10. However, as with the proposed Project, if belowground structures (e.g., subterranean parking) associated with Alternative 10 extend into the groundwater table; those structures may require permanent dewatering systems. If long-term dewatering is determined to be required, groundwater would be discharged either to the sanitary sewer system or to the Los Angeles Flood Control Channel/Los Angeles River via the storm drain system if the water quality is acceptable for discharge. As stated above, a majority of the Project Site does not overlay or have a connection with the Basin. In addition, adverse impacts are not anticipated relative to the rate or direction of flow of shallow groundwater from long-term dewatering because the maximum anticipated permanent dewatering rates are anticipated to be 0.9 to 4.0 gpm and its radius of influence on groundwater would be limited to approximately 1,000 feet (see Attachment A of the Groundwater Technical Report for the proposed NBC Universal Evolution Plan Project for details on the estimation of dewatering inflow). This value is insignificant relative to the overall groundwater basin. Assuming Alternative 10 included the development of structures that extended below the historic high water level (15 bgs) within portions of the site that could be overlying the Basin, and at the anticipated maximum dewatering rates of 0.9 to 4.0 gpm, it is estimated that the amount of groundwater extracted from long-term dewatering could range from 3.0 to 13.0 acre-feet/year.[2] Compared to the overall Basin, as with the proposed Project the potential long-term dewatering from Alternative 10 is minimal. Therefore, dewatering is not anticipated to draw water across any substantial distance and impacts are considered negligible from a local and regional basin perspective. Since no water supply wells would be affected and dewatering is not anticipated to adversely impact the rate or direction of flow of groundwater, the operation of Alternative 10 is not expected to have a significant impact on potable water levels.

Percolation of precipitation that falls on pervious surfaces is variable dependent upon the soil type, condition of the soil, vegetative cover and other factors. Though no change of the Project Site boundary would occur, implementation of the Project would include both the addition and removal of impervious surfaces throughout the Project Site boundary. Because Alternative 10 includes a significant reduction in development of the Back Lot relative to the proposed Mixed-Use Residential Area under the proposed Project, the amount of impervious surface under Alternative 10 would be slightly lower (62.4 percent) than the existing conditions (which is approximately 66 percent impervious) and lower than the proposed Project (which would result in approximately 70 percent impervious surface). As the conclusion relative to the proposed Project was that it was not expected to result in any measurable decrease in local groundwater levels and would not result in demonstrable and sustained reductions of groundwater recharge capacity, and the operation of

[2] The estimated range of groundwater extracted from long-term dewatering assumes that a total of approximately 150,000 square feet at a maximum depth of 23 feet could be developed within a portion of the site that could overly the Basin.

Alternative 10 could actually result in an increase in groundwater recharge, neither the proposed Project or Alternative 10 would result in a significant impact to groundwater hydrology.

Mitigation Measures

Similar to the proposed Project, no significant impacts are anticipated to potable water levels or recharge of groundwater from the construction and operation of Alternative 10; therefore, no mitigation is required.

Groundwater Quality

Existing Conditions

In general, due to historical activities and practices, groundwater quality in the County and City of Los Angeles has been substantially degraded from background levels. Degradation of regional groundwater is a result of seepage into the subsurface of fertilizers and pesticides (from agricultural uses), nitrogen and pathogenic bacteria (from septic tanks), and various hazardous substances (from leaking aboveground and underground storage tanks and industrial-type operations). A small portion of the Project Site (i.e., portion near the Los Angeles Flood Control Channel/Los Angeles River) is located along the southeast edge of the Basin. The specific groundwater quality impairments associated with the Basin include volatile organic compounds (VOCs) from industry, and nitrates from subsurface sewage disposal and past agricultural activities.[3] In particular, VOCs such as trichlorethylene (TCE), perchloroethylene (PCE), petroleum compounds, chloroform, nitrate, sulfate, and heavy metals. TCE, PCE and nitrate contamination occurs in the eastern part of the Basin and elevated sulfate concentration occurs in the western part of the Basin.[4] Due to the widespread pollution in the Basin, the EPA has designated portions of the Basin, along with others in the Los Angeles area, as Superfund sites. The San Fernando Valley (Area 2) Crystal Springs Wellfield as an area of contaminated groundwater in the Basin that is within 1/4 mile of the Project Site. As with much of the Basin, the contaminated groundwater in the Crystal Springs Wellfield area is impacted mostly by TCE and PCE.

The closed on-site landfill and the potential for contamination of groundwater from the handling and storage of hazardous materials in underground storage tanks (USTs) could cause potential groundwater quality impacts at the Project Site. (Refer to the Groundwater Technical Report and Environmental Safety Technical Reports for the proposed NBC Universal Evolution Plan Project for details on the existing Project Site).

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[3] California Regional Water Quality Control Board – Los Angeles Region (4). *Water Quality Control Plan – Los Angeles Region: Basin Plan for the Coastal Watershed of Los Angeles and Ventura Counties. Approved by State Office of Administration Law on* February 23, 1995.

[4] DWR. *Water Facts: Adjudicated Groundwater Basins in California*. April 2004.

Project Impacts

As with the proposed Project, the primary concerns relating to groundwater quality associated with Alternative 10 construction and operation are: (1) spillage of hazardous materials from equipment, and (2) effects upon groundwater quality relating to short-term and long-term dewatering activities (i.e., movement of existing contamination).

Significance Thresholds

The *L.A. CEQA Thresholds Guide* (pg. G.4-4) states that a project would normally result in a significant impact on groundwater quality if it would:

- Affect the rate or change the direction of movement of existing contaminants;
- Expand the area affected by contaminants;
- Result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or
- Cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

As with the proposed Project, these thresholds are used to determine if Alternative 10 would have significant groundwater quality impacts.

Construction

Similar to the proposed Project, during on-site grading and building construction associated with Alternative 10, hazardous materials, such as fuels, paints, solvents, concrete additives and the like, could be used and therefore require proper management and, in some cases, disposal. The management of any resultant hazardous wastes could increase the opportunity for hazardous materials releases into groundwater. Compliance with all applicable federal, state and local requirements concerning the handling, storage and disposal of hazardous waste, will effectively reduce the potential for the construction of Alternative 10 to release contaminants into groundwater that could affect the rate or change the direction of movement of existing contaminants, expand the area or increase the level of groundwater contamination or cause the violation of regulatory water quality standards at an existing production well. In addition, as there are no groundwater production wells or public water supply wells within one mile of the Project Site, no construction impacts are anticipated to existing wells. Therefore, no significant impact is anticipated for Alternative 10, which would also be the case for the proposed Project.

As described above, groundwater could be encountered as close to the surface as 15 feet bgs. Therefore, portions of Alternative 10 could encounter groundwater during construction and require dewatering. If construction dewatering is required, it has the potential to affect the rate, change the direction, or expand the area affected by groundwater contamination. Previous investigations indicated no leakage of hazardous materials from the closed landfill, and that potential groundwater contamination associated with on-site releases have been, or continue to be (i.e., associated with Technicolor), addressed under applicable regulatory oversight. Therefore, no significant areas of groundwater contamination have been identified beneath the Project Site. Further, adverse impacts are not anticipated relative to the rate or direction of flow of shallow groundwater, or the area affected by, or the level of, groundwater contaminants, because the estimated maximum depth of excavation will extend for only a short distance and the anticipated dewatering requirements during construction is estimated to range from about 65 gpm initially, declining over several months to about 9 gpm. Similar to the proposed Project, if dewatering is required, compliance with all applicable federal, state and local requirements concerning the handling, storage and disposal of hazardous materials shall also continue during the design, construction and operation of Alternative 10. Compliance with all applicable existing regulations and plans at the Project Site will prevent the construction of Alternative 10 from expanding the area affected by contaminants, prevent an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion) or cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act.

Any discharge of groundwater during construction shall be pursuant to, and comply with, the applicable NPDES permit or industrial user sewer discharge permit requirements. If contaminated groundwater is found during the management of construction or long-term dewatering, treatment and discharge, as appropriate, shall be conducted in compliance with the applicable regulatory requirements (i.e., LARWQCB General Permit conditions, or City or County of Los Angeles requirements). General Permit conditions and water quality requirements that will effectively reduce the potential for the construction of the Project to impact groundwater quality is detailed in the Surface Water Quality Technical Report for the NBC Universal Evolution Plan Project.

In addition, should a groundwater monitoring well be discovered during construction, the abandonment of the well shall be completed in accordance with the guidelines set forth in the "*Department of Water Resources, California Water Well Standards, Part III, Destruction of Monitoring Wells*", and the California Department of Health Services guidelines, and no significant impact is anticipated for Alternative 10, which is the same conclusion for the proposed Project.

Operation

As with the proposed Project, hazardous materials such as fuels, waste oils and materials used by the tenants and third-party venders will continue to be used on-site during operation under Alternative

10 and that the proposed development could cause an increase in on-site attendance and employee operations. Alternative 10 includes an increase in studio office and entertainment uses, as well as additional hotel uses. Surface spills from the handling of hazardous materials most often involve small quantities and are cleaned up in a timely manner thereby resulting in little threat to groundwater below the Project Site. This increase in operations may result in an increase in the usage of fuels, lubricants and other potential pollutants. An increase in the quantities of hazardous materials used on-site may require an increase in storage of the hazardous materials in existing USTs, or require additional USTs be installed. Any increases in the numbers of USTs over existing conditions would most likely be as a result of fuel storage for boilers, generators, and/or fueling of vehicles in the Studio and Entertainment Areas. This increase in the number of USTs and the aggregate quantities of associated hazardous materials could result in a potential increase in the possibility of spillage and UST leakage with subsequent contamination of groundwater. Aboveground Storage Tanks may also be considered for use, which may decrease the potential for releases to groundwater by confining potential spills and leaks to aboveground confinement areas. Similar to the proposed Project, though there is a potential for an impact, as detailed in the Environmental Safety Technical Report for the NBC Universal Evolution Plan Project, the existing hazardous materials and UST management programs are assumed to continue with implementation of Alternative 10. Compliance with all applicable existing regulations and plans at the Project Site would prevent Alternative 10 from affecting, or expanding any potential areas affected by contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. In addition, as there are no groundwater production wells or public water supply wells within one mile of the Project Site, no water quality-related operational impacts are anticipated to existing wells. Therefore, no significant impact is anticipated for Alternative 10, which is the same conclusion for the proposed Project.

As with the proposed Project, no permanent dewatering systems are anticipated with development of Alternative 10. However, if belowground structures (e.g., subterranean parking) associated with the Project extend into the groundwater table; those structures could require permanent dewatering systems. Potential permanent dewatering systems could include dewatering for methane safety systems and/or dewatering of structures below areas of groundwater, depending on the location. If a dewatering system is necessary, it will be designed and operated in accordance with all applicable regulatory and permit requirements. Groundwater from long-term dewatering could be discharged to the Los Angeles Flood Control Channel/Los Angeles River or sanitary sewer in compliance with all applicable regulations. A majority of the Project Site does not have a hydrologic connection with the Basin. In addition, no significant areas of groundwater contamination have been encountered beneath the Project Site. As with the proposed Project, the estimated maximum flow of dewatering is low (0.9 to 4.0 gpm) and the radius of influence on groundwater is limited. Therefore, dewatering is not anticipated to draw water across any substantial distance. As such, no significant impact is anticipated to the rate or direction of movement of any existing contaminants beneath the Project Site

or the area affected by, or the level of, groundwater contaminants. That conclusion is the same for Alternative 10 and the proposed Project.

If permanent dewatering is required, any discharge of groundwater during operation of Alternative 10 shall be pursuant to, and comply with, the applicable NPDES permit or industrial user sewer discharge permit requirements. If contaminated groundwater is found during long-term dewatering, treatment and discharge, as appropriate, shall be conducted in compliance with the applicable regulatory requirements (i.e., LARWQCB General Permit conditions, or City or County of Los Angeles requirements). Therefore, no operational impacts are anticipated to existing wells and no regulatory water quality standards at an existing production well would be violated. Overall, there would be no significant impact to groundwater quality under Alternative 10, which would also be the case under the proposed Project.

Mitigation Measures

Similar to the proposed Project, compliance with applicable hazardous materials regulations, NPDES permit of industrial user sewer discharge permit requirements, etc.), construction and operation of Alternative 10 is not anticipated to adversely affect the rate, direction of flow, or extent of groundwater contamination, to result in increased levels of groundwater contamination, or cause regulatory water quality standards at a existing production wells to be violated; therefore, impacts are less than significant and no mitigation measures are required.

Summary of Potential Groundwater Impacts

Groundwater Hydrology

In summary, construction and operation of Alternative 10 would not change potable water level sufficiently to reduce the ability of the water utility to use the groundwater basin for public water supplies (including conjunctive use purposes, storage of imported water, summer/winter peaking, or respond to emergencies and drought), reduce yields of adjacent wells or wellfields (public or private), or adversely change the rate or direction of flow of groundwater. The amount of impervious surface under Alternative 10 would be slightly lower (62.4 percent) than the existing conditions (which is approximately 66 percent impervious); therefore, Alternative 10 would slightly increase (not result in any measurable decrease) in local groundwater levels and would not result in demonstrable and sustained reductions of groundwater recharge capacity. Therefore, impacts to groundwater hydrology are less than significant and no mitigation measures are required.

With the exception of the amount of impervious surface that could affect groundwater recharge, Alternative 10 would be similar to the proposed Project. Because Alternative 10 includes a reduction in development of the Back Lot relative to the proposed Mixed-Use Residential Area under the proposed Project, the amount of impervious surface under Alternative 10 would be lower than the proposed Project (which would result in approximately 70 percent impervious surface). The potential impacts to groundwater hydrology from Alternative 10 and the proposed Project are less

than significant. However, Alternative 10 would result in fewer potential impacts to groundwater hydrology than the proposed Project.

Groundwater Quality

As discussed above, with compliance with applicable hazardous materials regulations, NPDES permit of industrial user sewer discharge permit requirements, etc.), construction and operation of Alternative 10 is not anticipated to adversely affect the rate or change the direction of movement of existing contaminants, expand the area affected by contaminants, result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion, as these are not anticipated due to soil properties at the Project Site), or cause regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. Therefore, impacts to groundwater quality are less than significant and no mitigation measures are required.

Alternative 10 includes an increase in studio office and entertainment uses, as well as additional hotel uses. In particular, the increase in entertainment uses could involve activities associated with the storage of hazardous materials in USTs could have a potential impact on groundwater quality during operation of Alternative 10. This increase in operations may result in an increase in the usage of fuels, lubricants and other potential pollutants, and could also result in an increase in the quantities of hazardous materials used on-site that may require an increase in storage of the hazardous materials in existing USTs, or require additional USTs be installed. Although this could result in a potential increase in the possibility of spillage and UST leakage with subsequent contamination of groundwater, similar to the proposed Project, as detailed in the Environmental Safety Analysis – Alternative 10, technical memorandum, the existing hazardous materials and UST management programs are assumed to continue with implementation of Alternative 10. Compliance with all applicable existing regulations and plans at the Project Site would prevent Alternative 10 from affecting, or expanding any potential areas affected by contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. In addition, as there are no groundwater production wells or public water supply wells within one mile of the Project Site, no water quality-related operational impacts are anticipated to existing wells. Therefore, although the potential for an increase in the quantities of hazardous materials used on-site that could result in a potential increase in the possibility of spillage and UST leakage with subsequent contamination of groundwater exists under Alternative 10, similar to the proposed Project, a less than significant impact on groundwater quality is anticipated with compliance with all applicable existing regulations and plans.

Unavoidable Adverse Impacts

As with the proposed Project, construction and operation of Alternative 10 would not result in significant impacts to groundwater hydrology or groundwater quality; therefore, significant adverse impacts under Alternative 10 would be avoided.

Annexation and Detachment

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site. Other jurisdictional boundary adjustments as provided for in the proposed Project would be made with refinements to reflect the land use configurations associated with this alternative. Should annexation and detachment be approved, the appropriate lead agency's policies and procedures would remain and be applicable to the areas within the new City/County boundaries. As groundwater quality is regulated on a federal, state and regional level, similar with the proposed Project, the potential impacts associated with the operation of Alternative 10 would not change if annexation/detachment does or does not occur.

Source: Rios Clementi Hale Studios (July 3, 2012)

N

CDM Smith

NBC Universal Evolution Plan
Alternative 10 Conceptual Plan

Figure 1

Appendix FEIR-24

Alternative 10: No Residential Alternative
Air Quality

NBC Universal Evolution Plan
Air Quality Technical Report
No Residential Alternative (Alternative 10)

Prepared for:
Universal City Studios
Los Angeles, California

Prepared by:
Eric C. Lu, Senior Manager
Stanley Hayes, Principal
ENVIRON International Corporation
Irvine, California

Date:
August 2012

Project Number:
03-17201A

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Acronyms and Abbreviations

Alternative 10	No Residential Alternative
AQMD	Air Quality Management District
Blair Drive	Hollywood Manor
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
COPC	Chemical of Potential Concern
DPF	Diesel Particulate Filter
DPM	Diesel Particulate Matter
Draft EIR	Draft Environmental Impact Report for the proposed Project
EIR	Final Environmental Impact Report for the proposed Project
EMFAC	EMission FACtors model
ENVIRON	Environ International Corporation
FIND	SCAQMD Facility Information Detail
GHG	Greenhouse Gases
HARP	Hotspots Analysis and Reporting Program
HRA	Health Risk Assessment
ISCST3	Industrial Source Complex Short Term Model
LA	Los Angeles
LAC	City of Los Angeles
lb	Pound
LST	Localized Significance Thresholds
m	Meter
Mg	Milligram
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
O_3	Ozone
Pb	Lead
PDF	Project Design Feature
PM	Particulate Matter
PM_{10}	Particulates 10 Microns or Smaller
$PM_{2.5}$	Particulates 2.5 Microns or Smaller
ppm	Parts per Million
proposed Project	NBC Universal Evolution Plan Project
REL	Reference Exposure Level
SCAQMD	South Coast Air Quality Management District
SO_2	Sulfur Dioxide
SOCAB	South Coast Air Basin

SO_x	Oxides of Sulfur
the Project Site	391 acres located approximately two miles north of Hollywood and 10 miles northwest of downtown Los Angeles
TAC	Toxic Air Contaminant
URBEMIS	URBan EMISsions model
USEPA	US Environmental Protection Agency
VOC	Volatile Organic Compound
µg	Microgram

Executive Summary

In support of the Final Environmental Impact Report (EIR), ENVIRON International Corporation (ENVIRON) prepared this Air Quality Technical Report to assess the projected future air quality impacts of air emissions associated with the No Residential Alternative (Alternative 10) for the NBC Universal Evolution Plan including emissions generated during construction and operation. As discussed in Section 1, the No Residential Alternative represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the proposed Project and increasing the studio production and entertainment elements of the proposed Project. The No Residential Alternative would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. This Air Quality Technical Report includes a summary of the technical approach, an analysis of potential air quality impacts from Alternative 10 construction and operations, an evaluation of how Alternative 10 may affect sensitive receptors, and a comparison of the potential air quality impacts of Alternative 10 and that of the proposed Project.

This Air Quality Technical Report evaluates the projected air quality impact from Alternative 10 emissions using a methodology consistent with the Draft EIR and Project Air Quality Technical Report (March, 2010), included as Appendix J of the Draft EIR ("Project Air Quality Technical Report"). This Air Quality Technical Report evaluates: (1) criteria pollutants, that is, pollutants for which national and state ambient air quality standards have been established, including nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and particulate matter ($PM_{2.5}$ and PM_{10}); and (2) substances determined by the State of California to be toxic air contaminants (TACs). The onsite criteria pollutant mass emissions, the criteria pollutant ambient (*i.e.*, outdoor) air concentrations, and health risk estimates are compared to the applicable California Environmental Quality Act (CEQA) significance thresholds.

As discussed in Section 2, standard techniques are used to estimate criteria pollutant and TAC emissions for both construction and operation of Alternative 10. Air dispersion modeling of the criteria pollutant and TAC emissions is performed using methods recommended by the appropriate regulatory agencies, including the US Environmental Protection Agency (USEPA), California Air Resources Board (CARB), and South Coast Air Quality Management District (SCAQMD).

As discussed in Section 3, for Alternative 10 construction, air quality emissions are expected to be similar to or less than the proposed Project. The maximum potential mass emissions may exceed the SCAQMD mass daily thresholds for CO, oxides of nitrogen (NO_x), PM_{10}, $PM_{2.5}$, and Volatile Organics Compounds (VOC). The maximum potential mass emissions for oxides of sulphur (SO_x) would be below SCAQMD mass daily significance thresholds. The maximum ambient air quality impacts may exceed SCAQMD air quality significance thresholds for 24-hour PM_{10}, and 1-hour and annual NO_2. Maximum ambient air quality impacts for CO, annual PM_{10}, 24-hour $PM_{2.5}$, and sulfates would be below SCAQMD thresholds. There will be no new

significant air quality impacts associated with Alternative 10 construction as compared to the proposed Project.

Construction air quality impacts reported here represent conservatively high estimates due to the assumption that a combination of multiple, infrequent events will occur simultaneously (*e.g.,* worst-case meteorological conditions occur at the same time as the most intense construction activities). The actual simultaneous occurrence of these events is unlikely. Thus, impacts estimated here may never occur, and actual impacts are likely to be lower than those estimated.

As discussed in Section 4, for Alternative 10 operations, air quality emissions are expected to be similar to or less than the proposed Project. The maximum potential mass emissions may exceed the SCAQMD mass daily significance thresholds for CO and NO_x. Maximum potential mass emissions for SO_x, VOC, PM_{10}, and $PM_{2.5}$ would be below SCAQMD mass daily thresholds. The ambient air quality impacts from Alternative 10 would not exceed SCAQMD air quality significance thresholds, except for annual NO_2, primarily caused by high background concentrations which are expected to decline over the life of the project. Estimated 1-hour NO_2, 24-hour PM_{10}, and annual PM_{10}, 24-hour $PM_{2.5}$, CO, and sulfate ambient air quality impacts from Alternative 10 operations would be below SCAQMD significance thresholds, which include the localized CO impacts near roadway intersections from offsite mobile emissions due to Alternative 10 operations. There will be no new significant air quality impacts associated with Alternative 10 operations, as compared to the proposed Project.

As discussed in Section 4, health risks from TACs emitted during Alternative 10 construction and operation are expected to be similar to or less than the proposed Project. Alternative 10 health risks would not exceed SCAQMD significance thresholds. Risk analyses include the use of conservative exposure assumptions that likely overestimate actual exposure and risk. These assumptions include that exposure occurs continuously at outdoor concentrations 24-hours per day, 7-days per week, for an entire 70-year lifetime. People typically spend more than 90% of the time indoors (where levels of outdoor-generated TACs from Alternative 10 would be lower than outdoors). People also move periodically instead of living 70 years at the same location, near the Project site, and are typically away from the vicinity of the Project site during the day for work, shopping, school or other purposes (instead of remaining at their residence all of the time). As a result, reported risks are upper-bound estimates, and actual risks would likely be lower than reported. There will be no new significant health risk impacts associated with Alternative 10, as compared to the proposed Project.

As discussed in Section 6, potential health risks for the childcare center are also reported. Estimated health risk from TAC emissions from operations would be below a commonly accepted risk threshold at the NBC Universal childcare center (Section 6). The CARB land use guidelines are also discussed in this Section.

1 Introduction

This report evaluates the No Residential Alternative (Alternative 10) to the NBC Universal Evolution Plan Project (the proposed Project). The No Residential Alternative represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the proposed Project and increasing the studio production and entertainment elements of the proposed Project. The No Residential Alternative (Alternative 10) would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. A conceptual plan is shown in Figure 1.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the proposed Project. Table 1 summarizes the Alternative 10 net new square footage.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Under Alternative 10, development in the County portions of the proposed Project Site would occur in accordance with the provisions set forth in a modified County Specific Plan, the boundaries of which would reflect the above discussed annexation and detachment actions. Development in the County portions of the proposed Project Site would include Studio, Studio Office, Office, Entertainment, Entertainment Retail, and Amphitheater uses proposed in the County under the proposed Project, and 450,000 square feet of Hotel uses proposed in the County under the proposed Project, plus an additional 192,240 net new square feet of Entertainment uses. In addition, due to Alternative 10's eastward shift of area fronting Universal Hollywood Drive that would be annexed to the City, 250,000 square feet of Studio Office uses proposed to be in City jurisdiction under the proposed Project would shift to County jurisdiction under Alternative 10. As with the proposed Project, Alternative 10 would also include an equivalency program in the County that allows for the development of a different land use mix

as long as the overall character of development within the County Specific Plan area and each Development Area located in the County is maintained.

Development in the City portions of the proposed Project Site under Alternative 10 would occur in accordance with a modified City Specific Plan, the boundaries of which would reflect the above discussed annexation and detachment actions. Development in the City portions of the proposed Project Site would include the 50,000 square feet of Studio uses proposed in the City under the proposed Project, plus 450,000 square feet of Hotel uses in the Entertainment Area, as well as approximately 200,000 new square feet of Studio Office uses, which would be located in the northeastern portion of the proposed Project Site near Barham Boulevard and Lakeside Plaza Drive. Alternative 10 would also include a 5,000 square foot expansion to the existing childcare center in the northeastern portion of the proposed Project Site, which would be located entirely within the City. Accordingly, under Alternative 10, the existing childcare center would not be demolished and relocated to County jurisdiction, as it would be under the proposed Project. Furthermore, Alternative 10 would include an equivalency program in the City that would allow flexibility for modifications to land uses and square footages. The Universal Studios property comprises approximately 391 acres located approximately two miles north of Hollywood and 10 miles northwest of downtown Los Angeles (the Project Site). This is described in the Draft EIR and is the same site for Alternative 10.

ENVIRON prepared this Air Quality Technical Report to estimate the projected future air quality impacts of air emissions associated with Alternative 10, including emissions generated during construction and operations. This Air Quality Technical Report is organized as follows:

- Introduction (Section 1)
- Technical approach for air quality and risk evaluation (Section 2)
- Impacts of Alternative 10 construction (Section 3)
- Impacts of Alternative 10 operations (Section 4)
- Project (Alternative 10) design features (Section 5)
- Siting evaluation for sensitive receptors (Section 6)
- Technical appendices

2 Technical Approach

This Air Quality Technical Report evaluates the projected air quality impact of Alternative 10 emissions of: (1) criteria pollutants, that is, pollutants for which national and state ambient air quality standards have been established, including NO_2, CO, SO_2, and $PM_{2.5}$ and PM_{10}; and (2) substances determined by the State of California to be TACs.[1]

Standard techniques are used to estimate criteria pollutant and TAC emissions for both construction and operation of Alternative 10. Air dispersion modeling of those emissions is performed using methods recommended by the appropriate regulatory agencies, including the USEPA, CARB, and SCAQMD. This Air Quality Technical Report uses emission estimates, modeling techniques and methodologies consistent with Section 2 in the Project Air Quality Technical Report and the Draft EIR for the proposed Project.

This Air Quality Technical Report estimates onsite and offsite criteria pollutant mass emissions, criteria pollutant ambient (i.e., outdoor) air concentrations and health risk. These estimates are compared against the SCAQMD's CEQA significance thresholds. For criteria pollutants, mass emissions are compared to SCAQMD mass daily thresholds to determine if Alternative 10 may cause a significant air quality impact. Ambient or localized air concentrations are compared to national and state ambient air quality standards and/or air quality significance thresholds established by SCAQMD and referenced by the City. A health risk assessment is performed using accepted scientific techniques to estimate potential health risks from the Alternative 10 construction and operational TAC emissions.

2.1 Air Quality Analysis

Offsite ambient concentrations of criteria pollutants and TACs are estimated using air dispersion modeling and compared to National Ambient Air Quality Standards (NAAQS), California's State Ambient Air Quality Standards (CAAQS), and CEQA significance thresholds established by SCAQMD using a methodology consistent with the Project Air Quality Technical Report and Draft EIR.[2] Two types of ambient air quality standards have been established: primary (to protect the public health with an adequate margin of safety) and secondary (to protect the public welfare against adverse non-health-related environmental effects). Primary NAAQS/CAAQS are limits set to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly.[3] The CAAQS are also established to protect the most sensitive individuals in our communities.[4] These are summarized in Table 2 and Table 3. Analyses of offsite ambient air quality impacts are performed separately for both construction and operation emissions, as well as a mid-Alternative 10 scenario, when estimated levels of both construction and operations may occur.

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[1] Based on the likely minimal lead emissions from Project construction and operations, lead was not included in the analysis for air quality impacts for the Project of Alternative 10. While ozone is not listed, the ozone precursors such as VOC and NO_x are evaluated as required by the SCAQMD.

[2] SCAQMD 2011. "SCAQMD Air Quality Significance Thresholds" March.

[3] http://www.epa.gov/air/criteria.html

[4] http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm

2.2 Overall Methodology

This section describes the methodology for estimating the construction and operation emissions associated with Alternative 10, which are based on standard techniques using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The air quality and risk impacts are modeled using a "construction zone" approach for new development areas. Existing Project operation sources are modeled as described in the Project Air Quality Technical Report.

The "construction zone" approach represents a conservative air quality modeling approach that identifies areas on the Project Site where construction under Alternative 10 developments is planned. The Alternative 10 development is represented by ten different construction zones located around the Project Site. The construction zones are shown in Figure 2. As a conservative approximation, the maximum construction and operational emissions that may occur within each "construction zone" is evaluated. The construction zones are also used to represent the location of new operational emission sources under Alternative 10.

2.3 Emissions Estimation Approach

2.3.1 Construction Emissions

Alternative 10 construction onsite emissions were estimated using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The construction zones are subdivided into one or more individual building projects, or construction "modules," because each construction zone includes multiple development projects. For purposes of this analysis, it is further assumed that, only one module within any construction zone may be under development at any point in time. The combined impact of construction in multiple construction zones is then evaluated to identify the maximum potential impacts due to Alternative 10 construction. As a conservative assumption, this analysis assumes that maximum construction activity would occur in all construction zones at the same time, even though this is unlikely to occur in practice.

2.3.1.1 Onsite Construction Emissions

Alternative 10 construction onsite emissions were estimated using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. For each "construction zone," the anticipated development mix was established (*e.g.*, office/studio office, studio, entertainment, entertainment retail, amphitheater). An approximate construction schedule was developed that included four main categories (demolition, site preparation, building, finishing). Both maximum daily emissions and average daily emissions were derived for each construction zone based on this information. The construction zones are shown in Figure 2. The details and approximate construction schedules for each "construction zone" are included in Appendix A.

The primary emission sources during construction include combustion sources from construction equipment and fugitive particulate matter emissions. The construction equipment produces emissions of CO, NO_x, SO_x, VOC, PM_{10}, $PM_{2.5}$, and certain TACs. As a conservative representation to evaluate risk impacts, the emission estimates assume that all construction equipment is diesel powered. The emission estimates are based on emission factors as provided by the SCAQMD and USEPA. On-Road emission factors were obtained from the

SCAQMD[5] and are based on an EMFAC2007 model run that is specific to the SOCAB. Off-Road emission factors were also obtained from the SCAQMD[6] and are based on an OFFROAD2007 model run. Additional assumptions within each construction activity included equipment mix, hours of operation and disturbed area. Detailed emission estimate files are included in Appendix A.

2.3.1.2 Offsite Construction Emissions

The Alternative 10 construction offsite emissions were also estimated using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The sources include emissions from worker commuting vehicles, delivery trucksand haul trucks. The emissions were estimated based on mobile source emission factors as provided by the SCAQMD for passenger vehicles, delivery trucks and heavy-heavy duty trucks.[7] Additional assumptions within each construction activity included number of vehicles or trucks and total vehicle miles traveled per vehicle or truck on a per day basis. The detailed spreadsheet emission estimates are included in Appendix A.

2.3.2 Alternative 10 Operational Emissions

2.3.2.1 Onsite Operational Emissions

Emissions from onsite sources are estimated for existing baseline year sources and for new or expanded sources associated with Alternative 10 using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The baseline year against which incremental increases in emissions resulting from Alternative 10 are measured is 2007. The buildout year, when Alternative 10 is expected to be fully developed, is 2030. Increases in emissions due to Alternative 10 are estimated by assuming that future post-Alternative 10 emissions will increase in proportion to the square footage increases of the various land use areas. The baseline conditions are described in the Project Air Quality Technical Report.[8] The same assumptions are used as the basis for this Air Quality Technical Report for Alternative 10.

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[5] SCAQMD. http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html.
[6] SCAQMD. http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html.
[7] S**C**AQMD. http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html.
[8] ENVIRON, 2010. NBC Universal Evolution Plan Air Quality Technical Report, Section 2.3.2. March. (Appendix J of the Draft EIR)

Alternative 10 may lead to an increase in air emissions from onsite sources due to development of new sources and/or increased activity of current sources. As with the proposed Project, emissions directly associated with new development (*e.g.,* natural gas usage with building specific boilers) for Alternative 10 are estimated based on emissions associated with existing sources on the Project Site. Emissions per square foot for existing buildings are estimated and used to estimate emissions from new development for Alternative 10, based on the incremental increases with land uses expected for Alternative 10. For sources where current emission factors are not available for this methodology (*e.g.,* diesel trams, gasoline golf carts), the analysis relied upon accepted emission factors from the South Coast Air Quality Management District and the U.S. Environmental Protection Agency. Derivation of these emission factors and calculations are included in Appendix B.

Potential increases of emissions for Alternative 10 from existing sources are estimated by scaling baseline year emissions for different land uses with a growth factor determined from the planned increase in square footage for Alternative 10 (*see* Table 4). In addition to the growth factors, adjustments are made to the estimated emissions for anticipated equipment updates due to technological advancements, consistent with guidance from the South Coast Air Quality Management District, California Air Resources Board and the U.S. Environmental Protection Agency, as described in Section 2 of the Air Quality Technical Report. For example, emission factors for mobile sources will change from current values due to the more stringent regulatory requirements expected to be in effect by 2030. Emission estimates also incorporate emission reductions for Alternative 10 from demolition of existing buildings or areas or that will otherwise decrease their activity. A flow chart depicting this process of estimating future Alternative 10 build-out emissions is included in Appendix B.

2.3.2.2 Offsite Operational Emissions

Offsite operational emissions associated with the Alternative 10 were estimated based on the Urban EMISsions (URBEMIS) 2007 model (version 9.2.4) program and trip generation data from the Alternative 10 traffic report using a methodology consistent with the Project Air Quality Technical Report and Draft EIR.[9] The URBEMIS default assumptions for trip length and emission factors (based on EMFAC 2007) were used for this analysis. The URBEMIS output files are included in Appendix B.

2.4 Air Quality Dispersion Modeling

Offsite ambient air quality impacts are estimated using air dispersion modeling based on a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The dispersion model and modeling parameters used are described below, which are consistent with the proposed Project analysis, as described in the Project Air Quality Technical Report Section 2.

2.4.1 Dispersion Model

The Industrial Source Complex Short Term model (ISCST3) (Version 02035) is used to estimate offsite ambient air concentrations consistent with that used for the proposed Project analysis.

[9] Gibson Transportation Consulting, Inc. and Raju Associates Inc.

This model, which has been approved for use by USEPA, CARB and SCAQMD, incorporates multiple variables in its algorithms including:

- Meteorological data representative of surface and upper air conditions
- Local terrain data to account for elevation changes
- Physical specification of emission sources including information such as:
  - Location
  - Release height
  - Point source
    - Stack inner diameter
    - Exhaust gas temperature
    - Exhaust gas exit velocity
  - Area source dimensions

Dispersion model averaging times are specified based on the averaging times of ambient standards and the air quality significance thresholds established by the appropriate regulatory agencies. Averaging times include 1-hour, 8-hour, 24-hour, and annual for the various pollutants (see federal and state ambient air quality standards in Table 2 and SCAQMD air quality significance levels in Table 3). Dispersion modeling was performed using the maximum (peak) daily emissions and the complete 365-day meteorological data set to evaluate short-term impacts, thereby ensuring that all meteorological conditions are considered. This approach is conservative, since it assumes that maximum daily emissions could occur on any day, even though there is a low probability that worst-case meteorological conditions would occur at exactly the same time as maximum emissions. Annual average air concentrations are used to estimate cancer risk and chronic noncancer health hazards, and 1-hour average air concentrations are used to estimate acute noncancer health hazards.

The following other options in the ISCST3 model were also selected for use in this analysis. The “bypass calms processing” option was selected based on the use of SCAQMD meteorological data and SCAQMD Risk Assessment Procedures.[10] The calms processing routine excludes calm hours when calculating averages. For construction fugitive dust emissions, the plume depletion option was not used as a conservative approach.[11] The plume depletion option accounts for the settling of fugitive dust based on particle size.

2.4.2 Source Characterization

Three different types of emission sources are represented in air dispersion modeling. The three types are:

[10] Available at: www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf. Accessed July, 2012.
[11] SCAQMD, 2008. Final Localized Significance Threshold Methodology. July.

- Point sources
- Area sources
- Volume sources

Point sources have single identifiable points of release, or sources that can be represented as such. A typical point source will have a stack with a defined location. Other sources, however, do not have a single, discrete point of release. Area or volume sources are used to represent these other sources for modeling purposes.

Sources that can be reasonably represented as emitting at a uniform rate over a two-dimensional surface are modeled as area sources. Sources that can be reasonably represented as emitting at a uniform rate from a three-dimensional space are modeled as volume sources. The specific sources used to characterize construction and operation phases are described below and in attached appendices.

Polygon area sources and volume sources covering the planned construction areas were used to represent fugitive emissions and combustion sources, respectively, for the construction modeling. Based on the *Final Localized Significance Threshold Methodology* published by SCAQMD (SCAQMD 2003), area sources (represented as having an initial vertical dimension of one meter) and volume sources (represented as a grid of 10 meter by 10 meter volume sources with a release height of 5 meters) were used to model construction activities. An identical particle size distribution and particle density were used as reported in the SCAQMD Localized Significance Threshold Methodology.[12]

The operational activities were modeled based on the available information for each source. For sources with known locations and with defined emission characteristics *(e.g.,* fixed generators), a point source was used in the air dispersion model. For sources with approximate locations and undefined emission characteristics (*e.g.*, vehicle exhaust), a volume source was used in the air dispersion model. For sources with uncertainty or high variability in location, or with uncertain emission characteristics, area sources were used to conservatively represent the large area where the emission source may emit; as well as to conservatively represent the potential emissions. The new emission sources in the Alternative 10 construction zones were conservatively represented as area sources.

2.4.3 Meteorology

Hourly wind speeds and directions are used in dispersion modeling to predict plume direction and concentration for each hour of the year. Upper air sounding data are used to characterize atmospheric turbulence and mixing. SCAQMD provides ISCST3 model-ready meteorological data sets for use in air quality and risk impact analyses in the SOCAB. SCAQMD's Burbank meteorological data set was selected based on that station's close geographic proximity to the Project Site. The SCAQMD meteorological data set is for the year 1981, which is the only year provided by SCAQMD. Figure 3 depicts the wind rose for these data.

[12] Ibid.

Specifics of the Burbank site are as follows:

- Station ID 51100
- Upper air ID 99999
- Latitude: 118:18:27 and longitude: 34:10:58
- Anemometer height: 10 meters

2.4.4 Land Use

Various land uses surround the Universal City area, including mixed-use commercial and residential uses. The closest residential land uses are located to the east of the Project Site. The US101 (Hollywood) Freeway is located to the south of the Project Site. The Los Angeles River Flood Control Channel is located to the north, with residential and recreational facilities (*i.e.*, golf course) located north of the channel. Lankershim Boulevard is located to the west of the Project Site, with residential areas and the Metro parking lot located past Lankershim Boulevard.

ISCST3 offers the option of using either rural or urban dispersion characteristics. Selection of rural or urban depends on the predominant land use within a three-kilometer radius of the site. SCAQMD recommends that the urban land use option be chosen for this area.[13]

Data specifying terrain elevations of sources and receptors are imported into the model. Elevations are based on Digital Elevation Maps (DEMs) and consist of an array of regularly spaced points on a horizontal plane for which an elevation is specified. DEMs used in this analysis were obtained from the United States Geologic Survey (USGS) and are 7.5-minute quadrangles, spaced at 30 meters by 30 meters.[14] The DEM quadrants covering the modeled area are the Burbank, Beverly Hills, Hollywood and Van Nuys quadrangles.

2.4.5 Receptors

Modeled receptors (points at which ambient concentrations are calculated by the dispersion model) include sensitive receptors surrounding the site represented by a 50-meter grid of regularly spaced receptors. Additional receptors were also placed in locations closest to the Project Site to ensure that maximum impacts were captured. For purposes of the risk assessment, receptors located in residential, worker and recreational areas were identified. Residential areas were defined to be the location of residential units. Worker areas include all types of businesses located near the Project Site. Recreational areas include areas near the Project Site used for recreational purposes (*e.g.*, Weddington Park (South) and Lakeside Golf Club). The locations of all receptors are illustrated on figures in the Appendices. Criteria pollutant impacts were evaluated at receptors consistent with SCAQMD documentation (SCAQMD 2003). Receptor heights were assumed to be one meter based on currently available documentation from SCAQMD (SCAQMD 2003) and Office of Environmental Health Hazard Assessment (OEHHA) (OEHHA 2003).

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[13] www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf
[14] www.webgis.com/terraindata.html

Non-residential sensitive receptors (such as daycare centers, schools, hospitals and other care facilities)[15] that are located near the Project Site were based on that used for the proposed Project. Non-residential sensitive receptor locations were identified from searches of the following online public databases:

- California Community Care Licensing Division (http://ccld.ca.gov/docs/ccld_search/ccld_search.aspx)
- California Department of Education, California School Directory (http://www.cde.ca.gov/re/sd)
- California Office of Statewide Health Planning and Development, Automated Licensing Information and Report Tracking System (http://alirts.oshpd.ca.gov/AdvSearch.aspx)

Figure 4 depicts the locations of the closest non-residential sensitive receptors found. Table 5 lists the closest non-residential sensitive receptors. Receptors analyzed for Alternative 10 were the same as analyzed for the Draft EIR.

2.4.6 Localized CO Impacts

Localized CO concentrations for Alternative 10 are analyzed using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. The SCAQMD recommends that localized CO impacts be evaluated at intersections due to increases in related offsite mobile sources. The SCAQMD recommends performing a localized CO impacts analysis for intersections that change from Level of Service (LOS) C to D as a result of Alternative 10 and for all intersections rated D or worse where the Alternative 10 increases the volume-to-capacity ratio by two percent or more.[16] An evaluation of the intersections based on the traffic estimates show that there are six intersections which fall under the SCAQMD's criteria requiring a more detailed localized CO impact analysis.

Localized CO concentrations for each of the identified intersections are calculated based on a conservative CALINE4 screening procedure developed by the Bay Area Air Quality Management District and accepted by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential localized CO impact. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. The emission factors used in the simplified CALINE4 model are based on EMFAC2007 for the SOCAB. The resulting impacts are compared with adopted federal and state ambient air quality standards.

2.5 Risk Assessment

A Health Risk Assessment (HRA) was conducted consistent with California Environmental Protection Agency's (Cal/EPA's) Air Toxics Hot Spots Program Risk Assessment Guidelines[17]

[15] For purposes of this analysis, retirement homes are included in this grouping of nonresidential sensitive receptors.

[16] SCAQMD. Email communication with Steve Smith (Program Supervisor – CEQA Section). February, 2009.

[17] Cal/EPA 2003. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. August.

and based on risk assessment guidance documents by USEPA,[18] Cal/EPA's Department of Toxic Substances Control (DTSC),[19] and SCAQAMD Rule 1401/1402 risk assessment guidance.[20] The HRA for Alternative 10 was prepared using a methodology consistent with the Project Air Quality Technical Report and Draft EIR. A detailed description of the HRA methodology is included in Appendix C.

ISCST3 modeling was conducted with a stand-alone software package (Trinity BREEZE). Health risk was then estimated either by using toxicity-weighted emissions as inputs to represent TACs emitted from different sources or through post-processing of estimated unit concentrations.

The Chemicals of Potential Concern (COPC) were identified based on the emission inventory for the Alternative 10's construction and operation phases. Toxicity weightings were developed for each COPC based upon State of California-approved toxicity values (cancer unit risk and slope factors and acute and chronic reference exposure levels) as provided in the Hotspots Analysis and Reporting Program (HARP) version 1.4. The toxicity weightings were combined with the dispersion modeling results as appropriate to calculate cancer risk and noncancer acute and chronic hazard indexes.

In any risk evaluation, a number of assumptions are made in order to estimate human exposure and to calculate potential risks. These assumptions may, however, introduce uncertainty in risk calculations. Regulatory guidance requires that conservative assumptions be used to provide an upper-bound estimate of the risk and to avoid underestimating potential health risks. Key assumptions include:

- Identification of Alternative 10-related chemicals
- Estimation of exposure concentrations
- Identification of exposure pathways
- Exposure assumptions
- Chemical toxicity

In all of these cases, conservative assumptions are incorporated into this HRA. For example, risk is calculated for residential exposure using the standard upper-bound assumptions that every resident is exposed for every hour of every day on which construction occurs. It is unlikely that any person will actually be present every construction hour for the entire duration of construction. Similarly for offsite worker exposure, risk is calculated using the standard upper-bound assumption that all offsite workers are exposed to construction emissions continuously every working day (*e.g.*, 250 days as estimated, based on a standard five day work week) for every working hour (*e.g.*, 8 hours as estimated, based on a standard workday). It is

[18] USEPA 1989. Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). USEPA 540/1-89-002, Office of Emergency and Remedial Response, Washington, DC December.
[19] Cal/EPA 1994. Preliminary Endangerment Assessment Guidance Manual. Department of Toxic Substances Control. January.
[20] SCAQMD 2005. Risk Assessment Procedures for Rules 1401 and 212. Version 7.0. July.

unlikely that such exposures actually will occur. Furthermore, for both residential and offsite workers, risks are calculated assuming exposure to outdoor/ambient concentrations, without moving about during the day. Levels of outdoor-generated pollutants are typically higher outdoors than indoors (often significantly). People typically spend more than 90% of their time indoors. People also move from place to place (and often away from Alternative 10 emissions) during the day for commuting, school, shopping or other purposes. For this reason, estimated cancer risks and noncancer hazard indices tend to be upper-bound estimates for their exposure to Alternative 10 related emissions. The actual risk of cancer or noncancer effects is likely to be lower than presented herein.

Health effects of criteria pollutants were evaluated by comparison to the concentration level of the most stringent relevant health-based ambient air quality standard (either NAAQS or CAAQS). Under the Clean Air Act, health-based ambient air quality standards (referred to as primary standards) are required to be established to protect the most sensitive population groups. As such, by definition, the primary standards are health protective for even the most sensitive receptor groups. Since CARB has not assigned a toxicity factor for fugitive dust emissions, fugitive dust was not included in the health risk assessment. But the impacts at sensitive receptors are evaluated by comparing to CEQA significance thresholds, as well as NAAQS and CAAQS.

"Fugitive dust" is atmospheric dust resulting from both natural and anthropogenic disturbance of soil and other granular material. Fugitive dust particles are comprised mainly of soil minerals (*i.e.,* oxides of silicon, aluminum, calcium and iron), but can also consist of sea salt, pollen, spores, etc. The most common regulated forms of particulate matter are known as PM_{10} (particulate matter with a diameter of 10 microns or less in size) and $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or less in size). Common sources of fugitive dust during construction include use of unpaved roads and construction operations.

3 Impacts of Alternative 10 Construction

As described earlier, for construction emissions, the air quality and risk impacts for construction are modeled using a conservative "construction zone" approach for new development areas. The "construction zone" approach uses conservative air quality modeling based on where construction and new Alternative 10 developments are planned. The Alternative 10 development is represented by ten different construction zones located around the Project Site. The construction zones are shown in Figure 2. The combined impact of construction in multiple construction zones is evaluated to identify the maximum potential impacts due to Alternative 10 construction. As a conservative assumption, this analysis assumes that maximum construction activity will occur in all construction zones at the same time, even though this is unlikely to occur in practice.

This section provides the results of the estimated potential impacts from Alternative 10 construction. Maximum and average onsite and offsite daily mass emissions are presented in Section 3.1.1, and potential ambient air quality impacts and health risks are presented in Section 3.1.2. As shown, there will be no new significant construction impacts associated with Alternative 10, as compared to the proposed Project.

3.1 Emissions

The onsite construction emission estimates are based on methodology provided by the SCAQMD. The emission estimates include emissions from activities such as demolition, site preparation, grading, building, and asphalt construction. The primary emission sources include combustion equipment and fugitive dust. An approximate construction schedule was developed for each construction zone based on the land use development of each construction zone. The schedule conservatively represents the potential construction to maximize the potential daily activity. The detailed emission estimates are included in Appendix A.

To evaluate the short-term air quality impacts (*e.g.,* for NO_2 1-hour) the maximum emission rate during the entire construction period for each construction zone was identified and it was assumed that the maximum emission rate from each construction zone would occur at the same time. Since these maximum emission rates occur for relatively short periods of time during the construction schedule for each construction zone, this is a conservative approximation.

The maximum emission rates for each construction zone and each pollutant are shown in Table 6. The average emission rates over the duration of the construction for each construction zone are shown in Table 7. For air dispersion modeling purposes, daily mass emission rates were converted to a gram-per-second emission rate by assuming 10 hours per day of construction. Additional details showing the derivation of the air dispersion modeling emission rates can be found in Appendix D.

The maximum daily offsite construction emissions for each construction zone are shown in Table 8. The average daily offsite construction emissions for each construction zone are shown in Table 9. The maximum offsite construction emissions were estimated for the construction activities for each land use type (*i.e.,* studio, studio office/office, entertainment use, entertainment retail, hotel, amphitheater, parking structures). Based on the anticipated

construction schedule for each construction zone, the maximum offsite daily emissions were estimated by totaling the potential emissions for the various combinations of construction activities. Note that the maximum emissions for each pollutant do not necessarily occur at the same time. Additional details showing these calculations can be found in Appendix A. The average daily offsite emissions were estimated based on the average to maximum ratio of onsite construction emissions.

Based upon the emission estimates for the individual construction zones, the maximum total daily construction emissions (*i.e.*, onsite plus offsite) were estimated. The maximum total daily mass emissions and the average total daily mass emissions are shown in Table 10 and Table 11, respectively. The results show that the maximum construction emissions may exceed SCAQMD significance thresholds for CO, NO_x, VOC, PM_{10}, and $PM_{2.5}$. The maximum construction emissions for SO_x would be less than the significance threshold. The average construction emissions are much lower, and only the NO_x and VOC average daily emissions may exceed the SCAQMD significance thresholds. As shown in Table 10, the maximum construction emissions under Alternative 10 are expected to be similar to or less than the proposed Project.

3.2 Ambient Air Quality and Heath Risks

3.2.1 Ambient Air Quality Impacts for Criteria Pollutants

The maximum ambient air quality impacts for construction criteria pollutant emissions are summarized in Table 12. Results indicate that hypothetical worst-case air quality impacts could exceed SCAQMD air quality significance thresholds for 1-hour and annual NO_2, and 24-hour PM_{10}. Note that the new Federal 1-hour NO_2 standard is 188 $\mu g/m^3$ and the Federal annual NO_2 standard is 100 $\mu g/m^3$. The estimated maximum impact is greater than the Federal 1-hour NO_2 standard and less than the Federal annual NO_2 standard. Results also show that estimated CO, sulfate, 24-hour $PM_{2.5}$, and annual PM_{10} impacts are below SCAQMD thresholds. This analysis incorporates Project Design Features (*e.g.*, fugitive dust control and diesel particulate filters on selected construction equipment) as discussed in Section 5, which are comparable to those proposed for the proposed Project.

The primary construction activities contributing to the maximum estimated impacts are earth moving and fuel combustion (*e.g.*, construction vehicles). The reported short-term impacts (1-hour, 8-hour, 24-hour averages) in Table 12 are in part due to the assumed simultaneous occurrence of maximum construction conditions in all construction zones. It is possible that the simultaneous construction emissions from the construction zones may not even occur and thus the actual impacts would be lower than that reported here. Furthermore, the reported impacts represent the maximum impact from the worst case scenario of the maximum daily construction emissions from each construction zone occurring at the same time. Thus, the impacts during construction of the construction zones are expected to be less than that reported here since the maximum values reported in Table 12 are for the conservative representation of the worst case construction occurring in each construction zone at the same time. As shown in Table 12, the maximum ambient air quality impacts for construction criteria pollutant emissions under Alternative 10 are expected to be similar to or less than the proposed Project.

This analysis incorporates other conservative assumptions that likely overstate actual impacts. For short-term averaging times (*e.g.*, 1-hour, 8-hour, 24-hour), the analysis uses maximum emission rates and evaluates them over all relevant meteorological conditions in the SCAQMD meteorological data set to determine the maximum air quality impact that might occur in any hour, which is the value reported here. Because this analysis assumes that both maximum emissions and worst-hour meteorological conditions occur exactly at the same time (a combination which may not even occur), there is a low probability that the reported maximum impacts will actually occur. Furthermore, the background concentrations assumed for NO_2 are based on the most recent measured NO_2 concentrations. The 2007 AQMP projects that NO_x emissions in the SOCAB will decrease by nearly an order of magnitude by 2030, which suggests that the NO_2 background concentration will also decrease by 2030.[21] A more specific projection of the NO_2 background concentration may show that the estimated NO_2 impacts are less than significant.

3.2.2 Health Risks From Toxic Air Contaminants

The maximum risk impacts from construction TAC emissions are summarized in Table 13. For the acute non-cancer hazard index, the results represent the maximum impacts that may occur with any expected construction zone combination. For the cancer risk and chronic non-cancer hazard index, the results represent the maximum impacts after the buildout of all entitlements for Alternative 10. This approach represents the maximum longterm impact that may occur if all or only part of Alternative 10 is completed. Results indicate that hypothetical worst-case risk impacts are below SCAQMD significance thresholds for cancer risk and for noncancer chronic and acute hazard indices. The primary TACs are diesel particulate matter (DPM) emissions. For acute noncancer risk, the individual TACs in diesel exhaust were evaluated. As shown in Table 13, the maximum estimated risks for construction under Alternative 10 are expected to be similar to or less than the proposed Project.

Table 14 presents the estimated concentrations of PM_{10}, $PM_{2.5}$, and NO_2 at the locations of the closest (and thus most impacted) non-residential sensitive receptors due to construction emissions. The results at the maximum residential and worker locations are reported above. For reference, background concentrations (that is, without Alternative 10) are also shown.

The results show that the estimated incremental impacts for 24-hour PM_{10} and 24-hour $PM_{2.5}$ are below the SCAQMD CEQA significance threshold (10.4 $\mu g/m^3$) at the offsite sensitive receptors. The background plus construction impact may exceed the 1-hour NO_2 CAAQS and NAAQS at offsite non-residential sensitive receptors. The background plus construction impact are below the annual NO_2 CAAQS and NAAQS at offsite sensitive receptors. The background concentration for annual NO_2 is below the level of the NAAQS and just marginally below that of the CAAQS and the background concentration for 1-hour NO_2 is below the CAAQS and NAAQS.

The total PM_{10} and $PM_{2.5}$ concentration (background plus Alternative 10) is also evaluated. Note that the PM_{10} and $PM_{2.5}$ background concentrations may exceed the concentration levels

[21] SCAQMD, 2007. Final 2007 Air Quality Management Plan.

of the most stringent air quality standard for PM_{10} and $PM_{2.5}$ standards (the 24-hour PM_{10} background concentration is below the NAAQS). The total concentration (background plus Alternative 10 increment) would be above the CAAQS for 24-hour PM_{10}, annual PM_{10}, and the NAAQS for 24 hour $PM_{2.5}$ for all offsite non-residential sensitive receptors (see Table 2 for CAAQS and NAAQS). The construction impacts are typically small fractions of the total concentrations.

4 Impacts of Alternative 10 Operations

4.1 Emissions

The maximum and average incremental change in onsite mass daily emissions by source category due to Alternative 10 are summarized in Table 15 and Table 16, respectively.[22] These emission estimates represent the potential increase (or decrease) in emissions due to Alternative 10 based on the demolition of sources, as well as the creation of new sources as compared to baseline conditions. The estimated emissions are based on SCAQMD emission factors for new land use developments (*e.g.*, Hotel) and increases in current emissions based on the square footage increase for the various land use types (*e.g.*, Studio, Studio Office, Office, Entertainment, Entertainment Retail, Amphitheater). The emission estimate methodology is described in Section 2.3.2 and additional details regarding these emission estimates are included in Appendix B.

These emission estimates were adjusted for use in air dispersion modeling. Given the variety of sources and operation schedules, each source was adjusted to a gram-per-second emission rate based on the source specific operating parameters as shown in Appendix E.

The incremental total operational mass daily emissions are summarized in Table 17. The offsite emissions include emissions from all trips generated due to Alternative 10 minus the trips lost due to demolition. A comparison of the incremental total operational mass daily emissions due to Alternative 10 operations to the SCAQMD mass emission thresholds shows that Alternative 10 may exceed significance thresholds for CO and NO_x. As shown in Table 17, the Alternative 10 incremental operational emissions are expected to be similar to or less than the proposed Project.

4.2 Ambient Air Quality and Health Risks

4.2.1 Ambient Air Quality Impacts for Criteria Pollutants

The maximum incremental criteria pollutant impacts from Alternative 10 operations are summarized in Table 18. The primary operational activities that contribute to the estimated impacts are fuel combustion sources. As shown in Table 18, the maximum incremental criteria pollutant concentrations under Alternative 10 are expected to be similar to or less than the proposed Project.

Air quality impacts from operations would not exceed SCAQMD air quality significance thresholds except for the state annual NO_2 threshold. Air quality impacts from operations would not exceed the federal annual NO_2 standard (100 $\mu g/m^3$). The estimated annual NO_2 concentration is primarily due to the background concentrations assumed for NO_2, which

[22] The emission estimates for the future Alternative 10 operations assume that Tram engines and various other onsite vehicles and engines will be upgraded by 2030 based on current offroad engine requirements for 2030. The upgraded engines are expected to have lower combustion emissions (CO, NOx, SOx, PM10, and PM2.5) and to meet best available control technology requirements. Further information about these assumptions is provided in Appendix B and are the same assumptions as included for the proposed Project as discussed in Section IV.H of the Draft EIR on page 1467.

are based on the most recent measured NO_2 concentrations. The impacts due to Alternative 10 contribute to less than 5% of the forecast annual NO_2 level. The 2007 AQMP projects that NO_x emissions in the SOCAB will decrease substantially by 2030.[23] Results also show that estimated 1-hour NO_2, 24-hour PM_{10}, and annual PM_{10}, 24-hour $PM_{2.5}$, CO, and sulfate impacts would be below SCAQMD thresholds and below the 1-hour NO_2 federal standard (188 $\mu g/m^3$).

Table 19 presents the estimated incremental concentrations of PM_{10}, $PM_{2.5}$, and NO_2 at the locations of the closest (and thus most impacted) non-residential sensitive receptors due to operational emissions. For reference, background concentrations (that is, without Alternative 10) are also shown.

The results show that the estimated incremental impacts for 24-hour PM_{10} and 24-hour $PM_{2.5}$ are below the SCAQMD CEQA significance threshold (2.5 $\mu g/m^3$) at offsite non-residential sensitive receptors. The background plus Alternative 10 impact is below the 1-hour NO_2 CAAQS and NAAQS at offsite non-residential sensitive receptors. The background plus Alternative 10 impact is also below the annual NO_2 CAAQS and NAAQS at offsite non-residential sensitive receptors. The background concentration for annual NO_2 is below the level of the NAAQS and just marginally below that of the CAAQS and the background concentration for 1-hour NO_2 is below the CAAQS and NAAQS.

The total PM_{10} and $PM_{2.5}$ concentration (background plus Alternative 10) is also evaluated. Note that the PM_{10} and $PM_{2.5}$ background concentrations may exceed the concentration levels of the most stringent air quality standard for PM_{10} and $PM_{2.5}$ standards (the 24-hour PM_{10} background concentration is below the NAAQS). The total concentration (background plus Alternative 10 increment) is above the CAAQS for 24-hour PM_{10}, annual PM_{10}, and the NAAQS for 24-hour $PM_{2.5}$ for all offsite non-residential sensitive receptors (see Table 2 for CAAQS and NAAQS). The operational impacts are typically a small fraction of the total concentration.

4.2.2 Localized CO Hotspots

As discussed above, localized CO concentrations are calculated based on a conservative screening procedure accepted by the SCAQMD. According to this conservative screening procedure, of the intersections evaluated by the Gibson Transportation Consulting, Inc. and Raju Associates Inc. Transportation Study, six intersections met the SCAQMD criteria for further evaluation.[24] The screening calculations can be found in Appendix F. The results for CO impacts for the future conditions with Alternative 10 are summarized in Table 20. There are no intersections that would exceed the SCAQMD significance thresholds for CO. As shown in Table 20, the localized CO concentrations under future plus Alternative 10 conditions are expected to be similar to or less than the proposed Project.

Furthermore, the evaluation of existing conditions with Alternative 10 also did not show any exceedances of the SCAQMD significance thresholds for CO. Based on the conservative screening procedures described above, four intersections met the SCAQMD criteria for further

[23] SCAQMD, 2007. Final 2007 Air Quality Management Plan.
[24] SCAQMD recommends evaluating intersections with a change in Level of Service from C to D (or worse) and intersections with LOS D or worse where the volume to capacity increases by two percent or more.

evaluation. The results for CO impacts for the existing conditions with Alternative 10 are summarized in Table 21 and Appendix F. There are no intersections that would exceed the SCAQMD significance thresholds for CO. As shown in Table 21, the localized CO concentrations under existing plus Alternative 10 conditions are expected to be similar to or less than the proposed Project.

4.2.3 Health Risks From Toxic Air Contaminants

The maximum incremental offsite risk impacts from Alternative 10 operation TAC emissions are summarized in Table 22. Risk impacts of Alternative 10 operations would not exceed SCAQMD significance thresholds for cancer risk or noncancer chronic or acute hazards. The predominant source of TACs is combustion equipment. As shown in Table 22, the maximum incremental offsite risk estimates from Alternative 10 operations are expected to be similar to or less than the proposed Project.

Table 23 shows that total combined risk of construction and operations would not exceed SCAQMD significance thresholds. This conservative analysis is based on the assumption that a person is located in a single location for the entire construction and a subsequent period of time such that the total assumed exposure duration for each type of receptor is met (*e.g.*, residential receptors for 70 years, workers for 40 years). Note that the analysis includes conservative assumptions, including the use of the SCAQMD meteorological data set and conservative exposure assumptions amongst others, which likely lead to overestimated risks. As a result, the actual risk may be lower than that reported here. As shown in Table 23, the maximum incremental offsite risk estimates from Alternative 10 construction and operations are expected to be similar to or less than the proposed Project.

Table 24 shows the estimated total health risk at non-residential sensitive receptor locations. The cancer and noncancer risks are expected to be below SCAQMD risk thresholds at all offsite non-residential sensitive receptors.

4.2.4 Mid-Alternative 10 Impacts

The development of Alternative 10 through 2030 may lead to a situation where emissions from both construction and operation occur simultaneously. A hypothetical mid-Alternative 10 scenario was identified based on the potential construction schedules. This scenario is conservative because it was developed to maximize the potential air quality impacts based on the likely construction schedules and operations. This section evaluates the mid-Alternative 10 scenario to estimate the potential mass emissions due to construction and operation emissions in the middle of Alternative 10 development.

- The following developments have been constructed:
  - Construction Zone B – Office (550,000 square feet)
  - Construction Zone F – Hotel (450,000 square feet), Entertainment Retail (70,000 square feet)
  - Construction Zone G – Entertainment (185,000 square feet)

- Construction occurs for the development of Construction Zone B (Studio, 55,000 square feet; Studio, 15,000 square feet; parking) and Construction Zone F (Entertainment retail 50,000 square feet)
- The following areas have been demolished:
  - Amphitheater (108,100 square feet)
  - Office (54,594 square feet)

This will be referred to as the mid-Alternative 10 scenario. The estimated onsite and offsite mass daily emissions during this mid-Alternative 10 scenario are shown in Table 25. The mid-Alternative 10 onsite operational emissions are based on the operational estimates described above in Section 2.3.2. The onsite operational emissions were adjusted to represent the incremental increase in emissions due to partial Alternative 10 completion. The offsite emissions are based on emission estimates due to increased vehicle trips due to the new partial Alternative 10 operations, and the offsite construction emissions are the maximum that may occur. The onsite construction emissions are based on the emission estimates described above in Section 2.3.1 and this Scenario. The mid-Alternative 10 Scenario emissions may exceed the SCAQMD significance thresholds for CO, NO_x, and VOC. The mid-Alternative 10 Scenario emissions would be below SCAQMD significance thresholds for PM_{10}, and $PM_{2.5}$, and SO_x. As shown in Table 25, the emission estimates for the mid-Alternative 10 scenario are expected to be similar to or less than the proposed mid-Project scenario.

The air concentration results based on the onsite emissions for the mid-Alternative 10 evaluation are summarized in Table 26. The results show that the maximum impacts may exceed SCAQMD thresholds for 24-hour PM_{10}, 24-hour $PM_{2.5}$, and 1-hour and annual NO_2. Note that the new federal 1-hour NO_2 standard is 188 $\mu g/m^3$ and the federal annual NO_2 standard is 100 $\mu g/m^3$. The estimated impacts are greater than the federal 1-hour NO_2 standard and less than the Federal annual NO_2 standard. Results show that the maximum impacts for CO and sulfates are below SCAQMD thresholds. This analysis incorporates mitigating Project Design Features (*e.g.*, fugitive dust control and diesel particulate filters on selected construction equipment) as discussed in Section 5.

The chronic and noncancer risk impacts are also reported in Table 26 for the mid-Alternative 10 scenario. The results show that the mid-Alternative 10 scenario would not result in any chronic and acute noncancer impacts. Given the intermediate and temporary nature of this scenario, the cancer risk was not evaluated. The cancer risk impacts of the total Project are reported in the prior section. As shown in Table 26, the air concentration and risk estimates for the mid-Alternative 10 scenario are expected to be similar to or less than the proposed mid-Project scenario.

Table 27 presents the estimated non-residential concentrations of PM_{10}, $PM_{2.5}$, and NO_2 at the locations of the closest (and thus most impacted) sensitive receptors (listed in Table 5 and shown in Figure 4) due to mid-Alternative 10 emissions. The results at the maximum residential and worker locations are reported in Table 26. For reference, background concentrations (that is, without Alternative 10) are also shown.

The results show that the estimated incremental impacts for 24-hour PM_{10} and 24-hour $PM_{2.5}$ are below the SCAQMD CEQA significance threshold for construction (10.4 $\mu g/m^3$) and for operations (2.5 $\mu g/m^3$) at the offsite non-residential sensitive receptors. The background plus mid-Alternative 10 impact would also be below the 1-hour and annual NO_2 SCAQMD CEQA significance threshold at offsite sensitive receptors. Note that the new federal 1-hour NO_2 standard is 188 $\mu g/m^3$ and the federal annual NO_2 standard is 100 $\mu g/m^3$. The background plus mid-Alternative 10 impact is below the annual NO_2 CAAQS and the NAAQS at offsite sensitive receptors. The background concentration for annual NO_2 is below the level of the NAAQS and marginally below that of the CAAQS. The background concentration for 1-hour NO_2 is below the CAAQS and NAAQS.

The total PM_{10} and $PM_{2.5}$ concentration (background plus Project) is also evaluated. Note that the PM_{10} and $PM_{2.5}$ background concentrations may exceed the concentration levels of the most stringent air quality standard for PM_{10} and $PM_{2.5}$ standards (the 24-hour PM_{10} background concentration is below the NAAQS). Thus, the total concentration (background plus Project increment) would be above the CAAQS for 24-hour PM_{10}, annual PM_{10}, and the NAAQS for 24-hour $PM_{2.5}$ for all offsite non-residential sensitive receptors (see Table 2 for CAAQS and NAAQS). Note that the project contribution is typically a small fraction of the total concentrations.

5 Project Design Features (Alternative 10)

The air quality analysis includes the following assumptions that reduce potential Alternative 10 impacts. These Project Design Features are comparable to Project Design Features identified for the proposed Project.

5.1 Construction Project Design Features (Alternative 10)

Specific assumptions for construction activities include the following:

- Compliance with SCAQMD Rule 403 regarding fugitive dust. The construction emission estimates include a fugitive dust control factor, which is a conservative representation of the level of fugitive dust control expected through compliance with SCAQMD Rule 403. Specifically, the Applicant or its successor shall implement control measures in accordance with SCAQMD Rule 403. The Applicant or its successor shall include in construction contracts the fugitive dust control measures in accordance with SCAQMD Rule 403, with construction controls being at least as effective as the following:
  - Watering active construction areas at least twice daily to minimize fugitive dust emissions[25]
  - Maintaining soil stabilization of inactive construction areas with exposed soil via water, non-toxic soil stabilizers, or replaced vegetation
  - Covering all haul trucks or maintaining at least six inches of freeboard
  - Suspending earthmoving operations or increasing watering to meet Rule 403 criteria if winds exceed 25 mph
  - Minimizing track-out emissions using the allowable methods and,
  - Limiting vehicle speeds to 15 miles per hour or less in staging areas and on haul roads
- Paving of Haul Roads for Vertical Construction. Alternative 10 construction emission estimates assume that the haul roads will be paved (temporary or permanent paving) during the vertical construction time period.
- Diesel-emitting construction equipment greater than 200 horsepower shall use diesel particulate filters having 85% removal efficiency based on California Air Resources Board verified technologies.[26]

5.2 Operational Project Design Features (Alternative 10)

New onsite facility NO_x emissions shall be minimized through the use of emission control measures (*e.g.*, use of best available control technology for new combustion

[25] Note that the control efficiency of watering is dependent on numerous variables such as soil/ground conditions, temperature and vehicle travel specifics. For unpaved roads, increased frequency and/or water amounts are expected to improve the control efficiency.

[26] Based on CARB verified technologies. Available at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm. Accessed: July, 2012.

sources, such as boilers and water heaters) as required by South Coast Air Quality Management District Regulation XIII, New Source Review.

6 Siting Evaluation for Sensitive Receptors

Alternative 10 proposes the expansion of an onsite childcare center. Childcare centers are generally considered "sensitive receptors," meaning that they are particularly sensitive to adverse effects associated with environmental impacts (including air pollution). This section provides an overview of the health risks associated with the siting of sensitive receptors and mitigating factors that will help reduce the impact over the duration of Alternative 10. Specifically, this section provides an overview of:

- Health risks within the air basin
- SCAQMD CEQA Handbook land use siting criteria
- Health risks associated with emissions from Alternative 10 Site operations
- CARB land use siting criteria

6.1 Health Risks within the Air Basin

The health risks within the air basin are discussed in the Project Air Quality Technical Report.[27]

6.2 SCAQMD CEQA Handbook Land Use Siting Criteria

This section provides an overview of the SCAQMD CEQA Handbook land use siting criteria for sensitive receptors. Childcare centers are generally considered "sensitive receptors," meaning that they are particularly sensitive to adverse effects associated with environmental impacts (including air pollution).

The SCAQMD CEQA Handbook[28] siting criteria are discussed below.

Will a sensitive receptor be located within a quarter-mile of an existing facility that emits toxic air contaminants?

Figure 5 shows existing TAC-emitting sources located within ¼ mile of the Project Site where the childcare center may be located. The SCAQMD FIND web tool was used to search for facilities with known TAC emissions inside this ¼-mile radius. Equipment associated with Universal Studios operations may also impact the childcare center. These operations include diesel combustion sources and sources associated with theme park operations. The sources of TAC emissions are evaluated further below.

Will a sensitive receptor be located adjacent to a congested roadway or in an area with high background concentrations of CO?

An analysis of CO "hotspots" showed that Alternative 10 would not cause any significant CO impacts at the most congested intersections. These areas are typically the location of the highest CO concentrations due to roadway traffic.

[27] ENVIRON, 2010. NBC Universal Evolution Plan Air Quality Technical Report, Section 6. March. (Appendix J of the Draft EIR)
[28] SCAQMD CEQA Handbook (1993), pg. 4-12.

Will a sensitive receptor be located downwind of an existing source of odors, or will a proposed use associated with odors be located upwind of an existing sensitive receptor?

Information on odors is provided in the Draft EIR, pages 1506 to 1508. Potential odor impacts associated with Alternative 10 are expected to be similar to or less than the Project and therefore are expected to be less than significant.

6.3 Health Risks Associated with Emissions from Nearby Sources of TACS

The following sections discuss the health risks at the location for the childcare center due to nearby sources of TACS. Specifically, the following sections address the health risks due to emissions from Project Site operations.

6.3.1 Risk Impact Analysis from Onsite TAC Emissions

To evaluate the potential risk impact of Alternative 10 construction and operational emissions onto the existing childcare center, a modeling and risk assessment was conducted. The Alternative 10 construction and operational emissions as described in Section 2 were used to evaluate the potential impacts onto the childcare center. The modeled emission sources included all current sources and new development construction zones as identified previously. Receptors were included at the existing childcare center location.

The cancer risk for children at the proposed childcare center due to Alternative 10 construction and operations is expected to be below a 10 in a million risk for children at the center. This risk estimate is based on the conservative exposure assumption that a child could be at this location for 9 years and 10 hours per day. The maximum risk (cancer, chronic and acute noncancer) at the onsite childcare center is summarized in Table 28. As shown in Table 28, the maximum estimated risks for Alternative 10 at the childcare center are expected to be similar to or less than the proposed childcare center evaluated in the proposed Project.

6.4 CARB Air Quality and Land Use Handbook

CARB published the Air Quality and Land Use Handbook on April 28, 2005 (the "CARB Handbook"), to serve as a general guide for considering health effects associated with siting sensitive receptors proximate to sources of toxic air contaminants (TACs), including freeways. The CARB Handbook explicitly states that it is advisory in nature and that local land use decisions do not have to be consistent with its recommendations.[29] Some examples of CARB's recommendations include avoiding siting sensitive receptors within: (a) 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (b) 1,000 feet of transport distribution centers; and (c) 300 feet of any dry cleaning operation using perchloroethylene or within 500 feet for a dry cleaning operation with two or more machines. Alternative 10 does not include siting residential development or other sensitive receptors within the distances for which the CARB Handbook recommends additional analysis.

[29] CARB Handbook. Introductory letter from then Interim Chairman of CARB, Ms. Barbara Riordian.

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Tables

Table 1. Comparison of Net New Square Footage

Land Use	Net New Project Development	Net New Alternative 10 Development
Studio	307,949	307,949
Studio Office[a]	437,326	647,320
Office	495,406	495,406
Entertainment	145,655	337,895
Entertainment Retail	39,216	39,216
Amphitheater	-50,600	-50,600
Hotel[b,c]	450,000	900,000
Neighborhood Retail and Community-Serving Commercial	180,000	0
Residential	2937 units	0 units
Total		
Commercial	2,004,952	2,677,186
Residential	2937 units	0 units

Notes:

a. Studio Office uses under Alternative 10 include a 5,000 square foot expansion of an existing child care center.

b. The hotel under the Project includes up to 500 hotel guest rooms and related hotel facilities.

c. The hotel under Alternative 10 includes up to 1,000 hotel guest rooms and related hotel facilities.

Table 2. Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard[1]	Federal Standard[2]	SCAQMD Attainment Status	
				California Standard[3]	Federal Standard[4]
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m^3)	Revoked	Nonattainment	---
	8 hour	0.07 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	Nonattainment	Nonattainment
	Annual	20 µg/m^3	Revoked	Nonattainment	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	24 hour	---	35 µg/m^3	---	Nonattainment
	Annual	12 µg/m^3	15 µg/m^3	Nonattainment	Nonattainment
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Attainment	Attainment
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	Nonattainment	--
	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	--	Attainment
Lead (Pb)	30 day average	1.5 µg/m^3	--	Nonattainment	---
	Rolling 3-month average	--	0.15 µg/m^3	---	---
Sulfur Dioxide (SO_x)	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (197 µg/m^3)	Attainment	---
	3 hour[5]	---	0.5 ppm (1300 µg/m^3)	---	Attainment
	24 hour	0.04 ppm (105 µg/m^3)	--	Attainment	---
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 µg/m^3)	---	Unclassified	---
Vinyl Chloride	24 hour	0.01 ppm (26 µg/m^3)	---	Unclassified	---
Sulfates	24 hour	25 µg/m^3	---	Attainment	---
Visibility-Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70 percent)	---	Unclassified	---

1. California standards as listed on CARB website (http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm).
2. Federal Standards as listed on USEPA website (http://epa.gov/air/criteria.html).
3. California standard attainment status as listed on CARB website (http://www.arb.ca.gov/desig/adm/adm.htm).
4. Federal standard attainment status as listed on USEPA websites (www.epa.gov/air/oaqps/greenbk/index.html and www.arb.ca.gov/desig/adm/adm.htm).
5. This is a secondary standard.

Table 3. SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction	Operation
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Pb	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and noncarcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer burden >0.5 excess cancer cases ≥ 1 in 1 million) Chronic and Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT CO_2eq for industrial facilities	
Ambient Air Quality for Criteria Pollutants		
NO_2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10} 24-hour average annual average	 10.4 µg/m^3 (construction) & 2.5 µg/m^3 (operation) 1 µg/m^3	
$PM_{2.5}$ 24-hour average	 10.4 µg/m^3 (construction) & 2.5 µg/m^3 (operation)	
SO_2 1-hour average 24-hour average	 0.25 ppm (state) & 0.075 ppm (federal - 99th percentile) 0.04 ppm (state)	
(Sulfate) 24-hour average	25 µg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 (state) 0.15 µg/m^3 (federal) 1.5 µg/m^3 (federal)	

AQMD, 2011. SCAQMD Air Quality Significance Thresholds. March. Available at: http://www.aqmd.gov/ceqa/handbook/signthres.pdf. Accessed: June, 2012.

Table 4. Representative Growth Factors Used to Estimate Onsite Studio, Entertainment, and Business Areas Emissions Increases in Build-out Year 2030

Land Use	Existing Development[a]	Demolition[a]	Gross New Development[a]	Net New Development[a]	Total[a]	Growth Factor[b]	Demolition Factor[c]
Entertainment Retail	656,144	30,784	70,000	39,216	695,360	1.06	0.95
Amphitheater	110,600	110,600	60,000	-50,600	60,000	0.54	0.00
Entertainment Use	775,132	107,105	445,000	337,895	1,113,027	1.44	0.86
Studio	1,228,120	185,051	493,000	307,949	1,536,069	1.25	0.85
Studio Office/Office	1,405,975	152,274	1,295,000	1,142,726	2,548,701	1.81	0.89
Hotel	0	0	900,000	900,000	900,000	-	-
All areas	4,175,971	585,814	3,263,000	2,677,186	6,853,157	1.64	0.86
All areas except Entertainment Retail	3,519,827	555,030	3,193,000	2,637,970	6,157,797	1.75	0.84
Entertainment Center	1,431,276	137,889	515,000	377,111	1,808,387	1.26	0.90
All areas except Hotel	4,175,971	585,814	2,363,000	1,777,186	5,953,157	1.43	0.86

Notes:

a. Provided by NBCUniversal.

b. Growth factor has been calculated as the total area divided by the area of existing development.

c. Demolition factor has been calculated as one minus (the area of demolition divided by the area of existing development).

Table 5. List of Closest Non-residential Sensitive Receptors

Figure ID	Facility Name	Facility Address		
1	St. Charles Barromeo Catholic School	10850 Moorpark Street	North Hollywood	91602
2	Berence Carlson Home Hospital School	10952 Whipple Street	North Hollywood	91602
3	The Inn on the Boulevard Retirement Hotel	11201 Ventura Boulevard	Studio City	91604
4	Oakwood Elementary School	11230 Moorpark Street	North Hollywood	91602
5	Studio City Rehabilitation Center	11429 Ventura Boulevard	Studio City	91604
6	Imperial Care Center	11441 Ventura Boulevard	Studio City	91604
7	Bright Horizons Burbank	115 North Hollywood Way	Burbank	91505
8	Burbank Montessori Academy	217 North Hollywood Way	Burbank	91505
9	Evergreen Retirement	225 North Evergreen	Burbank	91505
10	R.L. Stevenson Elementary School	3333 Oak Street	Burbank	91505
11	Bright Horizons - Warner Bros.	3901 West Oak Street	Burbank	91505
12	Carpenter Avenue Elementary School/YMCA Metro LA	3909 Carpenter Avenue	Studio City	91604
13	Kraft Home	4162 Kraft Avenue	Studio City	91604
14	Rio Vista Elementary School	4243 Satsuma Avenue	North Hollywood	91602
15	Vistas	4301 Cahuenga Boulevard	North Hollywood	91602
16	Jokyo Guest Home II	4607 Willowcrest Avenue	Toluca Lake	91602
17	Toluca Crossroads	4814 Cahuenga Boulevard	North Hollywood	91601
18	Toluca Lake Elementary School/YMCA Metro LA	4840 Cahuenga Boulevard	North Hollywood	91601
19	Valley View Elementary School	6921 Woodrow Wilson Drive	Los Angeles	90068
20	American Lutheran Elementary School	755 North Whitnall Highway	Burbank	91505

Table 6. Maximum Onsite Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Onsite Daily Emissions (lb/day)									
	CO	NO_x	SO_x	VOC	PM_{10} (Combustion)	PM_{10} (Fugitive)	PM_{10}	$PM_{2.5}$ (Combustion)	$PM_{2.5}$ (Fugitive)	$PM_{2.5}$
A	37.9	77.3	0.1	9.4	3.9	3.9	7.8	3.6	0.8	4.4
B	88.4	81.7	0.1	14.9	4.2	3.9	8.1	5.7	1.2	7.0
C	39.7	81.9	0.1	10.0	4.2	3.9	8.1	3.8	0.8	4.7
D	79.6	164.5	0.2	20.0	8.4	7.8	16.2	7.7	1.6	9.3
E	40.0	83.0	0.1	10.0	4.2	3.9	8.1	3.9	0.8	4.7
F	40.1	83.2	0.1	10.1	4.2	3.9	8.1	3.9	0.8	4.7
G	99.2	204.4	0.2	24.9	10.4	9.7	20.1	9.6	2.0	11.6
H	39.8	82.0	0.1	10.0	4.2	4.0	8.2	3.8	0.8	4.7
I	24.5	62.0	0.1	5.6	3.4	2.0	5.3	3.1	0.4	3.5
J	20.0	41.4	0.0	5.0	2.1	2.0	4.1	1.9	0.4	2.4

Table 7. Average Onsite Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Onsite Daily Emissions (lb/day)									
	CO	NO_x	SO_x	VOC	PM_{10} (Combustion)	PM_{10} (Fugitive)	PM_{10}	$PM_{2.5}$ (Combustion)	$PM_{2.5}$ (Fugitive)	$PM_{2.5}$
A	9.4	21.1	0.02	2.6	1.1	0.4	1.4	1.0	0.1	1.1
B	17.8	28.1	0.03	4.2	1.5	0.5	1.9	1.6	0.2	1.8
C	13.0	30.9	0.03	4.0	1.6	0.6	2.2	1.5	0.1	1.6
D	30.0	69.0	0.07	8.7	3.6	0.7	4.3	3.3	0.1	3.4
E	11.3	25.2	0.02	3.1	1.3	0.6	1.9	1.2	0.1	1.3
F	22.7	52.9	0.05	6.9	2.8	0.6	3.4	2.6	0.1	2.7
G	26.1	59.1	0.05	7.0	3.1	0.9	4.0	2.8	0.2	3.0
H	15.2	35.1	0.03	4.4	1.8	0.4	2.2	1.7	0.1	1.8
I	8.7	20.1	0.02	2.4	1.1	0.2	1.3	1.0	0.0	1.0
J	7.2	16.6	0.02	2.1	0.9	0.2	1.0	0.8	0.3	1.1

Table 8. Maximum Offsite Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Offsite Daily Emissions (lb/day)					
	CO	NO_x	SO_x	VOC	PM_{10}	$PM_{2.5}$
A	52.2	124.2	0.15	11.3	6.0	5.1
B	72.2	170.7	0.21	15.6	8.3	7.0
C	48.2	113.8	0.14	10.4	5.5	4.7
D	48.2	113.8	0.14	10.4	5.5	4.7
E	29.6	87.4	0.10	7.2	4.2	3.6
F	71.0	197.1	0.22	16.7	9.5	8.0
G	96.3	227.6	0.28	20.8	11.0	9.3
H	24.1	56.9	0.07	5.2	2.8	2.3
I	13.7	27.6	0.03	2.3	1.3	1.1
J	10.2	27.6	0.03	2.3	1.3	1.1

Table 9. Average Offsite Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Offsite Daily Emissions (lb/day)					
	CO	NO_x	SO_x	VOC	PM_{10}	$PM_{2.5}$
A	38.2	90.6	0.11	8.2	4.4	3.7
B	50.9	123.3	0.15	11.0	6.0	5.0
C	48.2	113.8	0.14	10.4	5.5	4.7
D	33.2	73.4	0.09	6.6	3.5	3.0
E	22.6	63.9	0.07	5.3	3.1	2.6
F	39.7	103.7	0.12	9.0	5.0	4.2
G	36.4	91.6	0.11	8.1	4.4	3.7
H	15.3	38.1	0.04	3.3	1.8	1.6
I	11.9	25.9	0.03	2.1	1.2	1.1
J	10.2	27.6	0.03	2.3	1.3	1.1

Table 10. Maximum Total Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Offsite Daily Emissions (lb/day)					
	CO	NO_x	SO_x	VOC	PM_{10}	$PM_{2.5}$
A	90	202	0.2	21	14	10
B	161	252	0.3	31	16	14
C	88	196	0.2	20	14	9
D	128	278	0.3	30	22	14
E	70	170	0.2	17	12	8
F	111	280	0.3	27	18	13
G	195	432	0.5	46	31	21
H	64	139	0.1	15	11	7
I	38	90	0.1	8	7	5
J	30	69	0.1	7	5	3
Maximum Concurrent Construction (All Zones)[a]	975	2,108	2	222	150	104
SCAQMD Thresholds	550	100	150	75	150	55
Above Threshold?[b]	**Yes**	**Yes**	No	**Yes**	**Yes**	**Yes**
Comparison to Draft EIR						
Project Maximum Concurrent Construction Emissions (1-phase)[c]	1,769	2,326	4	306	286	106
Project Maximum Concurrent Construction Emissions (3-phase)[c]	1,700	3,105	5	331	448	179

Note:

a. The sum of the values may differ from what is shown due to rounding.

b. PM_{10} is equal to the SCAQMD significance threshold but conservatively characterized as above the threshold.

c. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. Project maximum concurrent construction emissions are from Table 39 and 41 of the Project Air Quality Technical Report and Tables 111 and 112 of Section IV.H of the Draft EIR.

Table 11. Average Total Mass Daily Emissions for Alternative 10 Construction (lb/day)

Zone	Maximum Offsite Daily Emissions (lb/day)					
	CO	NO_x	SO_x	VOC	PM_{10}	$PM_{2.5}$
A	48	112	0.1	11	6	5
B	69	151	0.2	15	8	7
C	61	145	0.2	14	8	6
D	63	142	0.2	15	8	6
E	34	89	0.1	8	5	4
F	62	157	0.2	16	8	7
G	63	151	0.2	15	8	7
H	31	73	0.1	8	4	3
I	21	46	0.05	5	3	2
J	17	44	0.05	4	2	2
Maximum Concurrent Construction (All Zones)	468	1,110	1	112	60	50
SCAQMD Thresholds	550	100	150	75	150	55
Exceed Thresholds?	No	**Yes**	No	**Yes**	No	No

Table 12. Maximum Ambient Air Quality Impacts - Alternative 10 Construction

Alternative 10 + Background[a, c]							Comparison to Draft EIR	
Pollutant	**Averaging Time**	**Maximum Concentration from Alternative 10 Emissions ($\mu g/m^3$)**	**Background Pollutant Concentration ($\mu g/m^3$)**	**Maximum Alternative 10 + Background Concentration ($\mu g/m^3$)**	**SCAQMD Threshold ($\mu g/m^3$)**	**Above SCAQMD Threshold?**	**Maximum Project (1-Phase) + Background Concentration ($\mu g/m^3$)**	**Maximum Project (3-Phase) + Background Concentration[e] ($\mu g/m^3$)**
NO_2[b]	1-hour	280	164	444	339	**Yes**	446	456
	Annual	8	55	63	57	**Yes**	67	70
CO	1-hour	668	4,580	5,248	23,000	No	5,135	5,173
	8-hour	168	3,893	4,061	10,000	No	4,038	4,043
Incremental Analysis[a]							**Maximum Concentration from Project (1-Phase) Emissions ($\mu g/m^3$)**	**Maximum Concentration from Project (3-Phase) Emissions[e] ($\mu g/m^3$)**
PM_{10}	24-hour	13.8	N/A	N/A	10.4	**Yes**	93	96
	Annual	0.7	N/A	N/A	1.0	No	11	7
$PM_{2.5}$	24-hour	8.6	N/A	N/A	10.4	No	21	21
Sulfates[d]	24 hr	0.002	N/A	N/A	25	No	0.005	0.004

Notes:

N/A - Not Applciable

a. PM10, PM2.5 and sulfates are incremental impacts from Alternative 10 emissions. Impacts for NO2 and CO are added to background pollutant concentrations and compared to thresholds.

b. NO2 concentration is based on a tiered approach including an ozone limiting methodology. Primary NO2 emissions are assumed to be 5.3 % of NOx emissions based on the lowest NO2/NOx value as cited in the SCAQMD LST methodology, Table 2-4 page 2-9. The conversion of NOx to NO2 is assumed to be limited by the available ozone.

c. Maximum from East San Fernando Valley monitor in 2007 for NO_2 and in 2005 for CO based on most recent data availability. Note that the 2007 AQMP projects that NO_x emissions in the SOCAB will decrease by nearly an order of magnitude by 2030 (see Chapter 5, Figure 5-16). Given these projections for NO_x emissions, it is likely that the background NO_2 concentrations will also decrease by 2030.

d. Sulfates estimated by assuming 2% of SOx emissions are sulfate. It is assumed that maximally impacted receptors are located in close proximity of sources, and thus atmospheric conversion from SOx to sulfates is assumed to be minimal.

e. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. Maximum Project concentrations are from Table 43 and 44 of the Project Air Quality Technical Report and Tables 116 and 117 of Section IV.H of the Draft EIR.

Table 13. Maximum Health Risk Impacts Associated with TAC Emissions - Alternative 10 Construction

Health Endpoint	Receptor	Maximum Estimated Incremental Risk - Alternative 10 (Risk in 1 million)	SCAQMD Threshold (Risk in 1 million)	Comparison to Draft EIR	
				Maximum Estimated Incremental Risk - Project 1-Phase (Risk in 1 million)	Maximum Estimated Incremental Risk - Project 3-Phase[c] (Risk in 1 million)
Cancer Risk[a]	Resident	1.3	10	3.1	3.6
	Worker	3.9	10	6.7	4.5
	Recreational	0.01	10	<0.01	0.01
Health Endpoint[b]	**Receptor**	**Maximum Estimated Incremental Risk - Alternative 10 (Hazard Index)**	**SCAQMD Threshold (Hazard Index)**	**Maximum Estimated Incremental Risk - Project 1-Phase (Hazard Index)**	**Maximum Estimated Incremental Risk - Project 3-Phase[c] (Hazard Index)**
Chronic Noncancer Hazard Index	Resident	0.02	1.0	0.01	0.01
	Worker	0.02	1.0	0.02	0.02
	Recreational	0.01	1.0	0.01	0.01
Acute Noncancer Hazard Index	Resident	0.2	1.0	0.2	0.2
	Worker	0.2	1.0	0.1	0.2
	Recreational	0.2	1.0	0.2	0.2

Notes:

a. The cancer risk was estimated assuming an exposure duration based on the estimated duration of construction.

b. The chronic and acute noncancer hazard indices were based on the chronic REL for Diesel Particulate Matter and acute noncancer RELs as listed in the HARP software for the speciated compounds for diesel exhaust.

c. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project risk estimates are from Tables 46 and 47 of the Project Air Quality Technical Report and Tables 121 and 122 of Section IV.H of the Draft EIR.

Table 14. Maximum Ambient Air Quality Impacts at Non-residential Sensitive Receptors – Alternative 10 Construction ($\mu g/m^3$)

Receptor Location	PM_{10}	PM_{10}	$PM_{2.5}$	NO_2	NO_2
	24-hour	Annual	24-hour	1-hour	Annual
10850 Moorpark Street	1.3	0.02	1.2	183	0.4
10952 Whipple Street	1.4	0.02	1.3	189	0.4
11201 Ventura Boulevard	0.5	0.01	0.4	94	0.1
11230 Moorpark Street	0.7	0.01	0.6	119	0.2
11429 Ventura Boulevard	0.3	0.002	0.3	68	0.1
11441 Ventura Boulevard	0.3	0.002	0.3	68	0.1
115 North Hollywood Way	1.0	0.02	0.9	168	0.4
217 North Hollywood Way	0.9	0.01	0.8	145	0.3
225 North Evergreen	1.0	0.02	1.0	169	0.5
3333 Oak Street	0.6	0.01	0.6	108	0.2
3901 West Oak Street	0.6	0.01	0.6	132	0.3
3909 Carpenter Avenue	0.1	0.001	0.1	27	0.03
4162 Kraft Avenue	0.4	0.005	0.3	89	0.1
4243 Satsuma Avenue	1.7	0.02	1.6	215	0.5
4301 Cahuenga Boulevard	1.9	0.03	1.7	216	0.8
4607 Willowcrest Avenue	0.8	0.01	0.8	126	0.4
4814 Cahuenga Boulevard	0.6	0.01	0.6	109	0.3
4840 Cahuenga Boulevard	0.6	0.01	0.6	105	0.3
6921 Woodrow Wilson Drive	1.0	0.01	1.0	210	0.1
755 North Whitnall Highway	0.4	0.01	0.4	100	0.2
Background (without Alternative 10)[a]	109	34	56.5	164	55
SCAQMD Threshold[b]	10.4	1	10.4	339	57

Notes:

a. Background values based on maximum values reported at the East San Fernando Valley monitor in 2007.

b. Thresholds for PM10 and PM2.5 are incremental impacts from project emissions. Impacts for NO2 are added to background pollutant concentrations and compared to the threshold. CO and sulfates were not shown since the maximum offsite impacts were less than SCAQMD CEQA significance thresholds.

Table 15. Onsite Alternative 10 Operational Emissions – Annual Average (lbs/day)

Source Category	CO (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	VOC (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Architectural Paint	NR	NR	NR	19.0	NR	NR
Attraction Special Effects - LPG	-0.6	-2.4	-0.9	-0.05	-0.1	-0.1
Boilers, Ovens, and other Natural Gas use *	-1.5	-1.8	-0.02	-0.2	-0.3	-0.3
Cooling Towers *	NR	NR	NR	NR	-0.2	NR
Delivery Trucks	-4.1	-1.5	NR	-0.5	0.5	0.03
Emergency Generators - Natural Gas *	NR	NR	NR	NR	NR	NR
Emergency Generators/ICEs - Diesel *	0.1	0.4	0.01	0.03	0.04	0.04
Film cleaners	NR	NR	NR	NR	NR	NR
Fuel Storage Tank	NR	NR	NR	1.5	NR	NR
Heaters - LPG	0.05	0.2	0.1	NR	NR	NR
Miscellaneous Materials	NR	NR	NR	-56.9	0.1	0.1
Other Onsite Mobile Sources - Diesel	-0.3	-0.5	NR	-0.3	-0.1	-0.1
Other Onsite Mobile Sources - Gasoline/Propane	108.3	-0.5	0.02	-15.0	1.3	0.1
Paint Booth	NR	NR	NR	1.6	0.2	0.2
Portable Generators - Diesel	-0.7	-3.3	NR	-0.2	-0.1	-0.1
Steam Cleaners and Pressure Washers	3.9	0.2	0.1	0.2	0.0	0.0
Technicolor	-2.6	-3.6	-0.1	-22.7	-2.4	-2.1
Trams - Diesel	15.1	-30.7	0.0	4.5	0.9	0.3
Water Purification *	NR	NR	NR	-3.5	NR	NR
Welding	NR	NR	NR	NR	0.1	0.1
New Frontlot Development	12.6	31.9	1.4	2.3	2.4	1.6
Total Incremental Change in Emissions	130	-12	1	-70	2	-0.2

NR - No Emissions Reported

Table 16. Onsite Alternative 10 Operational Emissions – Maximum Daily (lbs/day)

Source Category	CO (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	VOC (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Architectural Paint	NR	NR	NR	20.9	NR	NR
Attraction Special Effects - LPG	-0.7	-2.6	-0.9	-0.1	-0.1	-0.1
Boilers, Ovens, and other Natural Gas use *	-1.6	-1.9	-0.02	-0.3	-0.3	-0.3
Cooling Towers *	NR	NR	NR	NR	-0.2	NR
Delivery Trucks	-4.5	-1.7	NR	-0.6	0.6	0.03
Emergency Generators - Natural Gas *	NR	NR	NR	NR	NR	NR
Emergency Generators/ICEs - Diesel *	0.1	0.5	0.01	0.04	0.05	0.05
Film cleaners	NR	NR	NR	NR	NR	NR
Fuel Storage Tank	NR	NR	NR	1.6	NR	NR
Heaters - LPG	0.1	0.2	0.1	NR	NR	NR
Miscellaneous Materials	NR	NR	NR	-62.6	0.1	0.1
Other Onsite Mobile Sources - Diesel	-0.3	-0.6	NR	-0.3	-0.1	-0.1
Other Onsite Mobile Sources - Gasoline/Propane	119.1	-0.5	0.02	-16.5	1.4	0.1
Paint Booth	NR	NR	NR	1.8	0.2	0.2
Portable Generators - Diesel	-0.8	-3.7	NR	-0.2	-0.1	-0.1
Steam Cleaners and Pressure Washers	4.3	0.3	0.1	0.2	0.02	0.02
Technicolor	-2.9	-4.0	-0.1	-25.0	-2.6	-2.3
Trams - Diesel	16.6	-33.8	0.02	5.0	0.9	0.3
Water Purification *	NR	NR	NR	-3.9	NR	NR
Welding	NR	NR	NR	NR	0.1	0.1
New Frontlot Development	13.9	35.1	1.6	2.5	2.6	1.8
Total Incremental Change in Emissions	143	-13	1	-77	3	-0.3

NR - No Emissions Reported

Table 17. Incremental Increase of Alternative 10 Operational Emissions (lb/day)

Source Category	CO (lbs/day)	NO_X (lbs/day)	SO_X (lbs/day)	VOC (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Onsite Emissions	130	-12	0.6	-70	2	-0.2
Offsite Emissions	614	67	2	62	17	11
Total Emissions	744	55	3	-8	19	10
SCAQMD Threshold	550	55	150	55	150	55
Above Threshold?[a]	**Yes**	**Yes**	No	No	No	No
Comparison to Draft EIR						
Project Incremental Total Emissions[b]	1,234	127	4	61	36	22

Note:

a. NO_x is equal to the SCAQMD significance threshold but conservatively characterized as above the threshold.

b. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project total emissions are from Table 50 of the Project Air Quality Technical Report and Table 124 of Section IV.H of the Draft EIR.

Table 18. Maximum Incremental Ambient Air Quality Impacts – Alternative 10 Operations

Alternative 10 + Background[a, c]							Comparison to Draft EIR
Pollutant	**Averaging Time**	**Maximum Concentration from Alternative 10 Emissions ($\mu g/m^3$)**	**Background Pollutant Concentration ($\mu g/m^3$)**	**Maximum Alternative 10 + Background Concentration ($\mu g/m^3$)**	**SCAQMD Threshold ($\mu g/m^3$)**	**Above SCAQMD Threshold?**	**Maximum Project + Background Concentration[e] ($\mu g/m^3$)**
NO_2[b]	1-hour	17	164	181	339	No	186
	Annual	2.6	55	57.6	57	**Yes**	58
CO	1-hour	93	4,580	4,673	23,000	No	4,716
	8-hour	26	3,893	3,919	10,000	No	3,930
Incremental Analysis[a]							**Maximum Concentration from Project Emissions[e] ($\mu g/m^3$)**
PM_{10}	24-hour	0.7	N/A	N/A	2.5	No	1.4
	Annual	0.3	N/A	N/A	1.0	No	0.4
$PM_{2.5}$	24-hour	0.4	N/A	N/A	2.5	No	0.9
Sulfates[d]	24 hr	0.005	N/A	N/A	25	No	0.003

Notes:

N/A - Not Applciable

a. PM10, PM2.5 and sulfates are incremental impacts from Alternative 10 emissions. Impacts for NO2 and CO are added to background pollutant concentrations and compared to thresholds.

b. NO2 concentration is based on a tiered approach including an ozone limiting methodology. Primary NO2 emissions are assumed to be 5.3 % of NOx emissions based on the lowest NO2/NOx value as cited in the SCAQMD LST methodology, Table 2-4 page 2-9. The conversion of NOx to NO2 is assumed to be limited by the available ozone.

c. Maximum from East San Fernando Valley monitor in 2007 for NO_2 and in 2005 for CO based on most recent data availability. Note that the 2007 AQMP projects that NO_x emissions in the SOCAB will decrease by nearly an order of magnitude by 2030 (see Chapter 5, Figure 5-16). Given these projections for NO_x emissions, it is likely that the background NO_2 concentrations will also decrease by 2030.

d. Sulfates estimated by assuming 2% of SOx emissions are sulfate. It is assumed that maximally impacted receptors are located in close proximity of sources, and thus atmospheric conversion from SOx to sulfates is assumed to be minimal.

e. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. Maximum Project concentrations are from Table 51 of the Project Air Quality Technical Report and Table 125 of Section IV.H of the Draft EIR.

Table 19. Maximum Incremental Ambient Air Quality Impacts at Non-residential Sensitive Receptors – Alternative 10 Operations ($\mu g/m^3$)

Receptor Location	PM_{10}	PM_{10}	$PM_{2.5}$	NO_2	NO_2
	24-hour	Annual	24-hour	1-hour	Annual
10850 Moorpark Street	-0.0003	-0.001	-0.04	-2.5	0.01
10952 Whipple Street	-0.002	-0.005	-0.04	-2.4	0.03
11201 Ventura Boulevard	0.01	0.005	-0.01	-2.2	0.07
11230 Moorpark Street	-0.001	0.0001	-0.02	-2.1	0.02
11429 Ventura Boulevard	0.010	0.003	-0.005	-1.7	0.03
11441 Ventura Boulevard	0.010	0.002	-0.005	-1.7	0.03
115 North Hollywood Way	0.03	0.004	0.002	-2.0	0.002
217 North Hollywood Way	0.02	0.003	0.001	-1.2	0.001
225 North Evergreen	0.04	0.005	0.008	-1.7	-0.02
3333 Oak Street	0.01	0.002	-0.001	-1.1	0.002
3901 West Oak Street	-0.001	0.003	-0.02	-1.3	-0.009
3909 Carpenter Avenue	0.01	0.001	0.000	-1.3	0.02
4162 Kraft Avenue	0.01	0.004	-0.01	-2.0	0.04
4243 Satsuma Avenue	-0.04	-0.008	-0.08	-2.5	0.04
4301 Cahuenga Boulevard	-0.04	-0.005	-0.09	-3.1	-0.001
4607 Willowcrest Avenue	0.004	0.002	-0.02	-1.8	-0.003
4814 Cahuenga Boulevard	0.008	0.002	-0.009	-1.6	-0.003
4840 Cahuenga Boulevard	0.008	0.002	-0.009	-1.6	-0.003
6921 Woodrow Wilson Drive	0.02	0.002	0.004	-2.2	0.03
755 North Whitnall Highway	0.007	0.002	-0.006	-1.1	-0.008
Background (without Alternative 10)[a, b]	109.0	34.0	56.5	164.0	55.0
SCAQMD Threshold[c]	2.5	1.0	2.5	339.0	57.0

Notes:

a. Background values based on maximum values reported at the East San Fernando Valley monitor in 2007.

b. A negative number indicates there is a reduction from Project Site emissions.

c. Thresholds for PM10 and PM2.5 are incremental impacts from project emissions. Impacts for NO2 are added to background pollutant concentrations and compared to the threshold. CO and sulfates were not shown since the maximum offsite impacts were less than SCAQMD CEQA significance thresholds.

Table 20. Localized CO Impacts at Roadway Intersections for Future with Alternative 10 Conditions

Intersections[a, b]	CO Concentration (ppm)											
	A.M. Peak Hour (1-Hour)				P.M. Peak Hour (1-Hour)				8-Hour			
	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge
30. Cahuenga Boulevard & Moorpark Street	7.5	7.2	7.0	6.9	7.6	7.2	7.1	6.9	7.3	7.0	6.9	6.8
36. Lankershim Blvd & Campo de Cahuenga-Universal Hollywood Dr.	7.8	7.4	7.3	7.1	7.9	7.5	7.3	7.1	7.5	7.2	7.1	7.0
65. Highland Avenue & Franklin Avenue	8.0	7.5	7.3	7.1	7.9	7.4	7.3	7.1	7.6	7.2	7.1	7.0
66. Highland Avenue & Franklin Place-Franklin Avenue	8.1	7.6	7.4	7.2	8.0	7.5	7.3	7.1	7.6	7.3	7.1	7.0
128. La Brea & Franklin	7.3	7.1	7.0	6.9	7.4	7.1	7.0	6.9	7.2	7.0	6.9	6.8
133. Highland & Hollywood	7.6	7.2	7.1	7.0	7.4	7.1	7.0	6.9	7.3	7.0	7.0	6.9
SCAQMD Threshold	20 ppm (state) and 35 ppm (federal)								9.0 ppm (state/federal)			
Comparison to Draft EIR												
Maximum Project Intersection[c]	8.5	7.8	7.5	7.3	8.5	7.8	7.5	7.3	8.0	7.4	7.2	7.1

Notes:

a. The 1-Hour and 8-Hour background CO concentration are 4.0 ppm and 3.5 ppm, respectively. Background CO concentrations were obtained from SCAQMD historical air quality data for East San Fernando Valley (2006): http://www.aqmd.gov/smog/historicaldata.htm.

b. Intersection number corresponds to numbers provided in the Gibson Transportation Consulting, Inc. and Raju Associates Inc. Transportation Study.

c. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project results are from Table 54 of the Project Air Quality Technical Report and Table 126 of Section IV.H of the Draft EIR.

Table 21. Localized CO Impacts at Roadway Intersections for Existing with Alternative 10 Conditions

Intersections[a, b]	CO Concentration (ppm)											
	A.M. Peak Hour (1-Hour)				P.M. Peak Hour (1-Hour)				8-Hour			
	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge	Roadway Edge	25 Feet from Roadway Edge	50 Feet from Roadway Edge	100 Feet from Roadway Edge
65. Highland Avenue & Franklin Avenue	9.9	7.8	7.1	6.2	9.4	7.5	6.8	6.0	7.6	6.2	5.6	5.0
66. Highland Avenue & Franklin Place-Franklin Avenue	10.5	8.3	7.4	6.5	9.8	7.8	7.0	6.2	8.1	6.5	5.9	5.2
128. La Brea & Franklin	7.1	6.1	5.7	5.2	7.1	6.0	5.6	5.2	5.7	5.0	4.7	4.4
133. Highland & Hollywood	7.9	6.6	6.1	5.5	7.3	6.2	5.8	5.3	6.2	5.3	4.9	4.5
SCAQMD Threshold	20 ppm (state) and 35 ppm (federal)								9.0 ppm (state/federal)			
Comparison to Draft EIR												
Maximum Project Intersection[c]	10.7	8.4	7.5	6.6	10.3	7.9	7.2	6.3	8.2	6.6	6.0	5.3

Notes:

a. The 1-Hour and 8-Hour background CO concentration are 4.0 ppm and 3.5 ppm, respectively. Background CO concentrations were obtained from SCAQMD historical air quality data for East San Fernando Valley (2006): http://www.aqmd.gov/smog/historicaldata.htm.

b. Intersection number corresponds to numbers provided in the Gibson Transportation Consulting, Inc. and Raju Associates Inc. Transportation Study.

c. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project results are from Table 2 of the ENVIRON Supplemental Localized Carbon Monoxide Analysis memo (July, 2012).

Table 22. Maximum Incremental Health Risk Impacts Associated with TAC Emissions - Alternative 10 Operations

Health Endpoint	Receptor	Maximum Estimated Incremental Risk - Alternative 10 (Risk in 1 million)	SCAQMD Threshold (Risk in 1 million)	Comparison to Draft EIR Maximum Estimated Incremental Risk - Project[b] (Risk in 1 million)
Cancer Risk	Residential	3.4	10	5.6
	Worker	2.5	10	5.0
	Recreational	0.03	10	0.04
Health Endpoint[a]	**Receptor**	**Maximum Estimated Incremental Risk - Alternative 10 (Hazard Index)**	**SCAQMD Threshold (Hazard Index)**	**Maximum Estimated Incremental Risk - Project[b] (Hazard Index)**
Chronic Noncancer Hazard Index	Residential	0.003	1.0	0.3
	Worker	0.001	1.0	0.5
	Recreational	0.003	1.0	0.2
Acute Noncancer Hazard Index	Residential	0.002	1.0	<0.01
	Worker	0.009	1.0	<0.01
	Recreational	0.001	1.0	<0.01

Notes:

a. The chronic and acute noncancer hazard indices were based on the chronic REL for Diesel Particulate Matter and acute noncancer RELs as listed in the HARP software for the speciated compounds for diesel exhaust.

b. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project risk estimates are from Table 56 of the Project Air Quality Technical Report and Table 127 of Section IV.H of the Draft EIR.

Table 23. Maximum Health Risk Impacts Associated with TAC Emissions - Alternative 10 Combined Construction and Operations

Health Endpoint	Receptor	Maximum Estimated Combined Incremental Risk - Alternative 10 (Risk in 1 million)	SCAQMD Threshold (Risk in 1 million)	Comparison to Draft EIR Maximum Estimated Combined Incremental Risk - Project[c] (Risk in 1 million)
Cancer Risk[a]	Residential	4.7	10	6.4
	Worker	6.4	10	8.8
	Recreational	0.04	10	0.06
Health Endpoint[b]	**Receptor**	**Maximum Estimated Combined Incremental Risk - Alternative 10 (Hazard Index)**	**SCAQMD Threshold (Hazard Index)**	**Maximum Estimated Combined Incremental Risk - Project[c] (Hazard Index)**
Chronic Noncancer Hazard Index	Residential	0.02	1.0	0.3
	Worker	0.02	1.0	0.5
	Recreational	0.01	1.0	0.2
Acute Noncancer Hazard Index	Residential	0.2	1.0	0.2
	Worker	0.2	1.0	0.2
	Recreational	0.2	1.0	0.2

Notes:

a. Note that the total cancer risk may not equal the construction plus operations cancer risk impacts since the combined maximum cancer risk may be at a different location than that for construction or operations alone.

b. Chronic and acute noncancer hazard indices were calculated based on speciated compounds and chronic and acute noncancer RELs listed in HARP software. As a conservative approximation, the maximum health risk values from Project operations and construction were added together to estimate the combined health risk chronic and acute noncancer impacts.

c. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project risk estimates are from Table 57 of the Project Air Quality Technical Report.

Table 24. Maximum Health Risk Impacts Associated with TAC Emissions at Non-residential Sensitive Receptors – Alternative 10 Operation and Construction

Receptor Location[a]	Incremental Cancer Risk	Incremental Chronic Noncancer	Noncancer Incremental Acute
10850 Moorpark Street	-0.42	-0.002	0.05
10952 Whipple Street	-0.64	-0.003	0.05
11201 Ventura Boulevard	-0.10	0.000	0.02
11230 Moorpark Street	-0.31	-0.001	0.03
11429 Ventura Boulevard	-0.04	-0.00002	0.02
11441 Ventura Boulevard	-0.04	-0.00002	0.02
115 North Hollywood Way	-0.03	0.0002	0.04
217 North Hollywood Way	-0.02	0.0002	0.04
225 North Evergreen	-0.03	0.0001	0.04
3333 Oak Street	-0.02	0.0001	0.03
3901 West Oak Street	-0.03	-0.0001	0.03
3909 Carpenter Avenue	-0.05	-0.0002	0.01
4162 Kraft Avenue	-0.08	-0.0003	0.02
4243 Satsuma Avenue	-0.84	-0.004	0.06
4301 Cahuenga Boulevard	-0.70	-0.003	0.06
4607 Willowcrest Avenue	-0.13	-0.0004	0.03
4814 Cahuenga Boulevard	-0.07	-0.0002	0.03
4840 Cahuenga Boulevard	-0.06	-0.0002	0.03
6921 Woodrow Wilson Drive	0.00	0.0002	0.05
755 North Whitnall Highway	-0.01	-0.00005	0.02
SCAQMD Threshold	10	1	1

Notes:

a. As a conservative approximation, the maximum health risk values from Project operations and construction were added together to estimate the combined health risk and chronic and acute noncaner impacts.

Table 25. Mid-Alternative 10 Maximum Mass Daily Emissions

Activity	lb/day					
	CO	**NOX**	**SOX**	**VOC**	**PM10**	**PM2.5**
Onsite Operations	494	115	1.7	140	15	7
Offsite Operational Mobile Sources	558	73	1	50	7	4
Onsite Construction - Modules B3 and F2	128	165	0.2	25	16	12
Offsite Construction - Modules B3 and F2	143	368	0.4	32	18	15
Total[a]	1,323	721	3	248	56	38
SCAQMD Mass Emission Threshold	550	100 (construction) 55 (operations)	150	75 (Construction) 55 (Operations)	150	55
Above Threshold?	**Yes**	**Yes**	No	**Yes**	No	No
Comparison to Draft EIR						
Mid-Project Total Emissions (Scenario A)[b]	3,166	1,974	6	468	138	101
Mid-Project Total Emissions (Scenario B)[b]	2,783	2,508	7	471	235	131

Notes:

a. The sum of the values may differ from what is shown due to rounding.

b. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Mid-Project total emissions are from Tables 59 and 60 of the Project Air Quality Technical Report and Tables 130 and 131 of Section IV.H of the Draft EIR.

Table 26. Maximum Ambient Air Quality Impacts - Mid-Alternative 10 Scenario

Mid-Alternative 10 + Background [a]						**Comparison to Draft EIR**
Pollutant	**Averaging Time**	**Maximum Concentration from Alternative 10 Emissions ($\mu g/m^3$)**	**Background Pollutant Concentration ($\mu g/m^3$)**	**Maximum Alternative 10 + Background Concentration ($\mu g/m^3$)**	**SCAQMD Threshold ($\mu g/m^3$)**	**Maximum Project + Background Concentration ($\mu g/m^3$)**
NO_2 [b]	1-hour	220	164	384	339	411
	Annual	11	55	66	57	66
CO	1-hour	396	4,580	4,976	23,000	5,074
	8-hour	142	3,893	4,035	10,000	4,029
Incremental Analysis [a]						**Maximum Concentration from Project Emissions ($\mu g/m^3$)**
PM_{10}	24-hour	8.7	N/A	N/A	10.4 (Construction) 2.5 (Operations)	49
	Annual	0.7	N/A	N/A	1.0	7
$PM_{2.5}$	24-hour	6.1	N/A	N/A	10.4 (Construction) 2.5 (Operations)	13
Sulfates [d]	24-hour	0.002	N/A	N/A	25	0.02
Chronic Noncancer Risk Analysis	**Receptor**	**Maximum Incremental Risk Impact - Alternative 10 (Hazard Index)**			**SCAQMD Threshold (Hazard Index)**	**Maximum Incremental Risk Impact - Project (Hazard Index)**
Chronic Noncancer Risk	Residential	0.01	N/A	N/A	1.0	0.4
	Worker	0.01	N/A	N/A	1.0	0.5
	Recreational	0.004	N/A	N/A	1.0	0.2
Acute Noncancer Risk Analysis						
Acute Noncancer Risk	Residential	0.1	N/A	N/A	1.0	0.2
	Worker	0.1	N/A	N/A	1.0	0.2
	Recreational	0.1	N/A	N/A	1.0	0.2

Notes:

N/A – Not Applicable.

a. Thresholds for risk, PM_{10}, $PM_{2.5}$ and sulfates are incremental impacts from Alternative 10 emissions. Impacts for NO_2 and CO are added to background pollutant concentrations and compared to thresholds.

b. NO_2 concentration is based on a tiered approach including an ozone limiting methodology. Primary NO_2 emissions are assumed to be 5.3 % of NO_x emissions based on the lowest NO_2/NO_x value as cited in the SCAQMD LST methodology, Table 2-4 page 2-9. The conversion of NO_x to NO_2 is assumed to be limited by the available ozone.

c. Maximum from East San Fernando Valley monitor in 2007 for NO_2 and in 2005 for CO based on most recent data availability. Note that the 2007 AQMP projects that NO_x emissions in the SOCAB will decrease in future years (see Chapter 5, Figure 5-16). Given these projections for NO_x emissions, it is likely that the background NO_2 concentrations will also decrease.

d. Sulfates estimated by assuming 2% of SO_x emissions are sulfate. It is assumed that maximally impacted receptors are located in close proximity of sources, and thus atmospheric conversion from SO_x to sulfates is assumed to be minimal.

e. As a conservative approximation, the maximum health risk values from Alternative 10 operations and construction were added together to estimate the combined health risk chronic and acute noncancer impacts.

f. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project concentrations are from Table 61 of the Project Air Quality Technical Report and Table 132 of Section IV.H of the Draft EIR.

Table 27. Maximum Ambient Air Quality Impacts at Non-residential Sensitive Receptors – Mid-Alternative 10

Receptor Location[a]	PM_{10}	PM_{10}	$PM_{2.5}$	NO_2	NO_2
	24-hour	Annual	24-hour	1-hour	Annual
10850 Moorpark Street	0.23	-0.008	0.29	47	0.14
10952 Whipple Street	0.30	-0.01	0.34	46	0.17
11201 Ventura Boulevard	0.09	0.00002	0.07	22	0.09
11230 Moorpark Street	0.12	-0.006	0.13	26	0.09
11429 Ventura Boulevard	0.08	0.0006	0.08	24	0.04
11441 Ventura Boulevard	0.08	0.0006	0.08	24	0.04
115 North Hollywood Way	0.15	0.0004	0.15	26	0.07
217 North Hollywood Way	0.10	0.0003	0.12	25	0.06
225 North Evergreen	0.21	-0.00002	0.25	30	0.08
3333 Oak Street	0.13	0.00008	0.16	20	0.04
3901 West Oak Street	0.11	-0.0003	0.13	21	0.05
3909 Carpenter Avenue	0.02	-0.0002	0.02	8	0.02
4162 Kraft Avenue	0.08	-0.0003	0.08	22	0.06
4243 Satsuma Avenue	0.36	-0.02	0.43	56	0.20
4301 Cahuenga Boulevard	0.22	-0.01	0.30	46	0.25
4607 Willowcrest Avenue	0.12	-0.001	0.14	14	0.09
4814 Cahuenga Boulevard	0.10	-0.0003	0.12	22	0.07
4840 Cahuenga Boulevard	0.10	-0.0002	0.11	22	0.07
6921 Woodrow Wilson Drive	0.21	0.002	0.21	34	0.07
755 North Whitnall Highway	0.05	-0.00006	0.06	18	0.03
Background (without Alternative 10)[b]	109	34	56.5	164	55
SCAQMD Threshold[b]	10.4 (construction) 2.5 (operations)	1	10.4 (construction) 2.5 (operations)	339	57

Notes:

a. Values are shown in concentration ($\mu g/m^3$) and represent incremental Alternative 10 impact.

b. Background values based on maximum values reported at the East San Fernando Valley monitor in 2007

c. Thresholds for PM_{10} and $PM_{2.5}$ are incremental impacts from Alternative 10 emissions. Impacts for NO_2 are added to background pollutant concentrations and compared to the threshold. CO and sulfates were not shown since the maximum offsite impacts were less than SCAQMD CEQA significance thresholds.

Table 28. Maximum Health Impacts Associated With TAC Emissions – Alternative 10 Construction and Operations onto the Onsite Child Care Center

Health Endpoint	Receptor	Maximum Estimated Incremental Risk - Alternative 10 (Risk in 1 million)	Comparison to Draft EIR Maximum Estimated Incremental Risk - Project[b] (Risk in 1 million)
Cancer risk	Child (Child care center)	1.4	3.2
Health Endpoint[a]	**Receptor**	**Maximum Estimated Incremental Risk - Alternative 10 (Hazard Index)**	**Maximum Estimated Incremental Risk - Project[b] (Hazard Index)**
Chronic Noncancer Hazard Index	Child (Child care center)	0.01	0.9
Acute Noncancer Hazard Index	Child (Child care center)	0.13	0.2

Notes:

a. Chronic and acute noncancer hazard indices were calculated based on speciated compounds and chronic and acute noncancer RELs listed in HARP software.

b. Information from the Draft EIR is provided in this table for informational purposes only and the Draft EIR should be referenced for information about the proposed Project. The Project risks are from Table 64 of the Project Air Quality Technical Report and Table 129 of Section IV.H of the Draft EIR.

Figures

ENVIRON

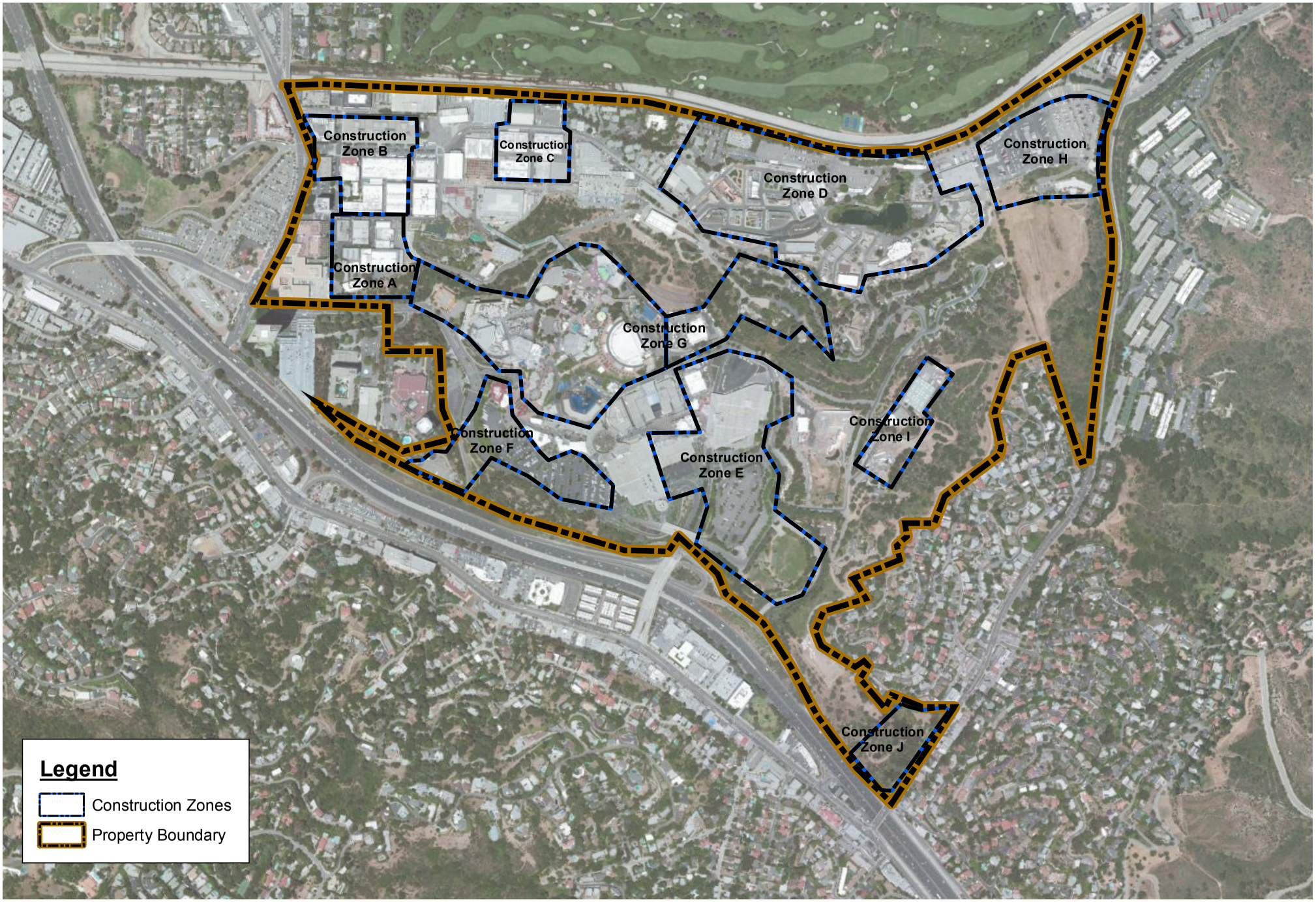
Locations of NBC Universal Evolution Plan Alternative 10 Areas

NBC Universal Studios, California

Figure 1

Drafter: DATE: 4/9/2012 Contract Number: Approved: Revised:

Z:\001_Projects\NBC_UniversalStudios\03_GIS\MXD\Alt10\Figure 1 - Locations of NBC Universal Evolution Plan Alt 10 Areas.mxd



ENVIRON

Locations of Alternative 10 Development Construction Zones

NBC Universal Studios, California

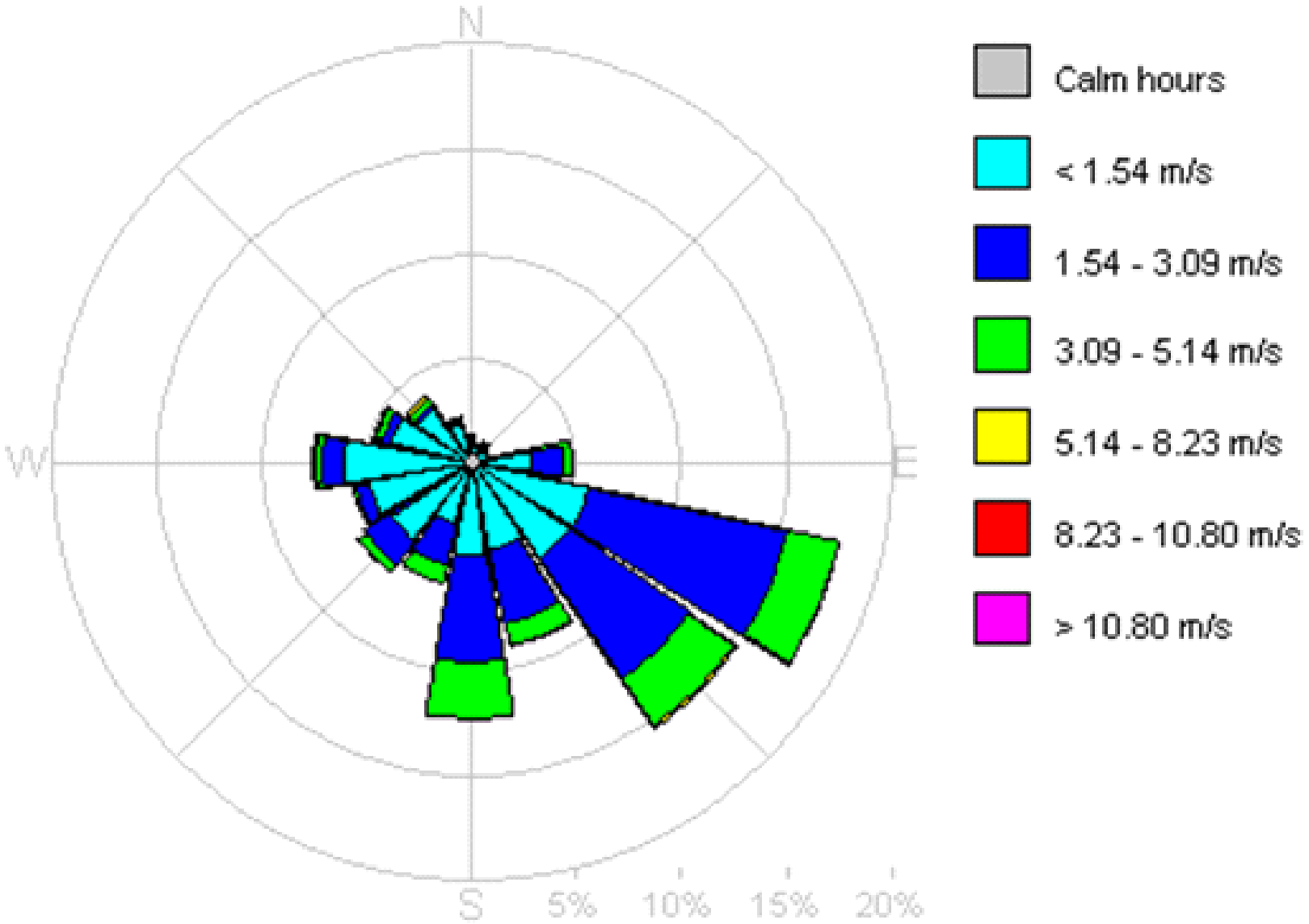
0 500 1,000
1" = 1,000'

N

Figure 2

Drafter: DATE: 4/9/2012 Contract Number: Approved: Revised:

Z:\01_Projects\NBC_UniversalStudios\03_GIS\MXD\Figure 2 Alt10_Construction_Zones.mxd



ENVIRON

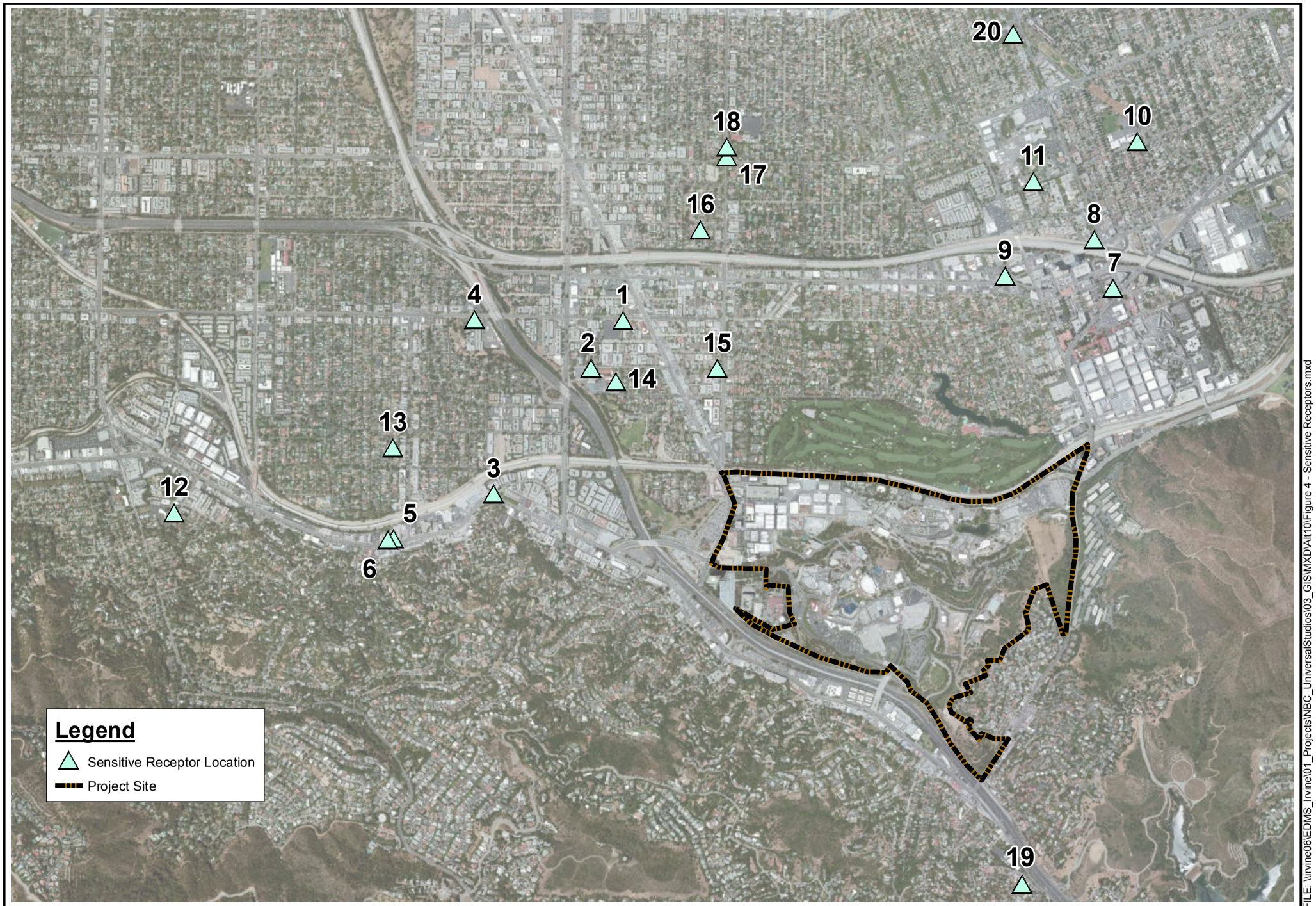
Wind Rose for 1981 Burbank Station

NBC Universal Studios, California

Figure 3

Drafter: DATE: 4/9/2012 Contract Number: Approved: Revised:

Z:\001_Projects\NBC_UniversalStudios\03_GIS\MXD\Alt10\Figure 3 - wind rose.mxd



ENVIRON

Locations of Closest Non-residential Sensitive Receptors
(ID numbers correspond to names in Table 5)

NBC Universal Studios
California

0 1,000 2,000
1" = 1,000'

N

Figure 4

Drafter: DML/SSS DATE: 3/17/2009 Contract Number: 03-13601E Approved: Revised:

FILE: \\irvine06\EDMS_Irvine\01_Projects\NBC_UniversalStudios\03_GIS\MXD\Alt10\Figure 4 - Sensitive Receptors.mxd

ENVIRON

Existing Offsite TAC-Emitting Facilities Found Within 1/4 Miles of the Child Care Center

NBC Universal Studios
California

0 500 1,000
1" = 1,000'

N

Figure 5

Drafter: DATE: 6/21/2012 Contract Number: Approved: Revised:

FILE: \\irvine06\EDMS_Irvine\01_Projects\NBC_UniversalStudios\03_GIS\MXD\Alt10\Figure 5 - Existing Offsite TAC-Emitting Facilities.mxd

Appendix A

Alternative 10 Construction Emission Estimates

Table A.1-1A. Studio, Entertainment and Business Area Construction Offsite Mass Emissions by Activity - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Module	Building ID	Activity	Equipment[1]	Number of vehicle round trips[1]	Miles travelled / round trip[2]	Emission (lb/day)[3]							Total Emission (lb/day)/Activity						
							CO	Nox	SOx	VOC	CO2	PM10	PM2.5	CO	Nox	SOx	VOC	CO2	PM10	PM2.5
A	1	S-3	Demolition	Haul Truck	10.5	30	3.77	12.04	0.01	0.96	1326.53	0.58	0.49	4.82	12.16	0.01	1.07	1465.68	0.59	0.50
		S-3	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-3	Site Preparation	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	3.74	4.84	0.01	0.62	811.48	0.24	0.20
		S-3	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-3	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-3	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-3	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-3	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-3	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-3	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	2	S-17	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.12	0.00	0.12	139.15	0.01	0.01
		S-17	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-17	Site Preparation	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	5.30	7.23	0.01	0.90	1175.47	0.36	0.30
		S-17	Site Preparation	Worker Trip	15	25	3.15	0.35	0.00	0.35	417.45	0.03	0.02							
		S-17	Building	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	23.76	51.34	0.06	4.90	6616.34	2.50	2.10
		S-17	Building	Delivery Truck	38	30	13.63	43.57	0.05	3.47	4800.77	2.09	1.77							
		S-17	Building	Worker Trip	38	25	7.98	0.89	0.01	0.88	1057.55	0.08	0.05							
		S-17	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.15	67.32	0.08	6.10	8301.56	3.26	2.75
		S-17	Finish	Delivery Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70							
		S-17	Finish	Worker Trip	35	25	7.35	0.82	0.01	0.81	974.06	0.08	0.05							
		P-7	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.12	0.00	0.12	139.15	0.01	0.01
		P-7	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-7	Site Preparation	Haul Truck	46	30	16.50	52.75	0.06	4.20	5811.46	2.53	2.15	18.81	53.00	0.06	4.45	6117.60	2.55	2.16
		P-7	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-7	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-7	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-7	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-7	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-7	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-7	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
B	1	O-1	Demolition	Haul Truck	20	30	7.17	22.93	0.02	1.82	2526.72	1.10	0.93	8.22	23.05	0.03	1.94	2665.88	1.11	0.94
		O-1	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		O-1	Site Preparation	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	5.30	7.23	0.01	0.90	1175.47	0.36	0.30
		O-1	Site Preparation	Worker Trip	15	25	3.15	0.35	0.00	0.35	417.45	0.03	0.02							
		O-1	Building	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	23.76	51.34	0.06	4.90	6616.34	2.50	2.10
		O-1	Building	Delivery Truck	38	30	13.63	43.57	0.05	3.47	4800.77	2.09	1.77							
		O-1	Building	Worker Trip	38	25	7.98	0.89	0.01	0.88	1057.55	0.08	0.05							
		O-1	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.15	67.32	0.08	6.10	8301.56	3.26	2.75
		O-1	Finish	Delivery Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70							
		O-1	Finish	Worker Trip	35	25	7.35	0.82	0.01	0.81	974.06	0.08	0.05							
	2	O-2	Demolition	Haul Truck	11.5	30	4.12	13.19	0.01	1.05	1452.87	0.63	0.54	5.17	13.30	0.02	1.17	1592.02	0.64	0.54
		O-2	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		O-2	Site Preparation	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	5.30	7.23	0.01	0.90	1175.47	0.36	0.30
		O-2	Site Preparation	Worker Trip	15	25	3.15	0.35	0.00	0.35	417.45	0.03	0.02							
		O-2	Building	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	23.76	51.34	0.06	4.90	6616.34	2.50	2.10
		O-2	Building	Delivery Truck	38	30	13.63	43.57	0.05	3.47	4800.77	2.09	1.77							
		O-2	Building	Worker Trip	38	25	7.98	0.89	0.01	0.88	1057.55	0.08	0.05							
		O-2	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.15	67.32	0.08	6.10	8301.56	3.26	2.75
		O-2	Finish	Delivery Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70							
		O-2	Finish	Worker Trip	35	25	7.35	0.82	0.01	0.81	974.06	0.08	0.05							
		P-8	Demolition	Haul Truck	11.5	30	4.12	13.19	0.01	1.05	1452.87	0.63	0.54	5.17	13.30	0.02	1.17	1592.02	0.64	0.54
		P-8	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-8	Site Preparation	Haul Truck	56	30	20.08	64.21	0.07	5.11	7074.83	3.08	2.61	22.39	64.47	0.07	5.37	7380.96	3.10	2.63
		P-8	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-8	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-8	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-8	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-8	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-8	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-8	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	3	S-2	Demolition	Haul Truck	18	30	6.34	20.26	0.02	1.61	2231.94	0.97	0.82	7.39	20.37	0.02	1.73	2371.09	0.98	0.83
		S-2	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-2	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	6.61	14.02	0.02	1.35	1822.17	0.68	0.57
		S-2	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-2	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-2	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-2	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-2	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-2	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-2	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		S-14	Demolition	Haul Truck	18	30	6.34	20.26	0.02	1.61	2231.94	0.97	0.82	7.39	20.37	0.02	1.73	2371.09	0.98	0.83
		S-14	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-14	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	8.41	19.75	0.02	1.81	2453.85	0.96	0.81
		S-14	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-14	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-14	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-14	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-14	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-14	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-14	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		P-1	Demolition	Haul Truck	18	30	6.34	20.26	0.02	1.61	2231.94	0.97	0.82	7.39	20.37	0.02	1.73	2371.09	0.98	0.83
		P-1	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-1	Site Preparation	Haul Truck	46	30	16.50	52.75	0.06	4.20	5811.46	2.53	2.15	18.81	53.00	0.06	4.45	6117.60	2.55	2.16
		P-1	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-1	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-1	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-1	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-1	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-1	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-1	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							

Table A.1-1A. Studio, Entertainment and Business Area Construction Offsite Mass Emissions by Activity - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Module	Building ID	Activity	Equipment[1]	Number of vehicle round trips[1]	Miles travelled / round trip[2]	Emission (lb/day)[3]							Total Emission (lb/day)/Activity						
							CO	Nox	SOx	VOC	CO2	PM10	PM2.5	CO	Nox	SOx	VOC	CO2	PM10	PM2.5
C	1	S-6	Demolition	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	2.48	4.70	0.01	0.48	644.50	0.23	0.19
		S-6	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-6	Site Preparation	Haul Truck	10	30	3.59	11.47	0.01	0.91	1263.36	0.55	0.47	5.89	11.72	0.02	1.17	1569.50	0.57	0.48
		S-6	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-6	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-6	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-6	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-6	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-6	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-6	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		P-6	Demolition	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	2.48	4.70	0.01	0.48	644.50	0.23	0.19
		P-6	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-6	Site Preparation	Haul Truck	35	30	12.55	40.13	0.04	3.19	4421.77	1.92	1.63	14.86	40.39	0.05	3.45	4727.90	1.95	1.65
		P-6	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-6	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-6	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-6	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-6	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-6	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-6	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		S-7	Demolition	Haul Truck	8.5	30	3.05	9.75	0.01	0.78	1073.86	0.47	0.40	4.10	9.86	0.01	0.89	1213.01	0.48	0.40
	2	S-7	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-7	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	8.41	19.75	0.02	1.81	2453.85	0.96	0.81
		S-7	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-7	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-7	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-7	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-7	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-7	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-7	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		S-8	Demolition	Haul Truck	8.5	30	3.05	9.75	0.01	0.78	1073.86	0.47	0.40	4.10	9.86	0.01	0.89	1213.01	0.48	0.40
		S-8	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-8	Site Preparation	Haul Truck	23	30	8.25	26.37	0.03	2.10	2905.73	1.26	1.07	10.56	26.63	0.03	2.35	3211.87	1.29	1.09
		S-8	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-8	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-8	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-8	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-8	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-8	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-8	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
D	1	S-1	Demolition	Haul Truck	11	30	3.95	12.61	0.01	1.00	1389.70	0.60	0.51	4.99	12.73	0.02	1.12	1528.85	0.62	0.52
		S-1	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-1	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	8.41	19.75	0.02	1.81	2453.85	0.96	0.81
		S-1	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-1	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-1	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-1	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-1	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-1	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-1	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		S-12	Demolition	Haul Truck	11	30	3.95	12.61	0.01	1.00	1389.70	0.60	0.51	4.99	12.73	0.02	1.12	1528.85	0.62	0.52
		S-12	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-12	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	6.61	14.02	0.02	1.35	1822.17	0.68	0.57
		S-12	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-12	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-12	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-12	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-12	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-12	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-12	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	2	S-13	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		S-13	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		S-13	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	5.35	13.88	0.02	1.21	1655.19	0.67	0.57
		S-13	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-13	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.08	7.65	0.02	1.31	1676.42	0.40	0.33
		S-13	Building	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-13	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-13	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		S-13	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-13	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
		S-21	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		S-21	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		S-21	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	5.35	13.88	0.02	1.21	1655.19	0.67	0.57
		S-21	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-21	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.08	7.65	0.02	1.31	1676.42	0.40	0.33
		S-21	Building	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-21	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-21	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		S-21	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-21	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
		S-24	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		S-24	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		S-24	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	5.35	13.88	0.02	1.21	1655.19	0.67	0.57
		S-24	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-24	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.08	7.65	0.02	1.31	1676.42	0.40	0.33
		S-24	Building	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-24	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-24	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		S-24	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-24	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
		S-25	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		S-25	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		S-25	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	5.35	13.88	0.02	1.21	1655.19	0.67	0.57
		S-25	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-25	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.08	7.65	0.02	1.31	1676.42	0.40	0.33
		S-25	Building	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-25	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-25	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		S-25	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-25	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							

Table A.1-1A. Studio, Entertainment and Business Area Construction Offsite Mass Emissions by Activity - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Module	Building ID	Activity	Equipment[1]	Number of vehicle round trips[1]	Miles travelled / round trip[2]	Emission (lb/day)[3]							Total Emission (lb/day)/Activity						
							CO	Nox	SOx	VOC	CO2	PM10	PM2.5	CO	Nox	SOx	VOC	CO2	PM10	PM2.5
	3	S-5	Demolition	Haul Truck	18	30	6.34	20.26	0.02	1.61	2231.94	0.97	0.82	7.39	20.37	0.02	1.73	2371.09	0.98	0.83
		S-5	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-5	Site Preparation	Haul Truck	24	30	8.61	27.52	0.03	2.19	3032.07	1.32	1.12	10.92	27.78	0.03	2.45	3338.20	1.34	1.13
		S-5	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-5	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-5	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-5	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-5	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-5	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-5	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		S-9	Demolition	Haul Truck	18	30	6.34	20.26	0.02	1.61	2231.94	0.97	0.82	7.39	20.37	0.02	1.73	2371.09	0.98	0.83
		S-9	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-9	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	8.41	19.75	0.02	1.81	2453.85	0.96	0.81
		S-9	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-9	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-9	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-9	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-9	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-9	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-9	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	4	P-2	Demolition	Haul Truck	61	30	21.88	69.94	0.08	5.57	7706.51	3.35	2.84	22.93	70.06	0.08	5.68	7845.66	3.36	2.85
		P-2	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-2	Site Preparation	Haul Truck	41	30	14.70	47.01	0.05	3.74	5179.78	2.25	1.91	17.01	47.27	0.05	4.00	5485.92	2.28	1.93
		P-2	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-2	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-2	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-2	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-2	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-2	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-2	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	5	S-26	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		S-26	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		S-26	Site Preparation	Haul Truck	12	30	4.30	13.76	0.01	1.09	1516.03	0.66	0.56	5.35	13.88	0.02	1.21	1655.19	0.67	0.57
		S-26	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-26	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.08	7.65	0.02	1.31	1676.42	0.40	0.33
		S-26	Building	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-26	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-26	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		S-26	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-26	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
E	1	C-3	Demolition	Haul Truck	11	30	3.95	12.61	0.01	1.00	1389.70	0.60	0.51	4.99	12.73	0.02	1.12	1528.85	0.62	0.52
		C-3	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		C-3	Site Preparation	Haul Truck	24	30	8.61	27.52	0.03	2.19	3032.07	1.32	1.12	10.92	27.78	0.03	2.45	3338.20	1.34	1.13
		C-3	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		C-3	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		C-3	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		C-3	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		C-3	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		C-3	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		C-3	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	2	P-9	Demolition	Haul Truck	61	30	21.88	69.94	0.08	5.57	7706.51	3.35	2.84	22.51	70.01	0.08	5.64	7790.00	3.36	2.85
		P-9	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		P-9	Site Preparation	Haul Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70	22.90	66.74	0.07	5.52	7605.80	3.21	2.72
		P-9	Site Preparation	Worker Trip	10	25	2.10	0.23	0.00	0.23	278.30	0.02	0.01							
		P-9	Building	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	10.51	12.24	0.02	1.68	2181.76	0.62	0.51
		P-9	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		P-9	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-9	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		P-9	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		P-9	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
	3	P-13	Demolition	Haul Truck	61	30	21.88	69.94	0.08	5.57	7706.51	3.35	2.84	22.51	70.01	0.08	5.64	7790.00	3.36	2.85
		P-13	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		P-13	Site Preparation	Haul Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70	22.90	66.74	0.07	5.52	7605.80	3.21	2.72
		P-13	Site Preparation	Worker Trip	10	25	2.10	0.23	0.00	0.23	278.30	0.02	0.01							
		P-13	Building	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	10.51	12.24	0.02	1.68	2181.76	0.62	0.51
		P-13	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		P-13	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-13	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		P-13	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		P-13	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
	4	P-3	Demolition	Haul Truck	61	30	21.88	69.94	0.08	5.57	7706.51	3.35	2.84	22.93	70.06	0.08	5.68	7845.66	3.36	2.85
		P-3	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-3	Site Preparation	Haul Truck	76	30	27.26	87.14	0.09	6.93	9601.55	4.17	3.54	29.57	87.40	0.10	7.19	9907.68	4.20	3.56
		P-3	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-3	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-3	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-3	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-3	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-3	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-3	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	5	P-5	Demolition	Haul Truck	10	30	3.59	11.47	0.01	0.91	1263.36	0.55	0.47	4.64	11.58	0.01	1.03	1402.51	0.56	0.47
		P-5	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-5	Site Preparation	Haul Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70	23.11	66.76	0.07	5.55	7633.63	3.21	2.72
		P-5	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-5	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-5	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-5	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-5	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-5	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-5	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	6	T-8	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		T-8	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		T-8	Site Preparation	Haul Truck	28	30	10.04	32.11	0.03	2.55	3537.41	1.54	1.31	12.14	32.34	0.04	2.79	3815.72	1.56	1.32
		T-8	Site Preparation	Worker Trip	10	25	2.10	0.23	0.00	0.23	278.30	0.02	0.01							
		T-8	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.44	8.80	0.02	1.40	1802.75	0.46	0.37
		T-8	Building	Delivery Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19							
		T-8	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-8	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		T-8	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		T-8	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							

Table A.1-1A. Studio, Entertainment and Business Area Construction Offsite Mass Emissions by Activity - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Module	Building ID	Activity	Equipment[1]	Number of vehicle round trips[1]	Miles travelled / round trip[2]	Emission (lb/day)[3]							Total Emission (lb/day)/Activity						
							CO	Nox	SOx	VOC	CO2	PM10	PM2.5	CO	Nox	SOx	VOC	CO2	PM10	PM2.5
F	1	P-4	Demolition	Haul Truck	27	30	9.68	30.96	0.03	2.46	3411.08	1.48	1.26	10.73	31.08	0.03	2.58	3550.23	1.49	1.27
		P-4	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-4	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	8.41	19.75	0.02	1.81	2453.85	0.96	0.81
		P-4	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		P-4	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		P-4	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		P-4	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-4	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		P-4	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		P-4	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	2	C-4	Demolition	Haul Truck	7.5	30	2.69	8.60	0.01	0.68	947.52	0.41	0.35	3.74	8.72	0.01	0.80	1086.67	0.42	0.36
		C-4	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		C-4	Site Preparation	Haul Truck	16	30	5.74	18.35	0.02	1.46	2021.38	0.88	0.75	8.05	18.60	0.02	1.72	2327.51	0.90	0.76
		C-4	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		C-4	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		C-4	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		C-4	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		C-4	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		C-4	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		C-4	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		H-1	Demolition	Haul Truck	7.5	30	2.69	8.60	0.01	0.68	947.52	0.41	0.35	3.74	8.72	0.01	0.80	1086.67	0.42	0.36
		H-1	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		H-1	Site Preparation	Haul Truck	122	30	43.75	139.89	0.15	11.13	15413.01	6.70	5.69	46.90	140.24	0.16	11.48	15830.47	6.73	5.71
		H-1	Site Preparation	Worker Trip	15	25	3.15	0.35	0.00	0.35	417.45	0.03	0.02							
		H-1	Building	Haul Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28	23.76	51.34	0.06	4.90	6616.34	2.50	2.10
		H-1	Building	Delivery Truck	38	30	13.63	43.57	0.05	3.47	4800.77	2.09	1.77							
		H-1	Building	Worker Trip	38	25	7.98	0.89	0.01	0.88	1057.55	0.08	0.05							
		H-1	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.15	67.32	0.08	6.10	8301.56	3.26	2.75
		H-1	Finish	Delivery Truck	58	30	20.80	66.50	0.07	5.29	7327.50	3.19	2.70							
		H-1	Finish	Worker Trip	35	25	7.35	0.82	0.01	0.81	974.06	0.08	0.05							
	3	S-16	Demolition	Haul Truck	8	30	2.87	9.17	0.01	0.73	1010.69	0.44	0.37	3.92	9.29	0.01	0.85	1149.84	0.45	0.38
		S-16	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-16	Site Preparation	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	9.84	24.34	0.03	2.17	2959.19	1.18	0.99
		S-16	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-16	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-16	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-16	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-16	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-16	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-16	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
G	1	T-2	Demolition	Haul Truck	13	30	4.66	14.91	0.02	1.19	1642.37	0.71	0.61	5.71	15.02	0.02	1.30	1781.52	0.72	0.61
		T-2	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-2	Site Preparation	Haul Truck	16	30	5.74	18.35	0.02	1.46	2021.38	0.88	0.75	8.05	18.60	0.02	1.72	2327.51	0.90	0.76
		T-2	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-2	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-2	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-2	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-2	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-2	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-2	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	2	T-4	Demolition	Haul Truck	20	30	7.17	22.93	0.02	1.82	2526.72	1.10	0.93	8.22	23.05	0.03	1.94	2665.88	1.11	0.94
		T-4	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-4	Site Preparation	Haul Truck	40	30	14.35	45.87	0.05	3.65	5053.45	2.20	1.87	16.65	46.12	0.05	3.91	5359.58	2.22	1.88
		T-4	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-4	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-4	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-4	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-4	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-4	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-4	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		T-5	Demolition	Haul Truck	20	30	7.17	22.93	0.02	1.82	2526.72	1.10	0.93	8.22	23.05	0.03	1.94	2665.88	1.11	0.94
		T-5	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-5	Site Preparation	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	9.84	24.34	0.03	2.17	2959.19	1.18	0.99
		T-5	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-5	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-5	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-5	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-5	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-5	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-5	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		T-1	Demolition	Haul Truck	40	30	14.35	45.87	0.05	3.65	5053.45	2.20	1.87	14.98	45.94	0.05	3.72	5136.94	2.20	1.87
		T-1	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		T-1	Site Preparation	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	9.84	24.34	0.03	2.17	2959.19	1.18	0.99
		T-1	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-1	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-1	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-1	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-1	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-1	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-1	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
		T-9	Demolition	Haul Truck	40	30	14.35	45.87	0.05	3.65	5053.45	2.20	1.87	14.98	45.94	0.05	3.72	5136.94	2.20	1.87
		T-9	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		T-9	Site Preparation	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	9.84	24.34	0.03	2.17	2959.19	1.18	0.99
		T-9	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-9	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-9	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-9	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-9	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-9	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-9	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	3	T-6	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.12	0.00	0.12	139.15	0.01	0.01
		T-6	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-6	Site Preparation	Haul Truck	27	30	9.68	30.96	0.03	2.46	3411.08	1.48	1.26	11.99	31.22	0.04	2.72	3717.21	1.51	1.27
		T-6	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-6	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-6	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-6	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-6	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-6	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-6	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							

Table A.1-1A. Studio, Entertainment and Business Area Construction Offsite Mass Emissions by Activity - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Module	Building ID	Activity	Equipment[1]	Number of vehicle round trips[1]	Miles travelled / round trip[2]	Emission (lb/day)[3]							Total Emission (lb/day)/Activity						
							CO	Nox	SOx	VOC	CO2	PM10	PM2.5	CO	Nox	SOx	VOC	CO2	PM10	PM2.5
	4	T-7	Demolition	Haul Truck	2	30	0.72	2.29	0.00	0.18	252.67	0.11	0.09	1.77	2.41	0.00	0.30	391.82	0.12	0.10
		T-7	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-7	Site Preparation	Haul Truck	27	30	9.68	30.96	0.03	2.46	3411.08	1.48	1.26	11.99	31.22	0.04	2.72	3717.21	1.51	1.27
		T-7	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-7	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-7	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-7	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-7	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-7	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-7	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	5	T-3/3b	Demolition	Haul Truck	27	30	9.68	30.96	0.03	2.46	3411.08	1.48	1.26	10.73	31.08	0.03	2.58	3550.23	1.49	1.27
		T-3/3b	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-3/3b	Site Preparation	Haul Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40	13.07	34.66	0.04	2.99	4096.22	1.67	1.41
		T-3/3b	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		T-3/3b	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		T-3/3b	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		T-3/3b	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-3/3b	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		T-3/3b	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		T-3/3b	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
	6	T-11	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		T-11	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		T-11	Site Preparation	Haul Truck	40	30	14.35	45.87	0.05	3.65	5053.45	2.20	1.87	16.44	46.10	0.05	3.88	5331.75	2.22	1.88
		T-11	Site Preparation	Worker Trip	10	25	2.10	0.23	0.00	0.23	278.30	0.02	0.01							
		T-11	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	10.15	11.09	0.02	1.59	2055.43	0.57	0.47
		T-11	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		T-11	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-11	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		T-11	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		T-11	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
	7	H-2/P-14	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		H-2/P-14	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		H-2/P-14	Site Preparation	Haul Truck	122	30	43.75	139.89	0.15	11.13	15413.01	6.70	5.69	45.85	140.12	0.15	11.36	15691.32	6.72	5.70
		H-2/P-14	Site Preparation	Worker Trip	10	25	2.10	0.23	0.00	0.23	278.30	0.02	0.01							
		H-2/P-14	Building	Haul Truck	5	30	1.79	5.73	0.01	0.46	631.68	0.27	0.23	11.92	13.50	0.02	1.89	2447.25	0.69	0.57
		H-2/P-14	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		H-2/P-14	Building	Worker Trip	38	25	7.98	0.89	0.01	0.88	1057.55	0.08	0.05							
		H-2/P-14	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.14	6.55	0.02	1.27	1605.74	0.35	0.28
		H-2/P-14	Finish	Delivery Truck	5	30	1.79	5.73	0.01	0.46	631.68	0.27	0.23							
		H-2/P-14	Finish	Worker Trip	35	25	7.35	0.82	0.01	0.81	974.06	0.08	0.05							
H	1	S-27/P-10	Demolition	Haul Truck	24	30	8.61	27.52	0.03	2.19	3032.07	1.32	1.12	9.24	27.59	0.03	2.26	3115.56	1.32	1.12
		S-27/P-10	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		S-27/P-10	Site Preparation	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	8.58	24.20	0.03	2.03	2792.21	1.16	0.99
		S-27/P-10	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-27/P-10	Building	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	9.79	9.94	0.02	1.50	1929.09	0.51	0.42
		S-27/P-10	Building	Delivery Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19							
		S-27/P-10	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-27/P-10	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.39	34.47	0.04	2.81	3873.58	1.65	1.40
		S-27/P-10	Finish	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-27/P-10	Finish	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
	2	P-11	Demolition	Haul Truck	20	30	7.17	22.93	0.02	1.82	2526.72	1.10	0.93	7.80	23.00	0.03	1.89	2610.21	1.11	0.94
		P-11	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		P-11	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	7.15	19.61	0.02	1.67	2286.87	0.94	0.80
		P-11	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		P-11	Building	Haul Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19	10.51	12.24	0.02	1.68	2181.76	0.62	0.51
		P-11	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		P-11	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		P-11	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37	4.14	0.01	0.97	1213.92	0.23	0.18
		P-11	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		P-11	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
	3	S-15	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.12	0.00	0.12	139.15	0.01	0.01
		S-15	Demolition	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-15	Site Preparation	Haul Truck	9	30	3.23	10.32	0.01	0.82	1137.03	0.49	0.42	5.54	10.58	0.01	1.08	1443.16	0.52	0.43
		S-15	Site Preparation	Worker Trip	11	25	2.31	0.26	0.00	0.26	306.13	0.02	0.02							
		S-15	Building	Haul Truck	6.5	30	2.33	7.45	0.01	0.59	821.19	0.36	0.30	20.02	42.62	0.05	4.10	5529.67	2.08	1.75
		S-15	Building	Delivery Truck	30	30	10.76	34.40	0.04	2.74	3790.09	1.65	1.40							
		S-15	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-15	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
		S-15	Finish	Delivery Truck	49	30	17.57	56.18	0.06	4.47	6190.47	2.69	2.28							
		S-15	Finish	Worker Trip	31	25	6.51	0.72	0.01	0.72	862.74	0.07	0.04							
I	1	S-22/S-23	Demolition	Haul Truck	21	30	7.53	24.08	0.03	1.92	2653.06	1.15	0.98	8.16	24.15	0.03	1.99	2736.55	1.16	0.98
		S-22/S-23	Demolition	Worker Trip	3	25	0.63	0.07	0.00	0.07	83.49	0.01	0.00							
		S-22/S-23	Site Preparation	Haul Truck	17	30	6.10	19.49	0.02	1.55	2147.71	0.93	0.79	7.15	19.61	0.02	1.67	2286.87	0.94	0.80
		S-22/S-23	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		S-22/S-23	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	9.44	8.80	0.02	1.40	1802.75	0.46	0.37
		S-22/S-23	Building	Delivery Truck	4	30	1.43	4.59	0.00	0.36	505.34	0.22	0.19							
		S-22/S-23	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		S-22/S-23	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.67	4.84	0.02	1.67	2048.83	0.30	0.22
		S-22/S-23	Finish	Delivery Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14							
		S-22/S-23	Finish	Worker Trip	60	25	12.59	1.40	0.02	1.39	1669.82	0.13	0.08							
	2	T-10	Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		T-10	Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
		T-10	Site Preparation	Haul Truck	24	30	8.61	27.52	0.03	2.19	3032.07	1.32	1.12	9.66	27.64	0.03	2.31	3171.22	1.33	1.13
		T-10	Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
		T-10	Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	10.15	11.09	0.02	1.59	2055.43	0.57	0.47
		T-10	Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
		T-10	Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
		T-10	Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.81	8.73	0.02	1.34	1719.26	0.45	0.37
		T-10	Finish	Delivery Truck	7	30	2.51	8.03	0.01	0.64	884.35	0.38	0.33							
		T-10	Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							
J	1		Demolition	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Demolition	Worker Trip	0	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
			Site Preparation	Haul Truck	24	30	8.61	27.52	0.03	2.19	3032.07	1.32	1.12	9.66	27.64	0.03	2.31	3171.22	1.33	1.13
			Site Preparation	Worker Trip	5	25	1.05	0.12	0.00	0.12	139.15	0.01	0.01							
			Building	Haul Truck	3	30	1.08	3.44	0.00	0.27	379.01	0.16	0.14	10.15	11.09	0.02	1.59	2055.43	0.57	0.47
			Building	Delivery Truck	6	30	2.15	6.88	0.01	0.55	758.02	0.33	0.28							
			Building	Worker Trip	33	25	6.93	0.77	0.01	0.77	918.40	0.07	0.05							
			Finish	Haul Truck	0	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.81	8.73	0.02	1.34	1719.26	0.45	0.37
			Finish	Delivery Truck	7	30	2.51	8.03	0.01	0.64	884.35	0.38	0.33							
			Finish	Worker Trip	30	25	6.30	0.70	0.01	0.70	834.91	0.07	0.04							

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Notes:
1. Number of vehicle trips based on Project information. Assumed two workers per worker trip.
2. Trip lengths are based on URBEMIS 2007 default parameters.
3. Emission factors for worker trip, haul trucks and delivery trucks are based on SCAQMD on-road emission factors for passenger cars, heavy-heavy duty trucks, and delivery trucks and conservatively represent 2010.
4. Emissions from gasoline vehicles including worker vehicles and delivery trucks have been divided by 0.95 to account for methane and nitrogen oxides, CO2 equivalent.

Table A.1-1B. Studio, Entertainment and Business Area Construction Maximum Offsite Mass Emissions by Construction Module and Land Use - Alternative 10
NBCUniversal
Los Angeles, California

Zone	Module	ID	Emissions by Construction Category(lb/day)							Emissions by Sub-Module(lb/day)						
			CO	NOx	SOx	VOC	CO2	PM10	PM2.5	CO	NOx	SOx	VOC	CO2	PM10	PM2.5
A	1	S-3	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	2	S-17	28.15	67.32	0.08	6.10	8301.56	3.26	2.75	52.23	124.23	0.15	11.30	15354.77	6.02	5.08
		P-7	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
B	1	O-1	28.15	67.32	0.08	6.10	8301.56	3.26	2.75	28.15	67.32	0.08	6.10	8301.56	3.26	2.75
	2	O-2	28.15	67.32	0.08	6.10	8301.56	3.26	2.75	52.23	131.79	0.15	11.47	15682.52	6.36	5.38
		P-8	24.08	64.47	0.07	5.37	7380.96	3.10	2.63							
	3	S-2	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	72.24	170.72	0.21	15.57	21159.64	8.28	6.98
		S-14	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
		P-1	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
C	1	S-6	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	48.16	113.82	0.14	10.38	14106.43	5.52	4.66
		P-6	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
		S-7	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	48.16	113.82	0.14	10.38	14106.43	5.52	4.66
		S-8	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
D	1	S-1	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	48.16	113.82	0.14	10.38	14106.43	5.52	4.66
		S-12	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
	2	S-13	9.08	13.88	0.02	1.31	1676.42	0.67	0.57	36.31	55.50	0.07	5.25	6705.67	2.68	2.27
		S-21	9.08	13.88	0.02	1.31	1676.42	0.67	0.57							
		S-24	9.08	13.88	0.02	1.31	1676.42	0.67	0.57							
		S-25	9.08	13.88	0.02	1.31	1676.42	0.67	0.57							
	3	S-5	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	48.16	113.82	0.14	10.38	14106.43	5.52	4.66
		S-9	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
	4	P-2	24.08	70.06	0.08	5.68	7845.66	3.36	2.85	24.08	70.06	0.08	5.68	7845.66	3.36	2.85
	5	S-26	9.08	13.88	0.02	1.31	1676.42	0.67	0.57	9.08	13.88	0.02	1.31	1676.42	0.67	0.57
E	1	C-3	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	2	P-9	22.90	70.01	0.08	5.64	7790.00	3.36	2.85	22.90	70.01	0.08	5.64	7790.00	3.36	2.85
	3	P-13	22.90	70.01	0.08	5.64	7790.00	3.36	2.85	22.90	70.01	0.08	5.64	7790.00	3.36	2.85
	4	P-3	29.57	87.40	0.10	7.19	9907.68	4.20	3.56	29.57	87.40	0.10	7.19	9907.68	4.20	3.56
	5	P-5	24.08	66.76	0.07	5.55	7633.63	3.21	2.72	24.08	66.76	0.07	5.55	7633.63	3.21	2.72
	6	T-8	12.14	32.34	0.04	2.79	3815.72	1.56	1.32	12.14	32.34	0.04	2.79	3815.72	1.56	1.32
F	1	P-4	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	2	C-4	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	70.98	197.15	0.22	16.67	22883.68	9.49	8.04
		H-1	46.90	140.24	0.16	11.48	15830.47	6.73	5.71							
	3	S-16	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
G	1	T-2	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	2	T-4	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	96.32	227.63	0.28	20.76	28212.85	11.04	9.31
		T-5	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
		T-1	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
		T-9	24.08	56.91	0.07	5.19	7053.21	2.76	2.33							
	3	T-6	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	4	T-7	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	5	T-3/3b	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
	6	T-11	16.44	46.10	0.05	3.88	5331.75	2.22	1.88	16.44	46.10	0.05	3.88	5331.75	2.22	1.88
	7	H-2/P-14	45.85	140.12	0.15	11.36	15691.32	6.72	5.70	45.85	140.12	0.15	11.36	15691.32	6.72	5.70
H	1	S-27/P-10	11.39	34.47	0.04	2.81	3873.58	1.65	1.40	11.39	34.47	0.04	2.81	3873.58	1.65	1.40
	2	P-11	10.51	23.00	0.03	1.89	2610.21	1.11	0.94	10.51	23.00	0.03	1.89	2610.21	1.11	0.94
	3	S-15	24.08	56.91	0.07	5.19	7053.21	2.76	2.33	24.08	56.91	0.07	5.19	7053.21	2.76	2.33
I	1	S-22/S-23	13.67	24.15	0.03	1.99	2736.55	1.16	0.98	13.67	24.15	0.03	1.99	2736.55	1.16	0.98
	2	T-10	10.15	27.64	0.03	2.31	3171.22	1.33	1.13	10.15	27.64	0.03	2.31	3171.22	1.33	1.13
J	1		---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone A

Demolition	
Site Preparation	
Construction	
Finishing	

						Construction Months																																								
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**
1	Studio	Studio	S-3	6,000	0.16																																								
2	Studio Office/Office (Tower)	Studio Office	S-17	250,000	1.7																																								
	Parking Structures	Parking	P-7																																										

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone B

Demolition
Site Preparation
Construction
Finishing

Group	Building Type	Land Use	Activity ID	Square Footage	Site Area (acres)	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	200,000	0.57																																						
2	Studio Office/Office	Office	O-2	350,000	0.75																																						
	Parking Structures	Parking	P-8																																								
3	Studio Office	Studio Office	S-2	55,000	1.01																																						
	Parking Structures	Parking	P-1																																								
	Studio Office	Studio	S-14	15,000	0.3																																						

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone C

Demolition
Site Preparation
Construction
Finishing

						Construction Months																															
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
1	Studio Office/Office	Studio Office	S-6	100,000	1.29																														
	Parking Structures	Parking	P-6																																
2	Entertainment Use (Large)	Studio	S-7	40,000	1.17																														
	Entertainment Use (Small)	Studio	S-8	80,000	0.53																														

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone D

Demolition
Site Preparation
Construction
Finishing

						Construction Months																								
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
1	Entertainment Use (Large)	Studio	S-1	50,000	0.62																								
	Entertainment Use (Small)	Studio	S-12	20,000	0.32																								
2	Studio	Studio	S-13		8.2																								
	Studio	Studio	S-21	30,000	0.51																								
	Studio	Studio	S-24	25,000	0.23																								
	Studio	Studio	S-25	25,000	0.23																								
3	Entertainment Use (Large)	Studio Office	S-5	25,000	1.93																								
	Studio	Studio	S-9	49,000	1.01																								
4	Parking Structures	Parking	P-2/S-20		1.61																								

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone E

Demolition
Site Preparation
Construction
Finishing

						Construction Months																						
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**
1	Ampitheatre	Amphitheatre	C-3	60,000	1.1																							
2	Parking Structures	Parking	P-9		3.7																							
3	Parking Structures	Parking	P-13		1.84																							
4	Parking Structures	Parking	P-3		3.74																							
5	Parking Structures	Parking	P-5		0.69																							
6	Entertainment Use	Entertainment	T-8	15,000	0.55																							

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone F

Demolition
Site Preparation
Construction
Finishing

Group	Building Type	Land Use	Activity ID	Square Footage	Site Area (acres)	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	Parking Structures	Parking	P-4		2.09																										
2	Amphitheatre/Entertainment Retail	Entertainment Retail	C-1/C-4	70,000	3.67																										
	Hotel	Hotel	H-1/P-12	450,000																											
3	Amphitheatre	Amphitheatre	S-16	50,000	0.67																										

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone G

Demolition
Site Preparation
Construction
Finishing

Group	Building Type	Land Use	Activity ID	Square Footage	Site Area (acres)	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	Entertainment Use (Large)	Entertainment	T-2	50,000	0.64																														
2	Entertainment Use (Large)	Entertainment	T-4	100,000	3.76																														
	Entertainment Use (Large)	Entertainment	T-5	40,000																															
	Entertainment Use (Small)	Entertainment	T-1		1.01																														
	Entertainment Use	Entertainment	T-9	45,000	0																														
3	Entertainment Use (Small)	Entertainment	T-6	25,000	0.94																														
4	Entertainment Use (Small)	Entertainment	T-7	100,000	2.27																														
5	Entertainment Use (Large)	Entertainment	T-3/3b	60,000	2.71																														
6	Entertainment Use (Large)	Entertainment	T-11	100,000	1.03																														
7	Hotel	Hotel	H-2/P-14	450,000	2.02																														

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone H

Demolition
Site Preparation
Construction
Finishing

						Construction Months																									
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**
1	Studio Office	Studio Office	S-27/P-10	200,000	1.06																										
2	Parking	Parking	P-11		2.48																										
3	Child Care	Studio Office	S-15	5,000	0.51																										

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone I

Demolition	
Site Preparation	
Construction	
Finishing	

						Construction Months											
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23	40,000	4.82												
2	Entertainment Use	Entertainment	T-10	20,000	0.6												

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Table A.1-1C. Studio, Entertainment and Business Area Construction Schedule by Module - Alternative 10
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Studio, Entertainment and Business Area Construction Assumptions - Scheduling

Zone J

Demolition
Site Preparation
Construction
Finishing

						Construction Months																								
Group	**Building Type**	**Land Use**	**Activity ID**	**Square Footage**	**Site Area (acres)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**
1	Support	Studio	PF-1		4.84																										

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Table A.2-1.A. Demolition of Zone A Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	57,709	sf
Demolition Schedule -	**11 days[a]**	
		Crew Size
		6

Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Excavators	0.47	0.92	0.05	0.001	0.07	119.58
Rubber Tired Dozers	0.88	2.63	0.10	0.002	0.19	239.10
Tractors/Loaders/Backhoes	0.42	0.78	0.08	0.001	0.12	66.81

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	241

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[h]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	21	0.19
Water Truck[j]	1	1.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3,825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1,068.89
Total	**24.47**	**61.91**	**3.37**	**0.06**	**5.60**	**5,851.20**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency)
= PM_{10} Emissions (lb/day)

Description	**Control Efficiency** %	**PM_{10} Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.06
Material Handling (Debris)	68	0.06
Total		**0.12**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Offsite (Haul Truck)	0.10	0.33	0.02	0.00	0.03	0.01	33.60
Water Truck	0.05	0.16	0.01	0.00	0.01	0.01	16.00
Total	**0.15**	**0.49**	**0.02**	**0.00**	**0.04**	**0.02**	**49.60**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions (Mitigated)	**24.62**	**62.40**	**3.51**	**0.06**	**5.64**	**5,900.80**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[n]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion	0.92	3.39	3.14
Fugitive	0.21	0.12	0.03
Total		**3.51**	**3.17**

Notes:
a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]. Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.B.1. Demolition of Zone B Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity					
Approximate square feet that is going to be demolished within each building			54,594	sf			
Demolition Schedule -		**11 days[a]**					
			Crew Size				
			6				
Equipment Type[a,b]	**No. of Equipment**	**hr/day**					
Excavators	1	8.0					
Rubber Tired Dozers	2	8.0					
Tractors/Loaders/Backhoes	2	8.0					
Construction Equipment Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	
Excavators	0.465	0.919	0.049	0.001	0.07	119.58	
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.19	239.10	
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.12	66.81	
Fugitive Dust Material Handling							
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**				
	mph		ton/day				
0.35	3.8	2.0	228				
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Haul Truck[i]	20	0.19					
Water Truck[j]	1	1.8					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	
Excavators	3.72	7.35	0.39	0.01	0.59	956.65	
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3,825.66	
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1,068.89	
Total	**24.47**	**61.91**	**3.37**	**0.06**	**5.60**	**5,851.20**	
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment							
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM_{10} Emissions (lb/day)							
Description		**Control Efficiency**	**PM_{10} Mitigated[m]**				
		%	lb/day				
Material Handling (Demolition)[l]		68	0.06				
Material Handling (Debris)		68	0.06				
Total			**0.12**				
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.10	0.32	0.02	0.00	0.03	0.01	32.00
Water Truck	0.05	0.15	0.01	0.00	0.01	0.01	15.16
Total	**0.14**	**0.47**	**0.02**	**0.00**	**0.04**	**0.02**	**47.16**
Total Incremental Localized Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	
On-site Emissions (Mitigated)	**24.62**	**62.38**	**3.51**	**0.06**	**5.64**	**5,898.36**	
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[n]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion		0.92	3.39	3.14			
Fugitive		0.21	0.12	0.03			
Total			**3.51**	**3.16**			

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Notes:
a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]. Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.B.2. Demolition of Zone B Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	43,371	sf

Demolition Schedule - **11 days[a]**

		Crew Size
		6
Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.47	0.92	0.05	0.001	0.074	119.58
Rubber Tired Dozers	0.88	2.63	0.10	0.002	0.194	239.10
Tractors/Loaders/Backhoes	0.42	0.78	0.08	0.001	0.119	66.81

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e]	Moisture Content[f]	Debris Handled[g]
	mph		ton/day
0.35	3.8	2.0	181

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	16	0.19
Water Truck[j]	1	1.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3,825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1,068.89
Total	**24.47**	**61.91**	**3.37**	**0.06**	**5.60**	**5,851.20**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency)
= PM_{10} Emissions (lb/day)

Description	Control Efficiency	PM_{10} Mitigated[m]
	%	lb/day
Material Handling (Demolition)[l]	68	0.05
Material Handling (Debris)	68	0.05
Total		**0.10**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.08	0.25	0.01	0.00	0.02	0.01	25.60
Water Truck	0.04	0.12	0.01	0.00	0.01	0.00	11.79
Total	**0.11**	**0.37**	**0.02**	**0.0004**	**0.03**	**0.02**	**37.39**

Total Incremental Localized Emissions from Construction Activities

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.59**	**62.28**	**3.49**	**0.06**	**5.63**	**5,888.59**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[n]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion	0.92	3.39	3.13
Fugitive	0.21	0.10	0.02
Total		**3.49**	**3.15**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]. Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.B.3. Demolition of Zone B Module 3 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity					
Approximate square feet that is going to be demolished within each building			63,290	sf			
Demolition Schedule -		**11 days[a]**					
			Crew Size				
			6				
Equipment Type[a,b]	**No. of Equipment**	**hr/day**					
Excavators	1	8.0					
Rubber Tired Dozers	2	8.0					
Tractors/Loaders/Backhoes	2	8.0					
Construction Equipment Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	
Excavators	0.47	0.92	0.05	0.001	0.07	119.58	
Rubber Tired Dozers	0.88	2.63	0.10	0.002	0.19	239.10	
Tractors/Loaders/Backhoes	0.42	0.78	0.08	0.001	0.12	66.81	
Fugitive Dust Material Handling							
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**				
	mph		ton/day				
0.35	3.8	2.0	265				
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Haul Truck[i]	23	0.19					
Water Truck[j]	1	2					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	
Excavators	3.72	7.35	0.39	0.01	0.59	956.65	
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3,825.66	
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1,068.89	
Total	**24.47**	**61.91**	**3.37**	**0.06**	**5.60**	**5,851.20**	
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment							
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM_{10} Emissions (lb/day)							
Description		**Control Efficiency**	**PM_{10} Mitigated[m]**				
		%	lb/day				
Material Handling (Demolition)[l]		68	0.07				
Material Handling (Debris)		68	0.07				
Total			**0.14**				
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.11	0.37	0.02	0.00	0.03	0.02	36.80
Water Truck	0.05	0.17	0.01	0.00	0.01	0.01	16.84
Total	**0.16**	**0.53**	**0.03**	**0.0005**	**0.04**	**0.02**	**53.65**
Total Incremental Localized Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**	
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	
On-site Emissions (Mitigated)	**24.64**	**62.45**	**3.53**	**0.06**	**5.64**	**5,904.84**	
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[n]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion		0.92	3.39	3.14			
Fugitive		0.21	0.14	0.03			
Total			**3.53**	**3.17**			

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]. Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.C.1. Demolition of Zone C Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolished within each building			22,500	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	94			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	8	0.19				
Water Truck[j]	1	0.8				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.02			
Material Handling (Debris)		68	0.02			
Total			**0.04**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.04	0.13	0.01	0.00	0.01	0.01	12.80
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Total	**0.06**	**0.19**	**0.01**	**0.00**	**0.02**	**0.01**	**19.538**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.5**	**62.1**	**3.4**	**0.1**	**5.6**	**5870.7**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.1		
Fugitive		0.21	0.04	0.01		
Total			**3.4**	**3.1**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.

b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).

c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].

d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm

e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.

f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28

g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day

h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT

i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.

j) Conservatively estimated to be the distance a water truck travels within the construction zone.

k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.

l) EPA suggests using the material handling equation for demolition emission estimates.

m) Includes watering at least three times a day per Rule 403 (68% control efficiency)

n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.C.1. Demolition of Zone C Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	47,247	sf
Demolition Schedule -	**11 days[a]**	

		Crew Size
		6
Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	198

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	17	0.19
Water Truck[j]	1	1.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.05
Material Handling (Debris)	68	0.05
Total		**0.10**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.08	0.27	0.01	0.00	0.02	0.01	27.20
Water Truck	0.04	0.13	0.01	0.00	0.01	0.01	12.63
Total	**0.12**	**0.40**	**0.02**	**0.0004**	**0.03**	**0.02**	**39.834**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.6**	**62.3**	**3.5**	**0.1**	**5.6**	**5891.0**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.10	0.02
Total		**3.5**	**3.2**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.D.1. Demolition of Zone D Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	59,480	sf

Demolition Schedule - **11 days[a]**

	Crew Size
	6

Equipment Type[a,b]	No. of Equipment	hr/day
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e] mph	Moisture Content[f]	Debris Handled[g] ton/day
0.35	3.8	2.0	249

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO2 lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	22	0.19
Water Truck[j]	1	1.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency %	PM10 Mitigated[m] lb/day
Material Handling (Demolition)[l]	68	0.06
Material Handling (Debris)	68	0.06
Total		**0.12**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO2 lb/day
Offsite (Haul Truck)	0.11	0.35	0.02	0.00	0.03	0.01	35.20
Water Truck	0.05	0.16	0.01	0.00	0.01	0.01	16.00
Total	**0.16**	**0.51**	**0.02**	**0.00**	**0.04**	**0.02**	**51.203**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
On-site Emissions (Mitigated)	**24.6**	**62.4**	**3.5**	**0.1**	**5.6**	**5902.4**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10 lb/day	PM2.5 lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.12	0.03
Total		**3.5**	**3.2**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.D.3. Demolition of Zone D Module 3 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	143,353	sf
Demolition Schedule -	**11 days[a]**	
	Crew Size	
	6	

Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	599

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	53	0.19
Water Truck[j]	1	4.6

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.15
Material Handling (Debris)	68	0.15
Total		**0.30**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.26	0.84	0.04	0.00	0.07	0.04	84.81
Water Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.74
Total	**0.38**	**1.23**	**0.06**	**0.0012**	**0.10**	**0.05**	**123.545**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.8**	**63.1**	**3.7**	**0.1**	**5.7**	**5974.7**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.2
Fugitive	0.21	0.30	0.06
Total		**3.7**	**3.3**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.D.4. Demolition of Zone D Module 4 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	164,454	sf
Demolition Schedule -	**11 days[a]**	
	Crew Size	
	6	

Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	688

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	61	0.19
Water Truck[j]	1	5.2

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.17
Material Handling (Debris)	68	0.17
Total		**0.34**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.30	0.97	0.05	0.00	0.08	0.04	97.61
Water Truck	0.13	0.44	0.02	0.00	0.03	0.02	43.79
Total	**0.43**	**1.41**	**0.07**	**0.0013**	**0.11**	**0.06**	**141.399**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.9**	**63.3**	**3.8**	**0.1**	**5.7**	**5992.6**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.2
Fugitive	0.21	0.34	0.07
Total		**3.8**	**3.3**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.E.1. Demolition of Zone E Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	28,720	sf

Demolition Schedule - **11 days[a]**

	Crew Size
	6

Equipment Type[a,b]	No. of Equipment	hr/day
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e] mph	Moisture Content[f]	Debris Handled[g] ton/day
0.35	3.8	2.0	120

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO2 lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	11	0.19
Water Truck[j]	1	1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency %	PM10 Mitigated[m] lb/day
Material Handling (Demolition)[l]	68	0.03
Material Handling (Debris)	68	0.03
Total		**0.06**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO2 lb/day
Offsite (Haul Truck)	0.05	0.17	0.01	0.00	0.01	0.01	17.60
Water Truck	0.03	0.08	0.00	0.00	0.01	0.00	8.42
Total	**0.08**	**0.26**	**0.01**	**0.00**	**0.02**	**0.01**	**26.023**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
On-site Emissions (Mitigated)	**24.6**	**62.2**	**3.4**	**0.1**	**5.6**	**5877.2**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10 lb/day	PM2.5 lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.06	0.01
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.E.4. Demolition of Zone E Module 4 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	352	sf
Demolition Schedule -	**11 days[a]**	
	Crew Size	
	6	

Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	1

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	0	0.19
Water Truck[j]	1	0.1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.00
Material Handling (Debris)	68	0.00
Total		**0.00**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Truck	0.00	0.01	0.00	0.00	0.00	0.00	0.84
Total	**0.00**	**0.01**	**0.00**	**0.0000**	**0.00**	**0.00**	**0.842**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5852.0**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.00	0.00
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.E.5. Demolition of Zone E Module 5 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	166,041	sf
Demolition Schedule -	**11 days[a]**	
	Crew Size	
	6	

Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	694

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	61	0.19
Water Truck[j]	1	5.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.17
Material Handling (Debris)	68	0.17
Total		**0.34**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.30	0.97	0.05	0.00	0.08	0.04	97.61
Water Truck	0.14	0.44	0.02	0.00	0.03	0.02	44.63
Total	**0.43**	**1.41**	**0.07**	**0.0014**	**0.11**	**0.06**	**142.241**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.9**	**63.3**	**3.8**	**0.1**	**5.7**	**5993.4**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.2
Fugitive	0.21	0.34	0.07
Total		**3.8**	**3.3**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.F.1. Demolition of Zone F Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	27,777	sf
Demolition Schedule -	**11 days[a]**	

		Crew Size
		6
Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

	CO	NOx	PM10	SOx	VOC	CO2
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e]	Moisture Content[f]	Debris Handled[g]
	mph		ton/day
0.35	3.8	2.0	116

Construction Vehicle (Mobile Source) Emission Factors

	CO	NOx	PM10	SOx	VOC	PM2.5	CO2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	10	0.19
Water Truck[j]	1	0.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

	CO	NOx	PM10	SOx	VOC	CO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency	PM10 Mitigated[m]
	%	lb/day
Material Handling (Demolition)[l]	68	0.03
Material Handling (Debris)	68	0.03
Total		**0.06**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NOx	PM10	SOx	VOC	PM2.5	CO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.05	0.16	0.01	0.00	0.01	0.01	16.00
Water Truck	0.02	0.08	0.00	0.00	0.01	0.00	7.58
Total	**0.07**	**0.23**	**0.01**	**0.00**	**0.02**	**0.01**	**23.581**

Total Incremental Localized Emissions from Construction Activities

	CO	NOx	PM10	SOx	VOC	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.5**	**62.1**	**3.4**	**0.1**	**5.6**	**5874.8**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10	PM2.5
		lb/day	lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.06	0.01
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.F.2. Demolition of Zone F Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolitioed within each building			218,816	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	915			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	81	0.19				
Water Truck[j]	1	7				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.23			
Material Handling (Debris)		68	0.23			
Total			**0.46**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.39	1.29	0.06	0.00	0.10	0.05	129.61
Water Truck	0.18	0.59	0.03	0.00	0.05	0.02	58.95
Total	**0.57**	**1.87**	**0.09**	**0.0018**	**0.15**	**0.08**	**188.560**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**25.0**	**63.8**	**3.9**	**0.1**	**5.7**	**6039.8**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.5	3.3		
Fugitive		0.21	0.46	0.10		
Total			**3.9**	**3.4**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.F.3. Demolition of Zone F Module 3 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	39,503	sf

Demolition Schedule - **11 days[a]**

	Crew Size
	6

Equipment Type[a,b]	No. of Equipment	hr/day
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e] mph	Moisture Content[f]	Debris Handled[g] ton/day
0.35	3.8	2.0	165

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO2 lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	15	0.19
Water Truck[j]	1	1.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency %	PM10 Mitigated[m] lb/day
Material Handling (Demolition)[l]	68	0.04
Material Handling (Debris)	68	0.04
Total		**0.08**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO2 lb/day
Offsite (Haul Truck)	0.07	0.24	0.01	0.00	0.02	0.01	24.00
Water Truck	0.03	0.11	0.01	0.00	0.01	0.00	10.95
Total	**0.11**	**0.35**	**0.02**	**0.0003**	**0.03**	**0.01**	**34.950**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
On-site Emissions (Mitigated)	**24.6**	**62.3**	**3.5**	**0.1**	**5.6**	**5886.1**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10 lb/day	PM2.5 lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.08	0.02
Total		**3.5**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.G.1. Demolition of Zone G Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolished within each building			36,089	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	151			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	13	0.19				
Water Truck[j]	1	1.2				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.04			
Material Handling (Debris)		68	0.04			
Total			**0.08**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.06	0.21	0.01	0.00	0.02	0.01	20.80
Water Truck	0.03	0.10	0.00	0.00	0.01	0.00	10.11
Total	**0.09**	**0.31**	**0.01**	**0.00**	**0.02**	**0.01**	**30.907**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.6**	**62.2**	**3.5**	**0.1**	**5.6**	**5882.1**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.1		
Fugitive		0.21	0.08	0.02		
Total			**3.5**	**3.1**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.G.2. Demolition of Zone G Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolished within each building			96,260	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	403			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	35	0.19				
Water Truck[j]	1	3.1				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.10			
Material Handling (Debris)		68	0.10			
Total			**0.20**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.17	0.56	0.03	0.00	0.04	0.02	56.00
Water Truck	0.08	0.26	0.01	0.00	0.02	0.01	26.11
Total	**0.25**	**0.82**	**0.04**	**0.00**	**0.06**	**0.03**	**82.111**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.7**	**62.7**	**3.6**	**0.1**	**5.7**	**5933.3**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.2		
Fugitive		0.21	0.20	0.04		
Total			**3.6**	**3.2**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.G.4. Demolition of Zone G Module 4 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolitioed within each building			4,300	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	18			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	2	0.19				
Water Truck[j]	1	0.2				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.00			
Material Handling (Debris)		68	0.00			
Total			**0.00**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.01	0.03	0.00	0.00	0.00	0.00	3.20
Water Truck	0.01	0.02	0.00	0.00	0.00	0.00	1.68
Total	**0.01**	**0.05**	**0.00**	**0.0000**	**0.00**	**0.00**	**4.885**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.5**	**62.0**	**3.4**	**0.1**	**5.6**	**5856.1**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.1		
Fugitive		0.21	0.00	0.00		
Total			**3.4**	**3.1**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.G.5. Demolition of Zone G Module 5 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolitioed within each building			92,725	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	388			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.210808
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	34	0.19				
Water Truck[j]	1	3				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.10			
Material Handling (Debris)		68	0.10			
Total			**0.20**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.17	0.54	0.03	0.00	0.04	0.02	54.40
Water Truck	0.08	0.25	0.01	0.00	0.02	0.01	25.26
Total	**0.24**	**0.79**	**0.04**	**0.0008**	**0.06**	**0.03**	**79.668**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.7**	**62.7**	**3.6**	**0.1**	**5.7**	**5930.9**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.2		
Fugitive		0.21	0.20	0.04		
Total			**3.6**	**3.2**		

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.H.1. Demolition of Zone H Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolished within each building	12,000	sf
Demolition Schedule -	**11 days[a]**	

		Crew Size
		6
Equipment Type[a,b]	**No. of Equipment**	**hr/day**
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr	**SOx** lb/hr	**VOC** lb/hr	**CO2** lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]** mph	**Moisture Content[f]**	**Debris Handled[g]** ton/day
0.35	3.8	2.0	50

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile	**SOx** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO2** lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Haul Truck[i]	4	0.19
Water Truck[j]	1	0.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	**Control Efficiency** %	**PM10 Mitigated[m]** lb/day
Material Handling (Demolition)[l]	68	0.01
Material Handling (Debris)	68	0.01
Total		**0.02**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**PM2.5** lb/day	**CO2** lb/day
Offsite (Haul Truck)	0.02	0.06	0.00	0.00	0.01	0.00	6.40
Water Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Total	**0.03**	**0.10**	**0.00**	**0.00**	**0.01**	**0.00**	**9.769**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NOx** lb/day	**PM10** lb/day	**SOx** lb/day	**VOC** lb/day	**CO2** lb/day
On-site Emissions (Mitigated)	**24.5**	**62.0**	**3.4**	**0.1**	**5.6**	**5861.0**

Combustion and Fugitive Summary	**PM2.5 Fraction[n]**	**PM10** lb/day	**PM2.5** lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.02	0.00
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.H.2. Demolition of Zone H Module 2 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	0	sf

Demolition Schedule - **11 days[a]**

Crew Size
6

Equipment Type[a,b]	No. of Equipment	hr/day
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e] mph	Moisture Content[f]	Debris Handled[g] ton/day
0.35	3.8	2.0	0

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO2 lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	0	0.19
Water Truck[j]	1	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency %	PM10 Mitigated[m] lb/day
Material Handling (Demolition)[l]	68	0.00
Material Handling (Debris)	68	0.00
Total		**0.00**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO2 lb/day
Offsite (Haul Truck)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.00**	**0.000**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
On-site Emissions (Mitigated)	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10 lb/day	PM2.5 lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.00	0.00
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.H.3. Demolition of Zone H Module 3 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

Construction Activity		
Approximate square feet that is going to be demolitioed within each building	0	sf

Demolition Schedule - **11 days[a]**

	Crew Size
	6

Equipment Type[a,b]	No. of Equipment	hr/day
Excavators	1	8.0
Rubber Tired Dozers	2	8.0
Tractors/Loaders/Backhoes	2	8.0

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO2 lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[d]	Mean Wind Speed[e] mph	Moisture Content[f]	Debris Handled[g] ton/day
0.35	3.8	2.0	0

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO2 lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Haul Truck[i]	0	0.19
Water Truck[j]	1	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment

Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)

Description	Control Efficiency %	PM10 Mitigated[m] lb/day
Material Handling (Demolition)[l]	68	0.00
Material Handling (Debris)	68	0.00
Total		**0.00**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO2 lb/day
Offsite (Haul Truck)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.0000**	**0.00**	**0.00**	**0.000**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO2 lb/day
On-site Emissions (Mitigated)	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**

Combustion and Fugitive Summary	PM2.5 Fraction[n]	PM10 lb/day	PM2.5 lb/day
Combustion	0.92	3.4	3.1
Fugitive	0.21	0.00	0.00
Total		**3.4**	**3.1**

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Notes:

a) Based on a general construction schedule and the type of construction activity occurring.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].
d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft
(57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day
h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd]
Multiple trucks may be used.
j) Conservatively estimated to be the distance a water truck travels within the construction zone.
k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.
l) EPA suggests using the material handling equation for demolition emission estimates.
m) Includes watering at least three times a day per Rule 403 (68% control efficiency)
n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table A-2-1.I.1. Demolition of Zone I Module 1 Buildings - Alternative 10
NBCUniversal
Los Angeles, California

		Construction Activity				
Approximate square feet that is going to be demolished within each building			6,370	sf		
Demolition Schedule -		**11 days[a]**				
			Crew Size			
			6			
Equipment Type[a,b]	**No. of Equipment**	**hr/day**				
Excavators	1	8.0				
Rubber Tired Dozers	2	8.0				
Tractors/Loaders/Backhoes	2	8.0				
Construction Equipment Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Excavators	0.465	0.919	0.049	0.001	0.074	119.581
Rubber Tired Dozers	0.878	2.633	0.104	0.002	0.194	239.103
Tractors/Loaders/Backhoes	0.419	0.777	0.082	0.001	0.119	66.806
Fugitive Dust Material Handling						
Aerodynamic Particle Size Multiplier[d]	**Mean Wind Speed[e]**	**Moisture Content[f]**	**Debris Handled[g]**			
	mph		ton/day			
0.35	3.8	2.0	27			
Construction Vehicle (Mobile Source) Emission Factors						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[h]	0.012822	0.041846	0.001996	0.000040	0.003293	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length						
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**				
Haul Truck[i]	2	0.19				
Water Truck[j]	1	0.3				
Incremental Increase in Onsite Combustion Emissions from Construction Equipment						
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Excavators	3.72	7.35	0.39	0.01	0.59	956.65
Rubber Tired Dozers	14.05	42.13	1.66	0.04	3.10	3825.66
Tractors/Loaders/Backhoes	6.70	12.43	1.31	0.01	1.90	1068.89
Total	**24.5**	**61.9**	**3.4**	**0.1**	**5.6**	**5851.2**
Incremental Increase in Onsite Fugitive Dust Emissions from Construction Equipment						
Material Handling[k]: (0.0032 x Aerodynamic Particle Size Multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x debris handled (ton/day)) x (1 - control efficiency) = PM10 Emissions (lb/day)						
Description		**Control Efficiency**	**PM10 Mitigated[m]**			
		%	lb/day			
Material Handling (Demolition)[l]		68	0.01			
Material Handling (Debris)		68	0.01			
Total			**0.02**			
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles						
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Offsite (Haul Truck)	0.01	0.03	0.00	0.00	0.00	0.00	3.20
Water Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.727**
Total Incremental Localized Emissions from Construction Activities						
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**CO2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions (Mitigated)	**24.5**	**62.0**	**3.4**	**0.1**	**5.6**	**5856.9**
Combustion and Fugitive Summary		**PM2.5 Fraction[n]**	**PM10**	**PM2.5**		
			lb/day	lb/day		
Combustion		0.92	3.4	3.1		
Fugitive		0.21	0.02	0.00		
Total			**3.4**	**3.1**		

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[FL-Demo_PAD I.xls]Zone I

Notes:

a) Based on a general construction schedule and the type of construction activity occurring.

b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).

c) Emission factors were obtained from the SCAQMD and it was assumed that all equipment is diesel fueled. SCAQMD (2008). *Off-road Mobile Source Emission Factors* [online]. Available: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html [accessed 30 July 2009].

d) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm

e) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.

f) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28

g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Debris weight to area ratio = 0.046 ton/sq ft (57,709 sq ft x 0.046 ton/sq ft)/11 days = 241 ton/day

h) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT

i) Assumed 14 cubic yd truck capacity [(241 tons/day x 2,000 lb/ton x cyd/1,620 lb = 298 cyd)/14 cyd/truck = 21 one-way truck trips/day, where building debris density is assumed to be 1,620 lb/cyd] Multiple trucks may be used.

j) Conservatively estimated to be the distance a water truck travels within the construction zone.

k) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28. EPA suggests using the material handling equation for demolition emission estimates.

l) EPA suggests using the material handling equation for demolition emission estimates.

m) Includes watering at least three times a day per Rule 403 (68% control efficiency)

n) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-3 Site Prep
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Construction Activity		
	Site Preparation	6,970 Square Feet[a]
	Footprint	0.16 Acres
Site Preparation Schedule -	**33** days[a]	

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.41	2.99	0.13	0.002	0.34	239.10
Tractors/Loaders/Backhoes	0.39	0.67	0.05	0.001	0.10	66.81
Excavators	0.56	1.15	0.06	0.001	0.15	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	1,334	0	101,061

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	4	0.1
Water Truck[m]	1	0.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	22.60	47.83	2.06	0.04	5.41	3,825.66
Tractors/Loaders/Backhoes	6.29	10.80	0.83	0.01	1.63	1,068.89
Excavators	8.93	18.40	1.02	0.02	2.37	1,913.30
Total	**37.82**	**77.02**	**3.91**	**0.07**	**9.41**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x (wind speed percent/15) x TSP fraction x Area x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) x (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**3.87**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**37.84**	**77.09**	**7.78**	**0.07**	**9.41**	**6,813.74**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	3.91	3.60
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	3.87	0.81
Total		**7.78**	**4.41**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, October 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 1334 cubic yards of dirt handled [(1334 cyd x 2,500 lb/cyd)/33 days = 101,061 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 6,970 square feet of disturbed area
n) USEPA, AP-42, October 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-17 P-7 Site Prep
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	Construction Activity		
		Site Preparation	74,052 Square Feet[a]
		Footprint	1.70 Acres
Site Preparation Schedule -	**33 days[a]**		

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.41	2.99	0.13	0.002	0.34	239.10
Tractors/Loaders/Backhoes	0.39	0.67	0.05	0.001	0.10	66.81
Excavators	0.56	1.15	0.06	0.001	0.15	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	9,844	0	745,758

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	6	0.1
Water Truck[m]	1	2.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	22.60	47.83	2.06	0.04	5.41	3,825.66
Tractors/Loaders/Backhoes	6.29	10.80	0.83	0.01	1.63	1,068.89
Excavators	8.93	18.40	1.02	0.02	2.37	1,913.30
Total	**37.82**	**77.02**	**3.91**	**0.07**	**9.41**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x (wind speed percent/15) x TSP fraction x Area x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) x (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.06	0.2	0.01	0.00	0.02	0.01	20.21
Total	**0.08**	**0.25**	**0.01**	**0.00**	**0.02**	**0.01**	**25.26**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**37.90**	**77.27**	**7.80**	**0.07**	**9.43**	**6,833.11**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	3.91	3.60
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	3.88	0.81
Total		**7.80**	**4.42**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 9844 cubic yards of dirt handled [(9844 cyd x 2,500 lb/cyd)/33 days = 745,758 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 74,052 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-3 Building
NBCUniversal
Los Angeles, California

		Construction Activity					
		Building	6,000 Square Foot Structure[a]				
		Footprint	0.16 Acres				
Construction Schedule							
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	1	8.0	65				
Cranes	1	8.0					
Pumps	1	8.0					
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07		54.40
Cranes	0.54	1.45	0.06	0.001	0.16		128.66
Pumps	0.31	0.55	0.04	0.001	0.09		49.61
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Flatbed Truck[a,e]	4	0.1					
Concrete Trucks[a,e]	6	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.86	4.13	0.22	0.00	0.55		435.17
Cranes	4.35	11.61	0.51	0.01	1.28		1,029.29
Pumps	2.48	4.44	0.31	0.00	0.75		396.85
Total	**8.68**	**20.18**	**1.05**	**0.02**	**2.57**		**1,861.31**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.002	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.002	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.000	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.004**	**0.00**	**0.01**	**0.00**	**8.42**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**8.70**	**20.26**	**1.06**	**0.02**	**2.58**		**1,869.73**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	1.05	0.97			
Combustion (Onroad)		0.96	0.004	0.00			
Fugitive		0.21	0.00	0.00			
Total			**1.06**	**0.97**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 6,970 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-17 Building
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Construction Activity		
Building Footprint	250,000 Square Foot Structure[a]	
	1.70 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07	54.40
Cranes	0.54	1.45	0.06	0.001	0.16	128.66
Pumps	0.31	0.55	0.04	0.001	0.09	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.86	4.13	0.22	0.00	0.55	435.17
Cranes	4.35	11.61	0.51	0.01	1.28	1,029.29
Pumps	2.48	4.44	0.31	0.00	0.75	396.85
Total	**8.68**	**20.18**	**1.05**	**0.02**	**2.57**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.70**	**20.26**	**1.06**	**0.02**	**2.58**	**1,869.73**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***	
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.05	0.97
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.06**	**0.97**
Significance Threshold[g]			**6**
Exceed Significance?			**NO**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 74,052 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: P-7 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	148,104 Square Foot Structure[a]	
	1.70 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07	54.40
Cranes	0.54	1.45	0.06	0.001	0.16	128.66
Pumps	0.31	0.55	0.04	0.001	0.09	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.86	4.13	0.22	0.00	0.55	435.17
Cranes	4.35	11.61	0.51	0.01	1.28	1,029.29
Pumps	2.48	4.44	0.31	0.00	0.75	396.85
Total	**8.68**	**20.18**	**1.05**	**0.02**	**2.57**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.70**	**20.26**	**1.06**	**0.02**	**2.58**	**1,869.73**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***	
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.05	0.97
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.06**	**0.97**
Significance Threshold[g]			**6**
Exceed Significance?			**NO**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 74,052 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-3 Arch Coats
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.71	8.26	0.45	0.01	1.10		870.33
Total	**3.71**	**8.26**	**0.45**	**0.01**	**1.10**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.72**	**8.28**	**0.45**	**0.01**	**1.10**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.45	0.41			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.45**	**0.41**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: S-17 Arch Coats
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**132 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.71	8.26	0.45	0.01	1.10		870.33
Total	**3.71**	**8.26**	**0.45**	**0.01**	**1.10**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.72**	**8.28**	**0.45**	**0.01**	**1.10**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.45	0.41			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.45**	**0.41**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2A. Module A Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone A: P-7 Arch Coats
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.23	0.52	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.71	8.26	0.45	0.01	1.10		870.33
Total	**3.71**	**8.26**	**0.45**	**0.01**	**1.10**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.72**	**8.28**	**0.45**	**0.01**	**1.10**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.45	0.41			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.45**	**0.41**			

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area A.xlsx]P-7 Arch Coats

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-1 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity		
Site Preparation	24,829	Square Feet[a]
Footprint	0.57	Acres

Site Preparation Schedule - 33 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	3,988	0	302,121

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	6	0.1
Water Truck[m]	1	0.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	66.53
Total	**0.04**	**0.12**	**0.00**	**0.00**	**0.01**	**0.00**	**71.58**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.80**	**40.78**	**4.03**	**0.04**	**4.97**	**3,475.51**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	1.96	0.41
Total		**4.03**	**2.32**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3988 cubic yards of dirt handled [(3988 cyd x 2,500 lb/cyd)/33 days = 302,121 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 24,829 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-2 P-8 Site Prep
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Construction Activity		
Site Preparation	32,670	Square Feet[a]
Footprint	0.75	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	7,078	0	536,212

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	10	0.1
Water Truck[m]	1	1.1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.03	0.08	0.00	0.00	0.01	0.00	5.05
Water Truck	0.03	0.09	0.00	0.00	0.01	0.00	93.48
Total	**0.06**	**0.17**	**0.00**	**0.00**	**0.02**	**0.00**	**98.53**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.82**	**40.83**	**4.03**	**0.04**	**4.98**	**3,502.46**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	1.96	0.41
Total		**4.03**	**2.32**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 7078 cubic yards of dirt handled [(7078 cyd x 2,500 lb/cyd)/33 days = 536,212 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 32,670 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-2 P-1 Site Prep
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Construction Activity

Site Preparation	43,995	Square Feet[a]
Footprint	1.01	Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	36,978	0	1,680,818

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	46	0.1
Water Truck[m]	1	1.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.03
Total		**3.90**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	35.37
Water Truck	0.04	0.12	0.01	0.00	0.01	0.00	17.69
Total	**0.16**	**0.50**	**0.03**	**0.00**	**0.04**	**0.02**	**53.06**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.69**	**81.82**	**8.07**	**0.07**	**9.96**	**6,860.91**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	3.90	0.82
Total		**8.07**	**4.66**

Notes: P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area B.xlsx]S-2 P-1 Site Prep

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 36978 cubic yards of dirt handled [(36978 cyd x 2,500 lb/cyd)/55 days = 1,680,818 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-14 Site Prep
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Construction Activity

Site Preparation	13,068	Square Feet[a]
Footprint	0.30	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	2,638	0	199,848

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	17	0.1
Water Truck[m]	1	0.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.04	0.14	0.01	0.00	0.01	0.01	5.05
Water Truck	0.01	0.04	0.00	0.00	0.00	0.00	16.00
Total	**0.05**	**0.18**	**0.01**	**0.00**	**0.01**	**0.01**	**21.05**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.82**	**40.84**	**4.03**	**0.04**	**4.97**	**3,424.98**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.95	0.41
Total		**4.03**	**2.32**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 2638 cubic yards of dirt handled [(2638 cyd x 2,500 lb/cyd)/33 days = 199,848 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 13,068 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-1 Building
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Construction Activity	
Building Footprint	200,000 Square Foot Structure[a]
	0.57 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	75
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	5	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	$PM_{2.5}$	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**9.0**	**21.3**	**1.1**	**0.0**	**2.7**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.09**	**0.00**	**0.00**	**0.01**	**0.00**	**9.26**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.40**	**1.12**	**0.02**	**2.74**	**1,870.57**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 24,829 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-2 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	350,000 Square Foot Structure[a]
Footprint	0.8 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	75
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr		CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	5	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	$PM_{2.5}$	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.09**	**0.00**	**0.00**	**0.01**	**0.00**	**9.26**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day		CO_2 lb/day
On-Site Emissions	**9.00**	**21.40**	**1.12**	**0.02**	**2.74**		**1,870.57**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 32,670 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. P-1 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	43,996	Square Foot Structure[a]
	1.01	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	$PM_{2.5}$	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.005	0.59		435.17
Cranes	4.56	12.23	0.54	0.011	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.005	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-2 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	55,000 Square Foot Structure[a]	
	1.01 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr		CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	$PM_{2.5}$	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23		0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**0.57**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**0.57**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	0.57	0.52
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.57**	**0.53**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-14 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	15,000 Square Foot Structure[a] 0.3 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.005	0.59	435.17
Cranes	4.56	12.23	0.54	0.011	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.005	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	**0.00**	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 13,068 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. P-8 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	32,670 Square Foot Structure[a]	
	0.75 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM10 lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	$PM_{2.5}$	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 32,670 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-1 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**132 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	70				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	8	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.07**	**0.00**	**0.00**	**0.01**	**0.00**	**6.74**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.81**	**8.96**	**0.49**	**0.01**	**1.19**		**877.07**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. O-2 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**132 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	70				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	8	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.07**	**0.00**	**0.00**	**0.01**	**0.00**	**6.74**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.81**	**8.96**	**0.49**	**0.01**	**1.19**		**877.07**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-2 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**44 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. S-14 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. P-1 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**44 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2B. Module B Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone B. P-8 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-6 & P-6 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	56,192 Square Feet[p]
	1.29 Acres

Site Preparation Schedule - **33 days**[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	24,800	0	1,878,788

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	35	0.1
Water Truck[m]	1	1.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton)
(1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.03
Total		**3.90**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.09	0.29	0.01	0.00	0.02	0.01	29.48
Water Truck	0.05	0.15	0.01	0.00	0.01	0.01	15.16
Total	**0.14**	**0.44**	**0.02**	**0.00**	**0.03**	**0.02**	**44.63**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**39.67**	**81.76**	**8.06**	**0.07**	**9.95**	**6,852.48**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	3.90	0.82
Total		**8.06**	**4.65**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area C.xlsx]S-6 & P-6 Site Prep

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided in the SCAQMD web-site: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph as reported in 1981 meteorological data.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
j) Assuming 24800 cubic yards of dirt handled [(24800 cyd x 2,500 lb/cyd)/33 days = 1,878,788 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Based on the conservative distance approximation within the disturbed area.
m) Assumed six foot wide water truck traverses over 56,192 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden< 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-7 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	50,965 Square Feet[g]	
	1.17 Acres	

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	9,244	0	420,182

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	17	0.1
Water Truck[m]	1	1.7

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.04	0.14	0.01	0.00	0.01	0.01	14.32
Water Truck	0.04	0.14	0.01	0.00	0.01	0.01	14.32
Total	**0.08**	**0.28**	**0.02**	**0.00**	**0.02**	**0.02**	**28.63**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.85**	**40.94**	**4.05**	**0.04**	**4.98**	**3,432.56**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.96	0.41
Total		**4.05**	**2.33**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area C.xlsx]S-7 Site Prep

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided in the SCAQMD web-site: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph as reported in 1981 meteorological data.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
j) Assuming 9244 cubic yards of dirt handled [(9244 cyd x 2,500 lb/cyd)/55 days = 420,182 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Based on the conservative distance approximation within the disturbed area.
m) Assumed six foot wide water truck traverses over 50,965 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden< 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-8 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	23,087 Square Feet[a]
	0.53 Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	3,888	0	176,727

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	23	0.1
Water Truck[m]	1	0.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)^3/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.37
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Total	**0.08**	**0.26**	**0.01**	**0.00**	**0.03**	**0.01**	**26.11**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.85**	**40.92**	**4.03**	**0.04**	**4.99**	**3,430.03**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.95	0.41
Total		**4.03**	**2.32**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area C.xlsx]S-8 Site Prep

Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided in the SCAQMD web-site: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph as reported in 1981 meteorological data.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
j) Assuming 3888 cubic yards of dirt handled [(3888 cyd x 2,500 lb/cyd)/55 days = 176,727 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Based on the conservative distance approximation within the disturbed area.
m) Assumed six foot wide water truck traverses over 23,087 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-6 Building
NBCUniversal
Los Angeles, California

Construction Activity

Building	100,000	Square Foot Structure[a]
Footprint	1.29	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area C.xlsx]S-6 Building

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 56,192 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-7 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building	40,000	Square Foot Structure[a]
Footprint	1.17	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr		CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr		CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day		CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**		**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 50,965 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-8 Building
NBCUniversal
Los Angeles, California

Construction Activity

Building	80,000	Square Foot Structure[a]
Footprint	0.53	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 23,087 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. P-6 Building
NBCUniversal
Los Angeles, California

Construction Activity

Building	112,385	Square Foot Structure[a]
Footprint	1.29	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr	lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 56,192 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-6 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-7 Arch Coat
NBCUniversal
Los Angeles, California

Construction Activity
Architectural Coating

Construction Schedule - **88 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Forklifts	2	8.0	60

Construction Equipment Combustion Emission Factors

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40

Construction Vehicle (Mobile Source) Emission Factors

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Delivery Truck[e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**

Total Incremental Combustion Emissions from Construction Activities

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. S-8 Arch Coat
NBCUniversal
Los Angeles, California

Construction Activity
Architectural Coating

Construction Schedule - **88 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Forklifts	2	8.0	60

Construction Equipment Combustion Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr		**CO_2** lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Delivery Truck[e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day		**CO_2** lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**

Total Incremental Combustion Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day		**CO_2** lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2C. Module C Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone C. P-6 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01	0.04	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-1 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity		
Site Preparation	27,007	Square Feet[a]
Footprint	0.62	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8	10
Tractors/Loaders/Backhoes	1	8	
Excavators	1	8	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	6,036	0	457,273

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	17	0.19
Water Truck[m]	1	0.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.08	0.27	0.01	0.00	0.02	0.01	27.20
Water Truck	0.02	0.08	0.00	0.00	0.01	0.00	7.58
Total	**0.10**	**0.35**	**0.01**	**0.00**	**0.03**	**0.01**	**34.78**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.87**	**41.01**	**4.04**	**0.04**	**4.99**	**3,438.71**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.96	0.41
Total		**4.04**	**2.33**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 6036 cubic yards of dirt handled [(6036 cyd x 2,500 lb/cyd)/33 days = 457,273 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 27,007 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-5 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	84,071	Square Feet[a]
Footprint	1.93	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8	10
Tractors/Loaders/Backhoes	1	8	
Excavators	1	8	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	3,274	0	248,030

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	24	0.19
Water Truck[m]	1	2.7

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.40
Water Truck	0.07	0.23	0.01	0.00	0.02	0.01	22.74
Total	**0.19**	**0.61**	**0.03**	**0.00**	**0.05**	**0.03**	**61.14**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.95**	**41.27**	**4.06**	**0.04**	**5.01**	**3,465.07**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	1.96	0.41
Total		**4.06**	**2.34**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3274 cubic yards of dirt handled [(3274 cyd x 2,500 lb/cyd)/33 days = 248,030 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 84,071 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-9 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	43,996 Square Feet[a]	
Footprint	1.01 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8	10
Tractors/Loaders/Backhoes	1	8	
Excavators	1	8	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	5,944	0	450,303

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	17	0.19
Water Truck[m]	1	1.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.008
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.08	0.27	0.01	0.00	0.02	0.01	27.20
Water Truck	0.04	0.12	0.01	0.00	0.01	0.00	11.79
Total	**0.12**	**0.39**	**0.02**	**0.00**	**0.03**	**0.01**	**38.99**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.89**	**41.05**	**4.05**	**0.04**	**4.99**	**3,442.92**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.96	0.41
Total		**4.05**	**2.34**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 5944 cubic yards of dirt handled [(5944 cyd x 2,500 lb/cyd)/33 days = 450,303 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-12 Site Prep
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Construction Activity

Site Preparation	13,939	Square Feet[a]
Footprint	0.32	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	3,136	0	237,576

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**PM2.5** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	12	0.19
Water Truck[m]	1	0.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Total	**0.07**	**0.23**	**0.01**	**0.00**	**0.02**	**0.01**	**23.41**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.84**	**40.89**	**4.03**	**0.04**	**4.98**	**3,427.34**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.95	0.41
Total		**4.03**	**2.32**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3136 cubic yards of dirt handled [(3136 cyd x 2,500 lb/cyd)/33 days = 237,576 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 13,939 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation Footprint	357,192	Square Feet[a]
	8.20	Acres

Site Preparation Schedule - **66 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	8,018	0	303,712

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	12	0.19
Water Truck[m]	1	11.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.29	0.95	0.05	0.00	0.07	0.04	95.16
Total	**0.35**	**1.14**	**0.06**	**0.00**	**0.09**	**0.05**	**114.37**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**20.12**	**41.80**	**4.09**	**0.04**	**5.05**	**3,518.29**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.06	0.06
Fugitive	0.21	1.96	0.41
Total		**4.09**	**2.37**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 8018 cubic yards of dirt handled [(8018 cyd x 2,500 lb/cyd)/66 days = 303,712 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 357,192 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-20 Site Prep
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Construction Activity

Site Preparation	70,132	Square Feet[a]
Footprint	1.61	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8	10
Tractors/Loaders/Backhoes	1	8	
Excavators	1	8	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	0	0	0

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	24	0.19
Water Truck[m]	1	2.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.40
Water Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.37
Total	**0.18**	**0.57**	**0.03**	**0.00**	**0.05**	**0.03**	**57.77**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.94**	**41.23**	**4.05**	**0.04**	**5.01**	**3,461.70**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	1.95	0.41
Total		**4.05**	**2.34**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 0 cubic yards of dirt handled [(0 cyd x 2,500 lb/cyd)/33 days = 0,000 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 70,132 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-21 Site Prep
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Los Angeles, California

Construction Activity

Site Preparation Footprint	22,216 Square Feet[a]	
	0.51 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	3,334	0	252,576

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	12	0.19
Water Truck[m]	1	0.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Total	**0.08**	**0.26**	**0.01**	**0.00**	**0.03**	**0.01**	**25.94**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.85**	**40.92**	**4.03**	**0.04**	**4.99**	**3,429.86**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.95	0.41
Total		**4.03**	**2.32**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3334 cubic yards of dirt handled [(3334 cyd x 2,500 lb/cyd)/33 days = 252,576 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 22,216 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation	10,019 Square Feet[a]	
Footprint	0.23 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	5,556	0	420,909

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	12	0.19
Water Truck[m]	1	0.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Total	**0.07**	**0.22**	**0.01**	**0.00**	**0.02**	**0.01**	**22.57**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.84**	**40.88**	**4.04**	**0.04**	**4.98**	**3,426.49**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.96	0.41
Total		**4.04**	**2.32**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 5556 cubic yards of dirt handled [(5556 cyd x 2,500 lb/cyd)/33 days = 420,909 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 10,019 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-25 Site Prep
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Construction Activity

Site Preparation	10,019	Square Feet[a]
Footprint	0.23	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	5,556	0	420,909

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	12	0.19
Water Truck[m]	1	0.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.01	0.03	0.00	0.00	0	0.00	3.37
Total	**0.07**	**0.22**	**0.01**	**0.00**	**0.02**	**0.01**	**22.57**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.84**	**40.88**	**4.04**	**0.04**	**4.98**	**3,426.49**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.96	0.41
Total		**4.04**	**2.32**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 5556 cubic yards of dirt handled [(5556 cyd x 2,500 lb/cyd)/33 days = 420,909 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 10,019 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation Footprint	70,132 Square Feet[a]	
	1.61 Acres	

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	15,600	0	709,091

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	41	0.19
Water Truck[m]	1	2.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.20	0.65	0.03	0.00	0.05	0.03	65.60
Water Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.37
Total	**0.26**	**0.84**	**0.04**	**0.00**	**0.07**	**0.04**	**84.97**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.79**	**82.15**	**8.06**	**0.07**	**9.99**	**6,892.82**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	3.88	0.81
Total		**8.06**	**4.66**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 15600 cubic yards of dirt handled [(15600 cyd x 2,500 lb/cyd)/55 days = 709,091 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 70,132 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-1 Building
NBCUniversal
Los Angeles, California

		Construction Activity					
		Building Footprint	50,000 Square Foot Structure[a] 0.62 Acres				
Construction Schedule							
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	1	8.0	65				
Cranes	1	8.0					
Pumps	1	8.0					
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Flatbed Truck[a,e]	5	0.1					
Concrete Trucks[a,e]	6	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.09**	**0.00**	**0.00**	**0.01**	**0.00**	**9.26**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**9.00**	**21.40**	**1.12**	**0.02**	**2.74**		**1,870.57**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	1.11	1.02			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**1.12**	**1.03**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 27,007 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-5 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	25,000 Square Foot Structure[a] 1.93 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 84,071 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-9 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	49,000 Square Foot Structure[a]
	1.01 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-12 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	20,000 Square Foot Structure[a] 0.32 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 13,939 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-13 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	357,192 Square Foot Structure[a] 8.20 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 357,192 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-20 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	5,000 Square Foot Structure[a]	
	1.61 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 70,132 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-21 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	30,000 Square Foot Structure[a] 0.51 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 22,216 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-24 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	25,000 Square Foot Structure[a]
	0.23 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 10,019 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-25 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	25,000 Square Foot Structure[a] 0.23 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 10,019 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. P-2 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	420,790 Square Foot Structure[a]	
	1.61 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 70,132 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-1 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-5 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-9 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-12 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-13 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-20 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-21 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-24 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. S-25 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2D. Module D Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone D. P-2 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. C-3 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	47,916	Square Feet[a]
Footprint	1.10	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	10,144	0	768,485

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	24	0.19
Water Truck[m]	1	1.6

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.40
Water Truck	0.04	0.13	0.01	0	0.01	0.01	13.47
Total	**0.16**	**0.51**	**0.03**	**0.00**	**0.04**	**0.03**	**51.88**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.69**	**81.82**	**8.05**	**0.07**	**9.96**	**6,859.73**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	3.88	0.81
Total		**8.05**	**4.65**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 10144 cubic yards of dirt handled [(10144 cyd x 2,500 lb/cyd)/33 days = 768,485 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 47,916 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-3 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	162,914	Square Feet[a]
Footprint	3.74	Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	34,914	0	1,587,000

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	76	0.19
Water Truck[m]	1	5.2

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.03
Total		**3.90**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.37	1.21	0.06	0.00	0.10	0.05	121.61
Water Truck	0.13	0.44	0.02	0.00	0.03	0.02	43.79
Total	**0.50**	**1.65**	**0.08**	**0.00**	**0.13**	**0.07**	**165.40**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**40.04**	**82.96**	**8.12**	**0.07**	**10.05**	**6,973.25**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.08	0.07
Fugitive	0.21	3.90	0.82
Total		**8.12**	**4.70**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 34914 cubic yards of dirt handled [(34914 cyd x 2,500 lb/cyd)/55 days = 1,587,000 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 162,914 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation	30,056	Square Feet[a]
Footprint	0.69	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	18,751	0	1,420,530

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	58	0.19
Water Truck[m]	1	1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.03
Total		**3.90**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.28	0.92	0.04	0.00	0.07	0.04	92.81
Water Truck	0.03	0.08	0.00	0.00	0.01	0.00	8.42
Total	**0.31**	**1.00**	**0.04**	**0.00**	**0.08**	**0.04**	**101.23**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.85**	**82.31**	**8.08**	**0.07**	**10.00**	**6,909.08**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	3.90	0.82
Total		**8.08**	**4.67**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 18751 cubic yards of dirt handled [(18751 cyd x 2,500 lb/cyd)/33 days = 1,420,530 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 30,056 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation Footprint	161,172	Square Feet[a]
	3.70	Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	88,390	0	4,017,727

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	58	0.19
Water Truck[m]	1	5.1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.07
Total		**3.94**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.28	0.92	0.04	0.00	0.07	0.04	92.81
Water Truck	0.13	0.43	0.02	0.00	0.03	0.02	42.95
Total	**0.41**	**1.35**	**0.06**	**0.00**	**0.10**	**0.06**	**135.76**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.95**	**82.66**	**8.14**	**0.07**	**10.02**	**6,943.61**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.06	0.06
Fugitive	0.21	3.94	0.83
Total		**8.14**	**4.70**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 88390 cubic yards of dirt handled [(88390 cyd x 2,500 lb/cyd)/55 days = 4,017,727 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 161,172 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation	80,150	Square Feet[a]
Footprint	1.84	Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	16,466	0	748,455

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	58	0.19
Water Truck[m]	1	2.6

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.28	0.92	0.04	0.00	0.07	0.04	92.81
Water Truck	0.07	0.22	0.01	0.00	0.02	0.01	21.90
Total	**0.35**	**1.14**	**0.05**	**0.00**	**0.09**	**0.05**	**114.70**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.89**	**82.45**	**8.07**	**0.07**	**10.01**	**6,922.55**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.05	0.05
Fugitive	0.21	3.88	0.81
Total		**8.07**	**4.68**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 16466 cubic yards of dirt handled [(16466 cyd x 2,500 lb/cyd)/55 days = 748,455 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 80,150 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. T-8 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	23,958	Square Feet[a]
Footprint	0.55	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	5,328	0	403,636

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	24	0.19
Water Truck[m]	1	0.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.40
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Total	**0.14**	**0.45**	**0.02**	**0.00**	**0.04**	**0.02**	**45.14**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.67**	**81.76**	**8.04**	**0.07**	**9.96**	**6,852.99**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	3.88	0.81
Total		**8.04**	**4.64**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 5328 cubic yards of dirt handled [(5328 cyd x 2,500 lb/cyd)/33 days = 403,636 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 23,958 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. C-3 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	60,000 Square Foot Structure[a]
Footprint	1.10 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 47,916 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-3 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	162,914 Square Foot Structure[a]
Footprint	3.74 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/hr	lb/hr	lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 162,914 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-5 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	30,056 Square Foot Structure[a]
Footprint	0.69 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 30,056 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-9 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	161,172 Square Foot Structure[a]
Footprint	3.70 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr		CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr		CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day		CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**		**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]P-9 Building

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 161,172 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-13 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	80,150 Square Foot Structure[a]
Footprint	1.84 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr		CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]P-13 Building

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 80,150 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. T-8 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	15,000 Square Foot Structure[a]
Footprint	0.55 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO	NO_x	PM_{10}	SO_x	VOC		CO_2
	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]T-8 Building

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 23,958 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. C-3 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]C-3 Arch Coat

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-3 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]P-3 Arch Coat

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-5 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area E.xlsx]P-5 Arch Coat

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-9 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. P-13 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2E. Module E Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone E. T-8 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. P-4 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	91,040	Square Feet[a]
Footprint	2.09	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	52,663	0	3,989,621

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	17	0.14
Water Truck[m]	1	2.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.07
Total		**2.02**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.20	0.01	0.00	0.02	0.01	20.04
Water Truck	0.07	0.24	0.01	0.00	0.02	0.01	24.42
Total	**0.13**	**0.44**	**0.02**	**0.00**	**0.04**	**0.02**	**44.47**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.90**	**41.10**	**4.11**	**0.04**	**5.00**	**3,448.39**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	2.02	0.42
Total		**4.11**	**2.35**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 52663 cubic yards of dirt handled [(52663 cyd x 2,500 lb/cyd)/33 days = 3,989,621 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 91,040 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. H-1_P-12_C-1_C-4 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	159,865	Square Feet[a]
Footprint	3.67	Acres

Site Preparation Schedule - **55 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]**	**Moisture Content[d]**	**Dirt Handled[a]**	**Debris Handled[a]**	**Dirt Handled[j]**
	mph		cy	cy	lb/day
0.35	3.8	7.9	62,044	0	2,820,182

Construction Vehicle (Mobile Source) Emission Factors

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	122	0.14
Water Truck[m]	1	5.1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr	lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency**	**PM_{10}[q]**
	%	lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.05
Total		**3.92**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Haul Truck	0.44	1.43	0.07	0.00	0.11	0.06	143.84
Water Truck	0.13	0.43	0.02	0.00	0.03	0.02	42.95
Total	**0.57**	**1.86**	**0.09**	**0.00**	**0.14**	**0.08**	**186.79**

Total Incremental Localized Emissions from Construction Activities

	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-site Emissions	**40.10**	**83.17**	**8.15**	**0.07**	**10.06**	**6,994.64**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.09	0.08
Fugitive	0.21	3.92	0.82
Total		**8.15**	**4.72**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 62044 cubic yards of dirt handled [(62044 cyd x 2,500 lb/cyd)/55 days = 2,820,182 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 159,865 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. S-16 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	29,185	Square Feet[a]
	0.67	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	6,456	0	489,091

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	21	0.14
Water Truck[m]	1	1

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.08	0.25	0.01	0.00	0.02	0.01	24.76
Water Truck	0.03	0.08	0.00	0.00	0.01	0.00	8.42
Total	**0.11**	**0.33**	**0.01**	**0.00**	**0.03**	**0.01**	**33.18**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.87**	**40.98**	**4.04**	**0.04**	**4.99**	**3,437.11**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.96	0.41
Total		**4.04**	**2.33**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 6456 cubic yards of dirt handled [(6456 cyd x 2,500 lb/cyd)/33 days = 489,091 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 29,185 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. P-4 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	273,121 Square Foot Structure[a]	
	2.09 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 91,040 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. C-1 Building
NBCUniversal
Los Angeles, California

		Construction Activity					
		Building	50,000 Square Foot Structure[a]				
		Footprint	3.67 Acres				
Construction Schedule							
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	1	8.0	65				
Cranes	1	8.0					
Pumps	1	8.0					
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Flatbed Truck[a,e]	4	0.1					
Concrete Trucks[a,e]	4	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.07**	**0.00**	**0.00**	**0.01**	**0.00**	**6.74**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**9.00**	**21.37**	**1.12**	**0.02**	**2.74**		**1,868.05**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 159,865 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. C-4 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	20,000 Square Foot Structure[a] 3.67 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 159,865 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. H-1 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	450,000 Square Foot Structure[a]
Footprint	3.67 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	2	8.0	75
Cranes	1	8.0	
Pumps	2	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	5	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19	870.33
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	5.04	9.25	0.66	0.01	1.59	793.71
Total	**13.39**	**30.38**	**1.68**	**0.03**	**4.12**	**2,693.33**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.09**	**0.00**	**0.00**	**0.01**	**0.00**	**9.26**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**13.41**	**30.47**	**1.69**	**0.03**	**4.12**	**2,702.59**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.68	1.55
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.69**	**1.55**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area F.xlsx]H-1 Building

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 159,865 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. S-16 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	50,000 Square Foot Structure[a]
	0.67 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	60
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 29,185 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. P-4 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. C-1,C-4 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. H-1,P-12 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	70				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	5	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**4.21**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.94**	**0.49**	**0.01**	**1.19**		**874.54**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2F. Module F Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone F. S-16 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.48	0.45
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**0.49**	**0.45**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area F.xlsx]S-16 Arch Coat

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-2 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	27,878	Square Feet[a]
Footprint	0.64	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	6,156	0	466,364

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	16	0.11
Water Truck[m]	1	0.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.05	0.15	0.01	0.00	0.01	0.01	14.82
Water Truck	0.02	0.08	0.00	0.00	0.01	0.00	7.58
Total	**0.07**	**0.23**	**0.01**	**0.00**	**0.02**	**0.01**	**22.40**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.83**	**40.88**	**4.04**	**0.04**	**4.98**	**3,426.33**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.96	0.41
Total		**4.04**	**2.32**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 6156 cubic yards of dirt handled [(6156 cyd x 2,500 lb/cyd)/33 days = 466,364 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 27,878 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-4_T-5 Site Prep
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Construction Activity

Site Preparation	163,786	Square Feet[a]
Footprint	3.76	Acres

Site Preparation Schedule - 33 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	17,756	0	1,345,152

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	40	0.11
Water Truck[m]	1	5.2

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.02
Total		**3.89**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.11	0.37	0.02	0.00	0.03	0.02	37.06
Water Truck	0.13	0.44	0.02	0.00	0.03	0.02	43.79
Total	**0.24**	**0.81**	**0.04**	**0.00**	**0.06**	**0.04**	**80.85**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**39.78**	**82.12**	**8.07**	**0.07**	**9.98**	**6,888.70**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	3.89	0.82
Total		**8.07**	**4.66**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 17756 cubic yards of dirt handled [(17756 cyd x 2,500 lb/cyd)/33 days = 1,345,152 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 163,786 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-1 Site Prep
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Construction Activity

Site Preparation	43,996 Square Feet[a]	
Footprint	1.01 Acres	

Site Preparation Schedule - **44 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	8,702	0	494,432

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	16	0.11
Water Truck[m]	1	1.4

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)^3/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.05	0.15	0.01	0.00	0.01	0.01	14.82
Water Truck	0.04	0.12	0.01	0.00	0.01	0.00	11.79
Total	**0.09**	**0.27**	**0.02**	**0.00**	**0.02**	**0.01**	**26.61**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.85**	**40.92**	**4.05**	**0.04**	**4.98**	**3,430.54**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.96	0.41
Total		**4.05**	**2.33**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 8702 cubic yards of dirt handled [(8702 cyd x 2,500 lb/cyd)/44 days = 494,432 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 43,996 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

		Site Preparation Footprint	0 Square Feet[a] 0.00 Acres
Site Preparation Schedule -	**33** days[a]		

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	0	0	0

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	4	0.1
Water Truck[m]	1	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x (wind speed percent/15) x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) x (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**3.87**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**3.37**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**39.55**	**81.35**	**8.01**	**0.07**	**9.92**	**6,811.22**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	3.87	0.81
Total		**8.01**	**4.62**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, October 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 0 cubic yards of dirt handled [(0 cyd x 2,500 lb/cyd)/33 days = 0,000 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 0,000 square feet of disturbed area
n) USEPA, AP-42, October 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-6 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity		
Site Preparation	40,946	Square Feet[a]
Footprint	0.94	Acres

Site Preparation Schedule - 33 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	5,740	0	434,848

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	27	0.19
Water Truck[m]	1	1.3

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.13	0.43	0.02	0.00	0.03	0.02	43.20
Water Truck	0.03	0.11	0.01	0.00	0.01	0.00	10.95
Total	**0.16**	**0.54**	**0.03**	**0.00**	**0.04**	**0.02**	**54.15**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.93**	**41.20**	**4.06**	**0.04**	**5.00**	**3,458.08**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	1.96	0.41
Total		**4.06**	**2.35**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 5740 cubic yards of dirt handled [(5740 cyd x 2,500 lb/cyd)/33 days = 434,848 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 40,946 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-7 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	98,881	Square Feet[a]
Footprint	2.27	Acres

Site Preparation Schedule - **77 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	11,016	0	357,662

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	27	0.19
Water Truck[m]	1	3.2

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.8**	**40.7**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.13	0.43	0.02	0.00	0.03	0.02	43.20
Water Truck	0.08	0.27	0.01	0.00	0.02	0.01	26.95
Total	**0.21**	**0.70**	**0.03**	**0.00**	**0.05**	**0.03**	**70.15**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.98**	**41.36**	**4.06**	**0.04**	**5.01**	**3,474.08**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	1.96	0.41
Total		**4.06**	**2.35**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 11016 cubic yards of dirt handled [(11016 cyd x 2,500 lb/cyd)/77 days = 357,662 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 98,881 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-3 3b Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	118,048	Square Feet[a]
Footprint	2.71	Acres

Site Preparation Schedule - 33 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	15,334	0	1,161,667

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	30	0.14
Water Truck[m]	1	3.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.02
Total		**3.89**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.11	0.35	0.02	0.00	0.03	0.01	35.37
Water Truck	0.10	0.32	0.02	0.00	0.03	0.01	32.00
Total	**0.21**	**0.67**	**0.04**	**0.00**	**0.06**	**0.02**	**67.37**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**39.74**	**81.98**	**8.07**	**0.07**	**9.98**	**6,875.22**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	3.89	0.82
Total		**8.07**	**4.66**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 15334 cubic yards of dirt handled [(15334 cyd x 2,500 lb/cyd)/33 days = 1,161,667 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 118,048 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-11 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	44,867 Square Feet[a]	
	1.03 Acres	

Site Preparation Schedule - 33 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	8,514	0	645,000

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	40	0.11
Water Truck[m]	1	1.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**3.88**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.11	0.37	0.02	0.00	0.03	0.02	37.06
Water Truck	0.04	0.13	0.01	0.00	0.01	0.01	12.63
Total	**0.15**	**0.50**	**0.03**	**0.00**	**0.04**	**0.03**	**49.69**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**39.69**	**81.81**	**8.05**	**0.07**	**9.96**	**6,857.54**

Combustion and Fugitive Summary

	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.03	0.03
Fugitive	0.21	3.88	0.81
Total		**8.05**	**4.65**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 8514 cubic yards of dirt handled [(8514 cyd x 2,500 lb/cyd)/33 days = 645,000 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 44,867 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. H-2 P-14 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity		
Site Preparation	87,991	Square Feet[a]
Footprint	2.02	Acres

Site Preparation Schedule - 55 days[a]

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	2	8.0	20
Tractors/Loaders/Backhoes	2	8.0	
Excavators	2	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	36,843	0	1,674,682

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	122	0.14
Water Truck[m]	1	2.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	24.03	50.01	2.15	0.04	5.61	3,825.66
Tractors/Loaders/Backhoes	6.39	11.56	0.89	0.01	1.77	1,068.89
Excavators	9.11	19.74	1.09	0.02	2.53	1,913.30
Total	**39.54**	**81.31**	**4.14**	**0.07**	**9.92**	**6,807.85**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	3.85
Storage Piles	68	0.02
Material Handling	68	0.03
Total		**3.90**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.44	1.43	0.07	0.00	0.11	0.06	143.84
Water Truck	0.07	0.23	0.01	0.00	0.02	0.01	23.58
Total	**0.51**	**1.66**	**0.08**	**0.00**	**0.13**	**0.07**	**167.42**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**40.04**	**82.97**	**8.12**	**0.07**	**10.05**	**6,975.27**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	4.14	3.81
Combustion (Onroad)	0.96	0.08	0.08
Fugitive	0.21	3.90	0.82
Total		**8.12**	**4.70**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 36843 cubic yards of dirt handled [(36843 cyd x 2,500 lb/cyd)/55 days = 1,674,682 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 87,991 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-2 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	50,000 Square Foot Structure[a]
	0.64 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 27,878 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-4 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	100,000 Square Foot Structure[a] 3.76 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 163,786 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-5 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	40,000 Square Foot Structure[a]
	3.76 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 163,786 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-9 Building
NBCUniversal
Los Angeles, California

	Construction Activity		
	Building	45,000 Square Foot Structure[a]	
	Footprint	0.00 Acres	

Construction Schedule

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Flatbed Truck	0.01	0.03	0.002	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.002	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.000	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.004**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-Site Emissions	**9.00**	**21.39**	**1.12**	**0.02**	**2.74**	**1,869.73**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.004	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 0,000 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-6 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	25,000 Square Foot Structure[a]
	0.94 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 40,946 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-7 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	100,000 Square Foot Structure[a] 2.27 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 98,881 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-3-3b Building
NBCUniversal
Los Angeles, California

		Construction Activity					
		Building Footprint	60,000 Square Foot Structure[a] 2.71 Acres				
Construction Schedule							
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	1	8.0	65				
Cranes	1	8.0					
Pumps	1	8.0					
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Cranes	0.57	1.53	0.07	0.001	0.17		128.66
Pumps	0.31	0.58	0.04	0.001	0.10		49.61
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Flatbed Truck[a,e]	3	0.1					
Concrete Trucks[a,e]	4	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/hr	lb/hr		lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59		435.17
Cranes	4.56	12.23	0.54	0.01	1.35		1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79		396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**		**1,861.31**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**		**1,867.20**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 118,048 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-11 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	100,000 Square Foot Structure[a]
	1.03 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 44,867 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. H-2 P-14 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building	450,000 Square Foot Structure[a]
Footprint	2.02 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	2	8.0	75
Cranes	1	8.0	
Pumps	2	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	5	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19	870.33
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	5.04	9.25	0.66	0.01	1.59	793.71
Total	**13.39**	**30.38**	**1.68**	**0.03**	**4.12**	**2,693.33**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.09**	**0.00**	**0.00**	**0.01**	**0.00**	**9.26**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**13.41**	**30.47**	**1.69**	**0.03**	**4.12**	**2,702.59**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.68	1.55
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.69**	**1.55**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 87,991 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-2 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**				**CO_2**
Equipment Type	lb/day	lb/day	lb/day				lb/day
Forklifts	3.79	8.90	0.48				870.33
Total	**3.79**	**8.90**	**0.48**				**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.00**	**0.00**		**872.86**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***		
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**		
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
Significance Threshold[g]				**6**			
Exceed Significance?				**NO**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-4 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**				**CO_2**
Equipment Type	lb/day	lb/day	lb/day				lb/day
Forklifts	3.79	8.90	0.48				870.33
Total	**3.79**	**8.90**	**0.48**				**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.00**	**0.00**		**872.86**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***		
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**		
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
Significance Threshold[g]				**6**			
Exceed Significance?				**NO**			
				P:\N\NBCUniversal\AQ EIR\Emissions estimates\Construction Emissions\Alt 10\[Area G.xlsx]T-4 Arch Coat			

Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-5 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**				**CO_2**
Equipment Type	lb/day	lb/day	lb/day				lb/day
Forklifts	3.79	8.90	0.48				870.33
Total	**3.79**	**8.90**	**0.48**				**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.00**	**0.00**		**872.86**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***		
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**		
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
Significance Threshold[g]				**6**			
Exceed Significance?				**NO**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-1 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**				**CO_2**
Equipment Type	lb/day	lb/day	lb/day				lb/day
Forklifts	3.79	8.90	0.48				870.33
Total	**3.79**	**8.90**	**0.48**				**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.00**	**0.00**		**872.86**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***		
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**		
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
Significance Threshold[g]				**6**			
Exceed Significance?				**NO**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-9 Arch Coats
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-6 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-7 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-3-3b Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. T-11 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**				**CO_2**
Equipment Type	lb/day	lb/day	lb/day				lb/day
Forklifts	3.79	8.90	0.48				870.33
Total	**3.79**	**8.90**	**0.48**				**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.00**	**0.00**		**872.86**
Significance Threshold[g]	***412***	***221***	***11***	***12***	***13***		
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**		
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			
Significance Threshold[g]				**6**			
Exceed Significance?				**NO**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2G. Module G Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone G. H-2 P-14 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**88 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	70				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.0033	0.0018	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	5	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.04	0.00	0.00	0.00	0.00	4.21
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**4.21**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.94**	**0.49**	**0.01**	**1.19**		**874.54**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. S-27 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation	46,174 Square Feet[a]	
Footprint	1.06 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	4,444	0	336,667

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	21	0.14
Water Truck[m]	1	1.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2) $^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.08	0.25	0.01	0.00	0.02	0.01	24.76
Water Truck	0.04	0.13	0.01	0.00	0.01	0.01	12.63
Total	**0.12**	**0.38**	**0.02**	**0.00**	**0.03**	**0.02**	**37.39**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.88**	**41.03**	**4.05**	**0.04**	**4.99**	**3,441.32**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.96	0.41
Total		**4.05**	**2.34**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 4444 cubic yards of dirt handled [(4444 cyd x 2,500 lb/cyd)/33 days = 336,667 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 46,174 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation	46,174	Square Feet[a]
Footprint	1.06	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	52,000	0	3,939,394

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	17	0.14
Water Truck[m]	1	1.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.07
Total		**2.02**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.06	0.20	0.01	0.00	0.02	0.01	20.04
Water Truck	0.04	0.13	0.01	0.00	0.01	0.01	12.63
Total	**0.10**	**0.33**	**0.02**	**0.00**	**0.03**	**0.02**	**32.68**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.87**	**40.99**	**4.11**	**0.04**	**4.99**	**3,436.60**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	2.02	0.42
Total		**4.11**	**2.35**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 52000 cubic yards of dirt handled [(52000 cyd x 2,500 lb/cyd)/33 days = 3,939,394 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 46,174 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity		
Site Preparation	108,029	Square Feet[a]
Footprint	2.48	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	12,000	0	909,091

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	17	0.14
Water Truck[m]	1	3.5

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.02
Total		**1.97**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.06	0.20	0.01	0.00	0.02	0.01	20.04
Water Truck	0.09	0.29	0.01	0.00	0.02	0.01	29.48
Total	**0.15**	**0.49**	**0.02**	**0.00**	**0.04**	**0.02**	**49.52**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.92**	**41.15**	**4.06**	**0.04**	**5.00**	**3,453.44**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.97	0.41
Total		**4.06**	**2.34**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 12000 cubic yards of dirt handled [(12000 cyd x 2,500 lb/cyd)/33 days = 909,091 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 108,029 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity

Site Preparation	22,216	Square Feet[a]
Footprint	0.51	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[a]** cy	**Debris Handled[a]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	1,416	0	107,273

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	21	0.14
Water Truck[m]	1	0.8

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content $^{1.5}$)/(moisture content $^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5) $^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.08	0.25	0.01	0.00	0.02	0.01	24.76
Water Truck	0.02	0.07	0.00	0.00	0.01	0.00	6.74
Total	**0.10**	**0.32**	**0.01**	**0.00**	**0.03**	**0.01**	**31.50**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.86**	**40.97**	**4.03**	**0.04**	**4.99**	**3,435.42**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.01	0.01
Fugitive	0.21	1.95	0.41
Total		**4.03**	**2.33**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 1416 cubic yards of dirt handled [(1416 cyd x 2,500 lb/cyd)/33 days = 107,273 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 22,216 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

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Construction Activity		
Building Footprint	200,000 Square Foot Structure[a]	
	1.06 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074	54.40
Cranes	0.571	1.529	0.068	0.001	0.168	128.66
Pumps	0.315	0.578	0.041	0.001	0.099	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**9.0**	**21.3**	**1.1**	**0.0**	**2.7**	**1861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.07**	**0.00**	**0.00**	**0.01**	**0.00**	**6.74**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.0**	**21.4**	**1.1**	**0.0**	**2.7**	**1868.05**

Combustion and Fugitive Summary	PM2.5 Fraction[g]	PM10 lb/day	PM2.5 lb/day
Combustion (Offroad)	0.92	1.1	1.0
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**1.1**	**1.0**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 46,174 square feet of disturbed area
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. P-10 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	200,000 Square Foot Structure[a]	
	1.06 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074	54.40
Cranes	0.571	1.529	0.068	0.001	0.168	128.66
Pumps	0.315	0.578	0.041	0.001	0.099	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**9.0**	**21.3**	**1.1**	**0.0**	**2.7**	**1861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.0**	**21.4**	**1.1**	**0.0**	**2.7**	**1869.73**

Combustion and Fugitive Summary	PM2.5 Fraction[g]	PM10 lb/day	PM2.5 lb/day
Combustion (Offroad)	0.92	1.1	1.0
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**1.1**	**1.0**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 46,174 square feet of disturbed area
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. P-11 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	324,086 Square Foot Structure[a]	
	2.48 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074	54.40
Cranes	0.571	1.529	0.068	0.001	0.168	128.66
Pumps	0.315	0.578	0.041	0.001	0.099	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**9.0**	**21.3**	**1.1**	**0.0**	**2.7**	**1861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**8.42**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.0**	**21.4**	**1.1**	**0.0**	**2.7**	**1869.73**

Combustion and Fugitive Summary	PM2.5 Fraction[g]	PM10 lb/day	PM2.5 lb/day
Combustion (Offroad)	0.92	1.1	1.0
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**1.1**	**1.0**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 108,029 square feet of disturbed area
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. S-15 Building
NBCUniversal
Los Angeles, California

Construction Activity		
Building Footprint	5,000 Square Foot Structure[a]	
	0.51 Acres	

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NOx lb/hr	PM10 lb/hr	SOx lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074	54.40
Cranes	0.571	1.529	0.068	0.001	0.168	128.66
Pumps	0.315	0.578	0.041	0.001	0.099	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NOx lb/mile	PM10 lb/mile	SOx lb/mile	VOC lb/mile	PM2.5 lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	4	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**9.0**	**21.3**	**1.1**	**0.0**	**2.7**	**1861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	PM2.5 lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.07**	**0.00**	**0.00**	**0.01**	**0.00**	**6.74**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day	SOx lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.0**	**21.4**	**1.1**	**0.0**	**2.7**	**1868.05**

Combustion and Fugitive Summary	PM2.5 Fraction[g]	PM10 lb/day	PM2.5 lb/day
Combustion (Offroad)	0.92	1.1	1.0
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**1.1**	**1.0**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 22,216 square feet of disturbed area
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. S-27,P-10 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**132 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0	0	0	0	0	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**872.86**

Combustion and Fugitive Summary	**PM2.5 Fraction[g]**	**PM10**	**PM2.5**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.5	0.4
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**0.5**	**0.4**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. P-11 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity Architectural Coating					
Construction Schedule -		**22 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0	0	0	0	0	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**872.86**
Combustion and Fugitive Summary		**PM2.5 Fraction[g]**	**PM10**	**PM2.5**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.5	0.4			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0	0			
Total			**0.5**	**0.4**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2H. Module H Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone H. S-15 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**44 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.237	0.556	0.030	0.001	0.074		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.012822	0.041846	0.001996	0.00004013	0.00329320	0.001752	4.21080792
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NOx**	**PM10**	**SOx**	**VOC**	**PM2.5**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0	0	0	0	0	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NOx**	**PM10**	**SOx**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.8**	**8.9**	**0.5**	**0.0**	**1.2**		**872.86**

Combustion and Fugitive Summary	**PM2.5 Fraction[g]**	**PM10**	**PM2.5**
		lb/day	lb/day
Combustion (Offroad)	0.92	0.5	0.4
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0	0
Total		**0.5**	**0.4**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. S-22 & S-23 Site Prep
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Construction Activity

Site Preparation	209,959 Square Feet[e]	
Footprint	4.82 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	**CO** lb/hr	**NO_x** lb/hr	**PM_{10}** lb/hr	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	**Moisture Content[d]**
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	**Precipitation Days[e]**	**Mean Wind Speed Percent[f]**	**TSP Fraction**	**Area[g] (acres)**
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	**Mean Wind Speed[i]** mph	**Moisture Content[d]**	**Dirt Handled[n]** cy	**Debris Handled[n]** cy	**Dirt Handled[j]** lb/day
0.35	3.8	7.9	8,888	0	673,333

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NO_x** lb/mile	**PM_{10}** lb/mile	**SO_x** lb/mile	**VOC** lb/mile	**$PM_{2.5}$** lb/mile	**CO_2** lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**One WayTrip Length (miles)**
Haul Truck[l]	17	0.1
Water Truck[m]	1	6.7

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/hr	**VOC** lb/hr	**CO_2** lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)^3/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	**Control Efficiency** %	**PM_{10}[q]** lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**$PM_{2.5}$** lb/day	**CO_2** lb/day
Haul Truck	0.04	0.14	0.01	0.00	0.01	0.01	14.32
Water Truck	0.17	0.56	0.03	0.00	0.04	0.02	56.42
Total	**0.21**	**0.70**	**0.04**	**0.00**	**0.05**	**0.03**	**70.74**

Total Incremental Localized Emissions from Construction Activities

Sources	**CO** lb/day	**NO_x** lb/day	**PM_{10}** lb/day	**SO_x** lb/day	**VOC** lb/day	**CO_2** lb/day
On-site Emissions	**19.98**	**41.36**	**4.07**	**0.04**	**5.01**	**3,474.67**

Combustion and Fugitive Summary	**$PM_{2.5}$ Fraction[r]**	**PM_{10}** lb/day	**$PM_{2.5}$** lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	1.96	0.41
Total		**4.07**	**2.35**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided in the SCAQMD web-site: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph as reported in 1981 meteorological data.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
j) Assuming 8888 cubic yards of dirt handled [(8888 cyd x 2,500 lb/cyd)/33 days = 673,333 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Based on the conservative distance approximation within the disturbed area.
m) Assumed six foot wide water truck traverses over 209,959 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden< 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. T-10 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity		
Site Preparation	26,136	Square Feet[a]
Footprint	0.60	Acres

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8	10
Tractors/Loaders/Backhoes	1	8	
Excavators	1	8	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	3,562	0	269,848

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	24	0.19
Water Truck[m]	1	0.9

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations
Equations:
Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)
Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)
Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.01
Total		**1.96**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.12	0.38	0.02	0.00	0.03	0.02	38.40
Water Truck	0.02	0.08	0.00	0.00	0.01	0.00	7.58
Total	**0.14**	**0.46**	**0.02**	**0.00**	**0.04**	**0.02**	**45.98**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**19.90**	**41.12**	**4.05**	**0.04**	**5.00**	**3,449.91**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.02	0.02
Fugitive	0.21	1.96	0.41
Total		**4.05**	**2.33**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3562 cubic yards of dirt handled [(3562 cyd x 2,500 lb/cyd)/33 days = 269,848 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 26,136 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. S-22 & S-23 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	40,000 Square Foot Structure[a]
	4.82 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	4	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	3.37
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,867.20**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 209,959 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. T-10 Building
NBCUniversal
Los Angeles, California

Construction Activity	
Building Footprint	20,000 Square Foot Structure[a] 0.60 Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	6	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.02	0.05	0.00	0.00	0.00	0.00	5.05
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.08**	**0.00**	**0.00**	**0.01**	**0.00**	**7.58**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-Site Emissions	**9.00**	**21.38**	**1.12**	**0.02**	**2.74**	**1,868.89**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.12**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 26,136 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. S-22 & S-23 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**44 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2I. Module I Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone I. T-10 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**44 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	7	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.02	0.06	0.00	0.00	0.00	0.00	5.90
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**5.90**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.80**	**8.95**	**0.49**	**0.01**	**1.19**		**876.23**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2J. Module J Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone J. PF-1 Site Prep
NBCUniversal
Los Angeles, California

Construction Activity

Site Preparation Footprint	210,830 Square Feet[a]	
	4.84 Acres	

Site Preparation Schedule - **33 days[a]**

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	10
Tractors/Loaders/Backhoes	1	8.0	
Excavators	1	8.0	

Construction Equipment Emission Factors

Equipment Type[c]	CO lb/hr	NO_x lb/hr	PM_{10} lb/hr	SO_x lb/hr	VOC lb/hr	CO_2 lb/hr
Rubber Tired Dozers	1.50	3.13	0.13	0.002	0.35	239.10
Tractors/Loaders/Backhoes	0.40	0.72	0.06	0.001	0.11	66.81
Excavators	0.57	1.23	0.07	0.001	0.16	119.58

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	34	1.7	0.5	0.1

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	3.8	7.9	3,334	0	252,576

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	NO_x lb/mile	PM_{10} lb/mile	SO_x lb/mile	VOC lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Heavy-Duty Truck[k]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	12	0.19
Water Truck[m]	1	6.7

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/hr	VOC lb/hr	CO_2 lb/day
Rubber Tired Dozers	12.02	25.00	1.08	0.02	2.81	1,912.83
Tractors/Loaders/Backhoes	3.19	5.78	0.45	0.01	0.89	534.45
Excavators	4.56	9.87	0.54	0.01	1.27	956.65
Total	**19.77**	**40.66**	**2.07**	**0.04**	**4.96**	**3,403.92**

Incremental Increase in Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM_{10} Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM_{10} Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x (TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM_{10} Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier) x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	PM_{10}[q] lb/day
Clearing	68	1.93
Storage Piles	68	0.02
Material Handling	68	0.00
Total		**1.95**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	$PM_{2.5}$ lb/day	CO_2 lb/day
Haul Truck	0.06	0.19	0.01	0.00	0.02	0.01	19.20
Water Truck	0.17	0.56	0.03	0.00	0.04	0.02	56.42
Total	**0.23**	**0.75**	**0.04**	**0.00**	**0.06**	**0.03**	**75.63**

Total Incremental Localized Emissions from Construction Activities

Sources	CO lb/day	NO_x lb/day	PM_{10} lb/day	SO_x lb/day	VOC lb/day	CO_2 lb/day
On-site Emissions	**20.00**	**41.41**	**4.06**	**0.04**	**5.02**	**3,479.55**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[r]	PM_{10} lb/day	$PM_{2.5}$ lb/day
Combustion (Offroad)	0.92	2.07	1.90
Combustion (Onroad)	0.96	0.04	0.04
Fugitive	0.21	1.95	0.41
Total		**4.06**	**2.35**

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Notes:

a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Oct 2006. Assumed equipment is diesel fueled.
d) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations
e) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
f) Percent of time mean wind speed exceeds 12 mph calculated in 1981 meteorological data recorded at the Burbank monitoring station.
g) Assumed storage piles are 0.1 acres in size
h) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
i) Daily average of wind speeds calculated in 1981 meteorological data recorded at the Burbank monitoring station.
j) Assuming 3334 cubic yards of dirt handled [(3334 cyd x 2,500 lb/cyd)/33 days = 252,576 lb/day]
k) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
l) Conservatively estimated to be the distance a haul truck travels within the construction zone.
m) Assumed six foot wide water truck traverses over 210,830 square feet of disturbed area
n) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 µm
o) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
p) USEPA, AP-42, Nov 2006, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1
q) Includes watering at least three times a day per Rule 403 (68% control efficiency).
r) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2J. Module J Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone J. PF-1 Building
NBCUniversal
Los Angeles, California

Construction Activity

Building	30,000	Square Foot Structure[a]
Footprint	4.84	Acres

Construction Schedule

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Forklifts	1	8.0	65
Cranes	1	8.0	
Pumps	1	8.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07	54.40
Cranes	0.57	1.53	0.07	0.001	0.17	128.66
Pumps	0.31	0.58	0.04	0.001	0.10	49.61

Construction Vehicle (Mobile Source) Emission Factors

	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	Trip Length (miles)
Flatbed Truck[a,e]	3	0.1
Concrete Trucks[a,e]	3	0.1
Water Truck[f]	0	0

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/hr	lb/hr	lb/day
Forklifts	1.89	4.45	0.24	0.00	0.59	435.17
Cranes	4.56	12.23	0.54	0.01	1.35	1,029.29
Pumps	2.52	4.62	0.33	0.00	0.79	396.85
Total	**8.97**	**21.31**	**1.11**	**0.02**	**2.73**	**1,861.31**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NO_x	PM_{10}	SO_x	VOC	$PM_{2.5}$	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Concrete Trucks	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**5.05**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO	NO_x	PM_{10}	SO_x	VOC	CO_2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**8.99**	**21.36**	**1.11**	**0.02**	**2.74**	**1,866.36**

Combustion and Fugitive Summary	$PM_{2.5}$ Fraction[g]	PM_{10}	$PM_{2.5}$
		lb/day	lb/day
Combustion (Offroad)	0.92	1.11	1.02
Combustion (Onroad)	0.96	0.00	0.00
Fugitive	0.21	0.00	0.00
Total		**1.11**	**1.03**

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.3) Burden Model, Winter 2008, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively estimated to be the distance a haul truck travels within the construction zone.
f) Assumed six foot wide water truck traverses over 210,830 square feet of disturbed area
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

A-2-2J. Module J Mass Emission Estimates for Alternative 10 for each Construction Module, Building Type and Construction Activity, Zone J. PF-1 Arch Coat
NBCUniversal
Los Angeles, California

		Construction Activity					
		Architectural Coating					
Construction Schedule -		**66 days[a]**					
Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**				
Forklifts	2	8.0	60				
Construction Equipment Combustion Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr		lb/hr
Forklifts	0.24	0.56	0.03	0.001	0.07		54.40
Construction Vehicle (Mobile Source) Emission Factors							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.013	0.042	0.002	0.00004	0.003	0.002	4.21
Construction Worker Number of Trips and Trip Length							
Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**					
Delivery Truck[e]	3	0.1					
Water Truck[f]	0	0					
Incremental Increase in Onsite Combustion Emissions from Construction Equipment							
Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
Forklifts	3.79	8.90	0.48	0.01	1.19		870.33
Total	**3.79**	**8.90**	**0.48**	**0.01**	**1.19**		**870.33**
Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles							
Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**	**$PM_{2.5}$**	**CO_2**
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Delivery Truck	0.01	0.03	0.00	0.00	0.00	0.00	2.53
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**2.53**
Total Incremental Combustion Emissions from Construction Activities							
	CO	**NO_x**	**PM_{10}**	**SO_x**	**VOC**		**CO_2**
Sources	lb/day	lb/day	lb/day	lb/day	lb/day		lb/day
On-Site Emissions	**3.79**	**8.92**	**0.49**	**0.01**	**1.19**		**872.86**
Combustion and Fugitive Summary		**$PM_{2.5}$ Fraction[g]**	**PM_{10}**	**$PM_{2.5}$**			
			lb/day	lb/day			
Combustion (Offroad)		0.92	0.48	0.45			
Combustion (Onroad)		0.96	0.00	0.00			
Fugitive		0.21	0.00	0.00			
Total			**0.49**	**0.45**			

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Notes:
a) Based on building specifications and general construction schedule.
b) Equipment Emission Factors (EFs) provided by SCAQMD (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html).
c) SCAB values provided by the ARB, Aug 2004. Assumed all equipment is diesel fueled.
d) CARB, EMFAC2007 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT
e) Conservatively assumed that trucks travels 0.1 miles through the construction zone.
f) No water trucks needed for the architectural coating.
g) ARB's CEIDARS database $PM_{2.5}$ fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Appendix B

Alternative 10 Operation Emission Estimates

Table B.1-1A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Hotel (Studio, Entertainment and Business Area)
Natural Gas Combustion

Land Use	Area (sf) or number of units [1]	Usage Factor to determine daily usage [2] (cf/sf-month)	Usage [3] (10^6 scf)	Criteria Pollutant Emission Factors [4] ($lb/10^6$ scf)						Criteria Pollutant Emissions (lbs/yr)						
				VOC	NO_x	SO_x [5]	CO	PM_{10}	$PM_{2.5}$ [6]	VOC	NO_x	SO_x	CO	PM_{10}	$PM_{2.5}$	CO_2
Hotel	900,000	4.8	52.6	5.30	120.00	0.60	20.00	0.20	0.20	279	6,307	32	1,051	11	11	6,454,417

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1. Area has been referenced from the Evolution Plan.

2. Usage Factor has been referenced from SCAQMD, CEQA Air Quality Handbook, April 1993, Appendix to Chapter 9, Table A9-12-A.

3. Usage equals gross square foot of each type of each type of land use multiplied by the natural gas usage rate to determine daily usage divided by 30 days per month and divided by 1,000,000 mmcf per cf multiplied by 365 days per year. Usage = [(A x UF) / 30 dy/mo / 1,000,000 mmcf/cf] x 365 dys/yr.

4. Criteria pollutant emission factors were referenced from SCAQMD, CEQA Air Quality Handbook, April 1993, Appendix to Chapter 9, Table A9-12-B. SOx has been referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 1.4, Table 1.4-2.

5. SO_x emission factor was referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 1.4, Table 1.4-2.

6. The emissions of $PM_{2.5}$ were obtained by multiplying the PM_{10} emissions by the respective fraction of total PM. The $PM_{2.5}$ fraction of PM_{10} was referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, External Combustion, Gaseous Fuel Except Petroleum and Industrial Process Heaters.

7. Criteria pollutant emissions have been calculated by multiplying the usage by the emission factor.

Table B.1-1B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Toxic Air Contaminant Emission Rate Calculations

Hotel (Studio, Entertainment and Business Area)
Natural Gas Combustion

Fuel Usage	
Land Use	Hotel
Usage [1] (10^6 scf/yr)	52.56

Emission Calculations			
Pollutant Name	**CAS No.**	**Emission Factor**	**Annual Emissions**
		lbs/MMscf	**lbs/year**
Benzene	71432	0.008	0.42
Formaldehyde	50000	0.017	0.89
Total PAHs (excluding Naphthalene)	1151	0.0001	0.005
Naphthalene	91203	0.0003	0.02
Acetaldehyde	75070	0.0043	0.23
Acrolein	107028	0.0027	0.14
Ammonia*	7664417	18	946
Ethyl benzene	100414	0.0095	0.50
Hexane	110543	0.0063	0.33
Toluene	108883	0.0366	1.92
Xylene	1330207	0.0272	1.43

Notes: 1.14\projects\N\NBCUniversal\AQ EIR\Emissions estimates\Future Emissions\Alt 10\[Alt10 Hotel and Associated.xls]NG_TAC

1. Usage has been calculated in future year criteria pollutant emission rate calculations Table for hotel and associated development, natural gas combustion.

2. Emission factors were referenced from SCAQMD, 2005-2006 Reporting procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, Supplemental Instructions, June 2006, Appendix B, Table B-1, External Combustion Equipment, <10 mmBtu/hr for most conservative estimate.

3. Pollutant emissions were calculated as the product of the annual fuel usage (mmscf/yr) and the emission factor (lbs/mmscf).

ENVIRON

Table B.1-2 Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Hotel (Studio, Entertainment and Business Area)
Cooling Towers

Equipment Description	Total Area [1] (sf)	Cooling Load [2] (ton)	Equipment Tonnage [3]	Water Circulation Rate (gal/ton min) [4]	Water Circulation Rate (gal/min)	Daily Operational Hours [5]	Yearly Operational Hours (hr/yr)	TDS Concentration (ppm) [6]	Perctage of Circulating Water Lost to Drift [7]	PM Emissions (lb/yr) [8]	PM_{10} emissions (lb/yr) [9]	$PM_{2.5}$ emissions (lb/yr) [9]
Hotel	900,000	1800	900	2.5	2250	24	8760	1404	0.005%	692	92.8	0.9

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Notes:

1. Area based on the Evolution Plan.
2. A typical office building has a cooling load of approximately 500 sf/ton per ASHRAE Air-Conditioning System Design Manual, 1993 as referenced from Renne Azerbegi of Ambient Energy, Inc. and Jim Bradburn, The RHM Group, Inc., 2005 Solar World Congress: Whole Building Approach to Water Conservation. total area was divided by 500 sf/ton to obatin the cooling load.
3. It is assumed tha the cooling load is equivalent to the operating capacity of a single cooling tower
4. Water Circulation rate is estimated based on engineeering judgement.
5. It is conservatively estimated that cooling towers will be operated 24 hrs a day every day
6. Based on measured TDS content in tap water provided by LADWP (http://www.ladwp.com/ladwp/cms/ladwp009327.pdf) and assumed four cycles of TDS concentration.
7. Percentage of circulating water lost to drift is based on information provided by Arc Engineering for expected cooling tower performance.
8. Total PM emissions are based SCAQMD methods to calculate PM emissions from a cooling tower. Guidelines for Calculating Emissions from Cooling Towers, June 2006.
9. Emissions of PM10 and PM2.5 were obtained by multiplying the total PM emission factor by the fraction of PM10 and PM2.5. The fractions were based on particle size distribution data as published by Pacudah.

Table B.1-3 Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emissions Per Construction Module

Construction Zone	Building ID	Land Use	Source Category at New Building	Programmed Size (sf or spaces)	Emissions Per Module (lbs/yr)					
					CO	NO_X	SO_X	VOC	PM_{10}	$PM_{2.5}$
A	S-3	Studio	Cooling Towers	6,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E-01	7.38E-03
	S-3	Studio	Emergency Generators - Permitted, Diesel	6,000	5.28E-01	1.65E+00	1.92E-03	1.39E-01	6.95E-02	6.89E-02
	S-3	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	6,000	5.69E+00	8.09E+00	9.75E-02	1.14E+00	1.22E+00	1.22E+00
	S-17	Studio Office	Cooling Towers	250,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+01	3.08E-01
	S-17	Studio Office	Emergency Generators - Permitted, Diesel	250,000	2.20E+01	6.88E+01	7.99E-02	5.80E+00	2.90E+00	2.87E+00
	S-17	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	250,000	2.37E+02	3.37E+02	4.06E+00	4.74E+01	5.08E+01	5.08E+01
	S-17	Studio Office	Boilers and Drying Oven - Permitted, NG	250,000	2.56E+02	1.52E+02	1.83E+00	1.67E+01	2.31E+01	2.31E+01
				Total	5.21E+02	5.67E+02	6.07E+00	7.12E+01	1.10E+02	7.84E+01
B	O-1 [b]	Studio Office	Cooling Towers	200,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+01	2.46E-01
	O-1 [b]	Studio Office	Emergency Generators - Permitted, Diesel	200,000	1.76E+01	5.50E+01	6.39E-02	4.64E+00	2.32E+00	2.30E+00
	O-1 [b]	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	200,000	1.90E+02	2.70E+02	3.25E+00	3.79E+01	4.06E+01	4.06E+01
	O-1 [b]	Studio Office	Boilers and Drying Oven - Permitted, NG	200,000	2.04E+02	1.21E+02	1.46E+00	1.34E+01	1.85E+01	1.85E+01
	O-2 [b]	Studio Office	Cooling Towers	350,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E+01	4.31E-01
	O-2 [b]	Studio Office	Emergency Generators - Permitted, Diesel	350,000	3.08E+01	9.63E+01	1.12E-01	8.12E+00	4.05E+00	4.02E+00
	O-2 [b]	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	350,000	3.32E+02	4.72E+02	5.69E+00	6.63E+01	7.11E+01	7.11E+01
	O-2 [b]	Studio Office	Boilers and Drying Oven - Permitted, NG	350,000	3.56E+02	2.12E+02	2.56E+00	2.34E+01	3.24E+01	3.24E+01
	S-2	Studio Office	Cooling Towers	55,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.88E+00	6.77E-02
	S-2	Studio Office	Emergency Generators - Permitted, Diesel	55,000	4.84E+00	1.51E+01	1.76E-02	1.28E+00	6.37E-01	6.31E-01
	S-2	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	55,000	5.21E+01	7.42E+01	8.93E-01	1.04E+01	1.12E+01	1.12E+01
	S-2	Studio Office	Boilers and Drying Oven - Permitted, NG	55,000	5.62E+01	3.33E+01	4.02E-01	3.68E+00	5.09E+00	5.09E+00
	S-14	Studio	Cooling Towers	15,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E+00	1.85E-02
	S-14	Studio	Emergency Generators - Permitted, Diesel	15,000	1.32E+00	4.13E+00	4.79E-03	3.48E-01	1.74E-01	1.72E-01
	S-14	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	15,000	1.42E+01	2.02E+01	2.44E-01	2.84E+00	3.05E+00	3.05E+00
				Total	1.26E+03	1.37E+03	1.47E+01	1.72E+02	2.67E+02	1.90E+02
C	S-6	Studio Office	Cooling Towers	100,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+01	1.23E-01
	S-6	Studio Office	Emergency Generators - Permitted, Diesel	100,000	8.79E+00	2.75E+01	3.20E-02	2.32E+00	1.16E+00	1.15E+00
	S-6	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	100,000	9.48E+01	1.35E+02	1.62E+00	1.90E+01	2.03E+01	2.03E+01
	S-6	Studio Office	Boilers and Drying Oven - Permitted, NG	100,000	1.02E+02	6.06E+01	7.30E-01	6.69E+00	9.25E+00	9.25E+00
	S-7	Studio	Cooling Towers	40,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E+00	4.92E-02
	S-7	Studio	Emergency Generators - Permitted, Diesel	40,000	3.52E+00	1.10E+01	1.28E-02	9.28E-01	4.63E-01	4.59E-01
	S-7	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	40,000	3.79E+01	5.39E+01	6.50E-01	7.58E+00	8.12E+00	8.12E+00
	S-8	Studio	Cooling Towers	70,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E+00	8.61E-02
	S-8	Studio	Emergency Generators - Permitted, Diesel	70,000	6.16E+00	1.93E+01	2.24E-02	1.62E+00	8.11E-01	8.04E-01
	S-8	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	70,000	6.63E+01	9.44E+01	1.14E+00	1.33E+01	1.42E+01	1.42E+01
				Total	3.20E+02	4.02E+02	4.21E+00	5.14E+01	8.06E+01	5.46E+01
D	S-1	Studio	Cooling Towers	100,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+01	1.23E-01
	S-1	Studio	Emergency Generators - Permitted, Diesel	100,000	8.79E+00	2.75E+01	3.20E-02	2.32E+00	1.16E+00	1.15E+00
	S-1	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	100,000	9.48E+01	1.35E+02	1.62E+00	1.90E+01	2.03E+01	2.03E+01
	S-5	Studio Office	Cooling Towers	25,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+00	3.08E-02
	S-5	Studio Office	Emergency Generators - Permitted, Diesel	25,000	2.20E+00	6.88E+00	7.99E-03	5.80E-01	2.90E-01	2.87E-01
	S-5	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	25,000	2.37E+01	3.37E+01	4.06E-01	4.74E+00	5.08E+00	5.08E+00
	S-5	Studio Office	Boilers and Drying Oven - Permitted, NG	25,000	2.56E+01	1.52E+01	1.83E-01	1.67E+00	2.31E+00	2.31E+00
	S-9	Studio	Cooling Towers	49,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.13E+00	6.03E-02
	S-9	Studio	Emergency Generators - Permitted, Diesel	49,000	4.31E+00	1.35E+01	1.57E-02	1.14E+00	5.68E-01	5.62E-01
	S-9	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	49,000	4.64E+01	6.61E+01	7.98E-01	9.29E+00	9.95E+00	9.95E+00
	S-12	Studio	Cooling Towers	20,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	2.46E-02
	S-12	Studio	Emergency Generators - Permitted, Diesel	20,000	1.76E+00	5.50E+00	6.39E-03	4.64E-01	2.32E-01	2.30E-01
	S-12	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	20,000	1.90E+01	2.70E+01	3.25E-01	3.79E+00	4.06E+00	4.06E+00
	S-13	Studio	Cooling Towers	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-13	Studio	Emergency Generators - Permitted, Diesel	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-13	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-20	Studio	Cooling Towers	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-20	Studio	Emergency Generators - Permitted, Diesel	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-20	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-21	Studio	Cooling Towers	30,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.75E+00	3.69E-02
	S-21	Studio	Emergency Generators - Permitted, Diesel	30,000	2.64E+00	8.25E+00	9.59E-03	6.96E-01	3.48E-01	3.44E-01
	S-21	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	30,000	2.84E+01	4.04E+01	4.87E-01	5.69E+00	6.09E+00	6.09E+00
	S-24	Studio	Cooling Towers	25,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+00	3.08E-02
	S-24	Studio	Emergency Generators - Permitted, Diesel	25,000	2.20E+00	6.88E+00	7.99E-03	5.80E-01	2.90E-01	2.87E-01
	S-24	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	25,000	2.37E+01	3.37E+01	4.06E-01	4.74E+00	5.08E+00	5.08E+00
	S-25	Studio	Cooling Towers	25,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+00	3.08E-02
	S-25	Studio	Emergency Generators - Permitted, Diesel	25,000	2.20E+00	6.88E+00	7.99E-03	5.80E-01	2.90E-01	2.87E-01
	S-25	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	25,000	2.37E+01	3.37E+01	4.06E-01	4.74E+00	5.08E+00	5.08E+00
	S-26	Studio	Cooling Towers	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-26	Studio	Emergency Generators - Permitted, Diesel	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	S-26	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total	3.09E+02	4.60E+02	4.72E+00	6.00E+01	8.54E+01	5.14E+01
E	C-3	Amphitheater	Cooling Towers	60,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E+00	7.38E-02
	C-3	Amphitheater	Emergency Generators - Permitted, Diesel	60,000	5.28E+00	1.65E+01	1.92E-02	1.39E+00	6.95E-01	6.89E-01
	C-3	Amphitheater	Nonpermitted, NG Meters (waterboilers, etc.)	60,000	5.69E+01	8.09E+01	9.75E-01	1.14E+01	1.22E+01	1.22E+01
	T-8	Entertainment	Cooling Towers	15,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E+00	1.85E-02
	T-8	Entertainment	Emergency Generators - Permitted, Diesel	15,000	1.32E+00	4.13E+00	4.79E-03	3.48E-01	1.74E-01	1.72E-01
	T-8	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	15,000	1.42E+01	2.02E+01	2.44E-01	2.84E+00	3.05E+00	3.05E+00
	T-8	Entertainment	Attraction Special Effects - Nonpermitted, LPG	15,000	8.26E+00	3.30E+01	1.19E+01	6.71E-01	7.05E-01	6.99E-01
				Total	8.59E+01	1.55E+02	1.31E+01	1.66E+01	2.62E+01	1.69E+01
F	C-1	Entertainment Retail	Cooling Towers	35,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E+00	4.31E-02
	C-1	Entertainment Retail	Emergency Generators - Permitted, Diesel	35,000	3.08E+00	9.63E+00	1.12E-02	8.12E-01	4.05E-01	4.02E-01
	C-1	Entertainment Retail	Nonpermitted, NG Meters (waterboilers, etc.)	35,000	3.32E+01	4.72E+01	5.69E-01	6.63E+00	7.11E+00	7.11E+00
	C-4	Entertainment Retail	Cooling Towers	35,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.38E+00	4.31E-02
	C-4	Entertainment Retail	Emergency Generators - Permitted, Diesel	35,000	3.08E+00	9.63E+00	1.12E-02	8.12E-01	4.05E-01	4.02E-01
	C-4	Entertainment Retail	Nonpermitted, NG Meters (waterboilers, etc.)	35,000	3.32E+01	4.72E+01	5.69E-01	6.63E+00	7.11E+00	7.11E+00
	H-1	Hotel	Cooling Towers & Natural Gas	450,000	5.28E+02	3.15E+03	1.58E+01	1.39E+02	5.26E+00	5.28E+00
	S-16	Studio	Cooling Towers	50,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.25E+00	6.15E-02
	S-16	Studio	Emergency Generators - Permitted, Diesel	50,000	4.40E+00	1.38E+01	1.60E-02	1.16E+00	5.79E-01	5.74E-01
	S-16	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	50,000	4.74E+01	6.74E+01	8.12E-01	9.48E+00	1.02E+01	1.02E+01
				Total	6.50E+02	3.35E+03	1.78E+01	1.65E+02	4.60E+01	3.11E+01
	T-1	Entertainment	Cooling Towers	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	T-1	Entertainment	Emergency Generators - Permitted, Diesel	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	T-1	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	T-1	Entertainment	Attraction Special Effects - Nonpermitted, LPG	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRON

Table B.1-3 Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Construction Zone	Building ID	Land Use	Source Category at New Building	Programmed Size (sf or spaces)	Emissions Per Module (lbs/yr)					
					CO	NO_X	SO_X	VOC	PM_{10}	$PM_{2.5}$
G	T-2	Entertainment	Cooling Towers	50,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.25E+00	6.15E-02
	T-2	Entertainment	Emergency Generators - Permitted, Diesel	50,000	4.40E+00	1.38E+01	1.60E-02	1.16E+00	5.79E-01	5.74E-01
	T-2	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	50,000	4.74E+01	6.74E+01	8.12E-01	9.48E+00	1.02E+01	1.02E+01
	T-2	Entertainment	Attraction Special Effects - Nonpermitted, LPG	50,000	2.75E+01	1.10E+02	3.98E+01	2.24E+00	2.35E+00	2.33E+00
	T-3/3b	Entertainment	Cooling Towers	60,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E+00	7.38E-02
	T-3/3b	Entertainment	Emergency Generators - Permitted, Diesel	60,000	5.28E+00	1.65E+01	1.92E-02	1.39E+00	6.95E-01	6.89E-01
	T-3/3b	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	60,000	5.69E+01	8.09E+01	9.75E-01	1.14E+01	1.22E+01	1.22E+01
	T-3/3b	Entertainment	Attraction Special Effects - Nonpermitted, LPG	60,000	3.30E+01	1.32E+02	4.75E+01	2.68E+00	2.82E+00	2.80E+00
	T-4	Entertainment	Cooling Towers	100,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+01	1.23E-01
	T-4	Entertainment	Emergency Generators - Permitted, Diesel	100,000	8.79E+00	2.75E+01	3.20E-02	2.32E+00	1.16E+00	1.15E+00
	T-4	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	100,000	9.48E+01	1.35E+02	1.62E+00	1.90E+01	2.03E+01	2.03E+01
	T-4	Entertainment	Attraction Special Effects - Nonpermitted, LPG	100,000	5.51E+01	2.20E+02	7.92E+01	4.47E+00	4.70E+00	4.66E+00
	T-5	Entertainment	Cooling Towers	40,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E+00	4.92E-02
	T-5	Entertainment	Emergency Generators - Permitted, Diesel	40,000	3.52E+00	1.10E+01	1.28E-02	9.28E-01	4.63E-01	4.59E-01
	T-5	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	40,000	3.79E+01	5.39E+01	6.50E-01	7.58E+00	8.12E+00	8.12E+00
	T-5	Entertainment	Attraction Special Effects - Nonpermitted, LPG	40,000	2.20E+01	8.81E+01	3.17E+01	1.79E+00	1.88E+00	1.86E+00
	T-6	Entertainment	Cooling Towers	25,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+00	3.08E-02
	T-6	Entertainment	Emergency Generators - Permitted, Diesel	25,000	2.20E+00	6.88E+00	7.99E-03	5.80E-01	2.90E-01	2.87E-01
	T-6	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	25,000	2.37E+01	3.37E+01	4.06E-01	4.74E+00	5.08E+00	5.08E+00
	T-6	Entertainment	Attraction Special Effects - Nonpermitted, LPG	25,000	1.38E+01	5.51E+01	1.98E+01	1.12E+00	1.18E+00	1.16E+00
	T-7	Entertainment	Cooling Towers	100,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+01	1.23E-01
	T-7	Entertainment	Emergency Generators - Permitted, Diesel	100,000	8.79E+00	2.75E+01	3.20E-02	2.32E+00	1.16E+00	1.15E+00
	T-7	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	100,000	9.48E+01	1.35E+02	1.62E+00	1.90E+01	2.03E+01	2.03E+01
	T-7	Entertainment	Attraction Special Effects - Nonpermitted, LPG	100,000	5.51E+01	2.20E+02	7.92E+01	4.47E+00	4.70E+00	4.66E+00
	T-9	Entertainment	Cooling Towers	45,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.63E+00	5.54E-02
	T-9	Entertainment	Emergency Generators - Permitted, Diesel	45,000	3.96E+00	1.24E+01	1.44E-02	1.04E+00	5.21E-01	5.17E-01
	T-9	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	45,000	4.26E+01	6.07E+01	7.31E-01	8.53E+00	9.14E+00	9.14E+00
	T-9	Entertainment	Attraction Special Effects - Nonpermitted, LPG	45,000	2.48E+01	9.91E+01	3.56E+01	2.01E+00	2.12E+00	2.10E+00
	T-11	Entertainment	Cooling Towers	100,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+01	1.23E-01
	T-11	Entertainment	Emergency Generators - Permitted, Diesel	100,000	8.79E+00	2.75E+01	3.20E-02	2.32E+00	1.16E+00	1.15E+00
	T-11	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	100,000	9.48E+01	1.35E+02	1.62E+00	1.90E+01	2.03E+01	2.03E+01
	T-11	Entertainment	Attraction Special Effects - Nonpermitted, LPG	100,000	5.51E+01	2.20E+02	7.92E+01	4.47E+00	4.70E+00	4.66E+00
	H-2	Hotel	Cooling Towers & Natural Gas	450,000	5.26E+02	3.15E+03	1.58E+01	1.39E+02	5.26E+00	5.26E+00
				Total	1.35E+03	5.14E+03	4.35E+02	2.73E+02	2.06E+02	1.42E+02
H	S-27	Studio Office	Cooling Towers	10,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+00	1.23E-02
	S-27	Studio Office	Emergency Generators - Permitted, Diesel	10,000	8.79E-01	2.75E+00	3.20E-03	2.32E-01	1.16E-01	1.15E-01
	S-27	Studio Office	Nonpermitted, NG Meters (waterboilers, etc.)	10,000	9.48E+00	1.35E+01	1.62E-01	1.90E+00	2.03E+00	2.03E+00
	S-27	Studio Office	Boilers and Drying Oven - Permitted, NG	10,000	1.02E+01	6.06E+00	7.30E-02	8.69E-01	9.25E-01	9.25E-01
	S-15	Child Care	Cooling Towers	5,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.25E-01	6.15E-03
	S-15	Child Care	Emergency Generators - Permitted, Diesel	5,000	4.40E-01	1.38E+00	1.60E-03	1.16E-01	5.79E-02	5.74E-02
	S-15	Child Care	Nonpermitted, NG Meters (waterboilers, etc.)	5,000	4.74E+00	6.74E+00	8.12E-02	9.48E-01	1.02E+00	1.02E+00
	S-15	Child Care	Attraction Special Effects - Nonpermitted, LPG	5,000	2.75E+00	1.10E+01	3.98E+00	2.24E-01	2.35E-01	2.33E-01
				Total	2.85E+01	4.14E+01	4.28E+00	4.08E+00	6.25E+00	4.39E+00
I	S-22	Studio	Cooling Towers	20,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	2.46E-02
	S-22	Studio	Emergency Generators - Permitted, Diesel	20,000	1.76E+00	5.50E+00	6.39E-03	4.64E-01	2.32E-01	2.30E-01
	S-22	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	20,000	1.90E+01	2.70E+01	3.25E-01	3.79E+00	4.06E+00	4.06E+00
	S-23	Studio	Cooling Towers	20,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	2.46E-02
	S-23	Studio	Emergency Generators - Permitted, Diesel	20,000	1.76E+00	5.50E+00	6.39E-03	4.64E-01	2.32E-01	2.30E-01
	S-23	Studio	Nonpermitted, NG Meters (waterboilers, etc.)	20,000	1.90E+01	2.70E+01	3.25E-01	3.79E+00	4.06E+00	4.06E+00
	T-10	Entertainment	Cooling Towers	20,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	2.46E-02
	T-10	Entertainment	Emergency Generators - Permitted, Diesel	20,000	1.76E+00	5.50E+00	6.39E-03	4.64E-01	2.32E-01	2.30E-01
	T-10	Entertainment	Nonpermitted, NG Meters (waterboilers, etc.)	20,000	1.90E+01	2.70E+01	3.25E-01	3.79E+00	4.06E+00	4.06E+00
	T-10	Entertainment	Attraction Special Effects - Nonpermitted, LPG	20,000	1.10E+01	4.40E+01	1.58E+01	8.95E-01	9.40E-01	9.32E-01
				Total	7.31E+01	1.41E+02	1.68E+01	1.37E+01	2.13E+01	1.39E+01
J		Studio	Support	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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Table B.1-4A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Rate Calculations
Onsite Mobile
Diesel Fueled Tour Trams

Tram Segment	Number of Trams per Segment [1]	Manufacture Year [2]	Future Year	Cumulative Hours per Tram [3]	Engine Power [1]	Load Factor [1]	Activity [4]	PM Zero-hour Emission Factor [5]	PM Deterioration Factor [6]	PM Correction Factor [8]	PM Emission Factor [6]	Total PM Emissions [9]	PM_{10} Emissions [9]	$PM_{2.5}$ Emissions [9]	VOC Zero-hour Emission Factor [5]	VOC Deterioration Factor [5]	VOC Emission Factor [6]	VOC Emissions [7]	CO Zero-hour Emission Factor [5]	CO Deterioration Factor [5]	CO Emission Factor [6]	CO Emissions [7]	NO_x Zero-hour Emission Factor [5]	NO_x Deterioration Factor [5]	NO_x Correction Factor [8]	NO_x Emission Factor [6]	NO_x Emissions [7]	Fuel Consumption [10]	SO_x Emissions [11]
					(hp)		(hrs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(-)	(g/bhp-hr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(g/bhp-hr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(g/bhp-hr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(-)	(g/bhp-hr)	(lbs/yr)	(gal/yr)	(lbs/yr)
1	21	2020	2030	22,372	330	29%	4,012	0.01	3.75E-07	0.8972	0.02	14	14	13	0.050	1.17E-05	0.31	264	0.920	1.82E-05	1.33	1,123	0.270	3.75E-06	0.9425	0.35	282	8,916	1.9
2	21	2020	2030	22,372	330	25%	5,605	0.01	3.75E-07	0.8972	0.02	17	17	16	0.050	1.17E-05	0.31	324	0.920	1.82E-05	1.33	1,379	0.270	3.75E-06	0.9425	0.35	347	10,949	2.3
3	21	2020	2030	22,372	330	12%	3,284	0.01	3.75E-07	0.8972	0.02	5	5	4	0.050	1.17E-05	0.31	86	0.920	1.82E-05	1.33	366	0.270	3.75E-06	0.9425	0.35	92	2,901	0.6
4	21	2020	2030	22,372	330	10%	2,773	0.01	3.75E-07	0.8972	0.02	3	3	3	0.050	1.17E-05	0.31	60	0.920	1.82E-05	1.33	256	0.270	3.75E-06	0.9425	0.35	64	2,034	0.4
5	21	2020	2030	22,372	330	46%	2,281	0.01	3.75E-07	0.8972	0.02	13	13	12	0.050	1.17E-05	0.31	236	0.920	1.82E-05	1.33	1,006	0.270	3.75E-06	0.9425	0.35	253	7,985	1.7
6	21	2020	2030	22,372	330	10%	629	0.01	3.75E-07	0.8972	0.02	1	1	1	0.050	1.17E-05	0.31	14	0.920	1.82E-05	1.33	58	0.270	3.75E-06	0.9425	0.35	15	462	0.1
7	21	2020	2030	22,372	330	41%	4,877	0.01	3.75E-07	0.8972	0.02	24	24	22	0.050	1.17E-05	0.31	452	0.920	1.82E-05	1.33	1,926	0.270	3.75E-06	0.9425	0.35	484	15,283	3.3
8	21	2020	2030	22,372	330	10%	1,711	0.01	3.75E-07	0.8972	0.02	2	2	2	0.050	1.17E-05	0.31	37	0.920	1.82E-05	1.33	158	0.270	3.75E-06	0.9425	0.35	40	1,255	0.3
9	21	2020	2030	22,372	330	16%	2,714	0.01	3.75E-07	0.8972	0.02	5	5	5	0.050	1.17E-05	0.31	96	0.920	1.82E-05	1.33	410	0.270	3.75E-06	0.9425	0.35	103	3,257	0.7
10	21	2020	2030	22,372	330	10%	2,851	0.01	3.75E-07	0.8972	0.02	3	3	3	0.050	1.17E-05	0.31	62	0.920	1.82E-05	1.33	263	0.270	3.75E-06	0.9425	0.35	66	2,091	0.4
11	21	2020	2030	22,372	330	15%	1,634	0.01	3.75E-07	0.8972	0.02	3	3	3	0.050	1.17E-05	0.31	51	0.920	1.82E-05	1.33	219	0.270	3.75E-06	0.9425	0.35	55	1,739	0.4
12	21	2020	2030	22,372	330	10%	1,632	0.01	3.75E-07	0.8972	0.02	2	2	2	0.050	1.17E-05	0.31	35	0.920	1.82E-05	1.33	151	0.270	3.75E-06	0.9425	0.35	38	1,197	0.3
13	21	2020	2030	22,372	330	65%	3,615	0.01	3.75E-07	0.8972	0.02	30	30	27	0.050	1.17E-05	0.31	585	0.920	1.82E-05	1.33	2,404	0.270	3.75E-06	0.9425	0.35	604	19,077	4.1
14	21	2020	2030	22,372	330	10%	1,967	0.01	3.75E-07	0.8972	0.02	2	2	2	0.050	1.17E-05	0.31	43	0.920	1.82E-05	1.33	182	0.270	3.75E-06	0.9425	0.35	46	1,442	0.3
15	21	2020	2030	22,372	330	15%	549	0.01	3.75E-07	0.8972	0.02	1	1	1	0.050	1.17E-05	0.31	22	0.920	1.82E-05	1.33	93	0.270	3.75E-06	0.9425	0.35	23	736	0.2
16	21	2020	2030	22,372	330	10%	2,262	0.01	3.75E-07	0.8972	0.02	3	3	2	0.050	1.17E-05	0.31	49	0.920	1.82E-05	1.33	209	0.270	3.75E-06	0.9425	0.35	53	1,659	0.4
17	21	2020	2030	22,372	330	36%	1,711	0.01	3.75E-07	0.8972	0.02	8	8	7	0.050	1.17E-05	0.31	147	0.920	1.82E-05	1.33	627	0.270	3.75E-06	0.9425	0.35	157	4,974	1.1
18	21	2020	2030	22,372	330	14%	808	0.01	3.75E-07	0.8972	0.02	1	1	1	0.050	1.17E-05	0.31	25	0.920	1.82E-05	1.33	108	0.270	3.75E-06	0.9425	0.35	27	860	0.2
19	21	2020	2030	22,372	330	14%	1,868	0.01	3.75E-07	0.8972	0.02	3	3	3	0.050	1.17E-05	0.31	58	0.920	1.82E-05	1.33	246	0.270	3.75E-06	0.9425	0.35	62	1,951	0.4
												139	139	128				2,627				11,184					2,811		19

1. Number of trams per segment, engine power, and load factor were referenced from the base year emission rate calculations for diesel fueled tour trams.

2. Manufacture year was determined based on estimated compliance with the Air Resource's Board's In-Use Off-Road Diesel Vehicle Regulation applicable to the on-site diesel fueled mobile sources. This regulation requires acceleration in the turnover of fleets to newer, cleaner engines. The early repower and retrofit of trams would likley provide sufficient fleet credit for NBC Universal to be in compliance for the duration of the regulation (until 2020).

3. Cumulative hours have been calculated as the product of the activity and the difference in base year and manufacture year divided by the number of trams. Please note the maximum deterioration of diesel, off-highway trucks is 66,572 hours. The maximum deterioration of an engine is two times the useful life per Energy and Environmental Analysis Incorporated, prepared for the CARB, Documentation of Input Factors for the New Off-Road Mobile Source Emissions Inventory Model, February 1997. The maximum deterioration is calculated as the useful life of the engine (yrs) multiplied by the activity (hrs/yr), then multiplied by two useful lives. The useful life of the engine, 17 years, and the activity, 1958 hrs/yr, were referenced from CARB, OFFROAD2007 Model, equip.csv.

4. Activity was referenced from the base year emission rate calculations for diesel fueled tour trams and multiplied by the growth factor for Entertainment Use as referenced from the Evolution Plan.
5. Zero-hour emission factor and deterioration factor were referenced from California Air Resources Board (CARB), OFFROAD2007 Model, emfac.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm.
6. The emission factor was calculated as the sum of the zero-hour emission factor and the deterioration factor multiplied by the cumulative hours (Emission Factor = Zero-hour Emission Factor + Deterioration Factor * Cumulative Hours). The calculation methodology was referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.
7. Pollutant emissions were calculated as the product of the emission factor, engine power, load factor, activity, and the conversion factor. If applicable, the correction factor was multiplied by this product. (Emissions = Emission Factor * Engine Power * Load Factor * Activity * Conversion Factor, if applicable, * Correction Factor; where the Conversion Factor = 453.5924 grams per pound). The calculation methodology referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.
8. Correction factors were referenced from CARB, OFFROAD Modeling Change Technical Memo, July 2005, Table 6, http://arb.ca.gov/msei/offroad/techmemo/arb_offroad_fuels.pdf
9. The emissions of PM_{10} and $PM_{2.5}$ were calculated by multiplying the total PM emissions by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, Off-road equipment, Diesel.

10. Fuel consumption was referenced from the base year emission rate calculations for diesel fueled tour trams. The fuel consumption has been scaled by segment. It is scaled with the ratio of the activity times the load factor for a given segment to the total activity per tram times the load factor. This activity is multiplied by the growth factor for the Entertainment Use land use area as referenced from the Evolution Plan.

11. SO_x emissions are assumed to be equal to SO_2 emissions. Sulfur content of low sulfur diesel is defined as 15 ppmw or less by SCAQMD Rule 431.2(b)(5). The density of diesel fuel is 7.1 pounds per gallon per USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1. SO_2 emissions equal the sulfur content of diesel fuel times the ratio of the molecular weights for sulfur and SO_2, times the annual fuel consumption.

Table B.1-4B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria and TAC Pollutant Emission Rate Calculations
Paved Road Dust
Onsite Mobile
Diesel Fueled Tour Trams

GVW [1] (tons)	Annual VMT [2] (miles)	Emission Factor [5] (lbs/VMT)		Emissions [6] (lbs/yr)		TAC Emissions [6] (lbs/yr)																				
		PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	ARSENIC	CR(6) and compounds	LEAD	NICKEL	ALUMINUM	BARIUM	BROMINE	CHLORINE	CHROMIUM	COBALT	COPPER	MANGANESE	PHOSPHOROUS	SELENIUM	VANADIUM	ZINC	CADMIUM	ANTIMONY	MERCURY	SILVER	THALLIUM
0.71	1,837,479	3.66E-04	0.00E+00	673	0	0	0	0.1	0	72	0.7	0	0.4	0	0	0.1	0.5	1.8	0	0	0.7	0	0	0	0	0

1. Gross vehicle weight (GVW) for trams was referenced from engine specification sheet (DT530).

2. Annual vehicle miles traveled (VMT) is based on fuel consumption. Fuel consumption is based on vehicle loading throughput at the diesel fuel storage tanks in the tram garage, 123,638 gallons per year, referenced from the 2005-2006 AER provided by NBC Universal. The fuel consumption of the replaced engines is half of that of the old engines per NBC Universal. Fuel efficiency is assumed to be 20.7 mpg for all equipment as referenced from USEPA, Office of Air and Radiation/Office of Transportation and Air Quality, Fuel Economy and Emissions Programs Fact Sheet, http://www.epa.gov/otaq/cert/factshts/fefact01.pdf.

3. Emission factor calculation methodology was referenced from USEPA, AP-42, Chapter 13.2.1, November 2006.

$$E_{ext} = \left[k\left(\frac{sL}{2}\right)^{0.65} \left(\frac{W}{3}\right)^{1.5} - C \right]\left(1 - \frac{P}{4N}\right)$$

where
E = Emission factor (lbs/VMT)

k = Particulate size multiplier (lbs/VMT). PM10 is 0.016 lbs/VMT and PM2.5 is 0.0024 lbs/VMT as referenced from table 13.2.1-1.

sL = Road surface silt loading (g/m2). sL is 0.6 g/m2 as referenced from table 13.2.1-3.
W = Average weight (tons).
C = Emission factor for 1980's vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT). PM10 is 0.00047 lbs/VMT and PM2.5 is 0.00036 lbs/VMT.
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. P = 40 days as referenced from figure 13.2.1-2.

N = number of days in the averaging period. N = 365 days per year.

4. Annual VMT was multiplied by the emission factor to obtain pounds per year. Annual VMT was calculated as the VMT for the two week observation period divided by 2 weeks and multiplied by 52 weeks per year.
5. Please note when calculations result in negative emissions, emissions are zero as referenced from page 13.2.1-5.
6. TAC emissions are calculated by multiplying PM_{10} emissions by ARB speciation profile #471 (paved road dust)

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Table B1-5A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Location Distribution Calculations
Diesel Fueled Internal Combustion Engines:
Portable Generators
NBC Universal and Third Party Owned

Portable Generator Locations	
Lot	**Usage Distribution [1]**
Studio, Entertainment and Business Areas (NW)	100.0%
Backlot (NE)	0.0%
South Lot (S)	0.0%

Owner	Lot	Emissions [2] (lbs/yr)						
		CO	NO_X	SO_X	VOC	PM_{10}	$PM_{2.5}$	DPM
NBC Owned	Studio, Entertainment and Business Areas (NW)	76.4	21.1	0.5	4.5	0.7	0.7	0.7
	Backlot (NE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	South Lot (S)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third Party	Studio, Entertainment and Business Areas (NW)	26.6	36.9	0.2	2.1	0.2	0.2	0.2
	Backlot (NE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	South Lot (S)	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1. Usage distribution was calculated as the ratio of the number of production days in a given lot area to the total number of production days. The baseline area defined as "south lot" no longer exists due to the Project development. Usage is distributed between remaining areas.
2. Emissions were calculated by multpying the total emissions as calculated in future year criteria and toxic air contaminat emission rate calculations by the usage distribution.

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Table B.1-5B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Diesel Fueled Internal Combustion Engines:
Portable Generators
NBC Universal Owned

Manufacture Year [1]	Future Year	Engine Power [2]	Load Factor [3]	Cumulative Hours [4]	Activity [5]	VOC Zero-hour Emission Factor [6]	VOC Deterioration Factor [6]	VOC Emission Factor [7]	VOC Emissions [8]	CO Zero-hour Emission Factor [6]	CO Deterioration Factor [6]	CO Emission Factor [7]	CO Emissions [8]	NO_X Zero-hour Emission Factor [6]	NO_X Deterioration Factor [6]	NO_X Correction Factor [9]	NO_X Emission Factor [7]	NO_X Emissions [8]	PM Zero-hour Emission Factor [6]	PM Deterioration Factor [6]	PM Correction Factor [9]	Total PM Emission Factor [7]	Total PM Emissions [8]	PM_{10} Emissions [10]	$PM_{2.5}$ Emissions [10]	Fuel Usage [11]	SO_X Emissions [12]
		(hp)		(hrs)	(hrs/yr)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr2)	(-)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr2)	(-)	(g/hp-hr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(gal/hr)	(lbs/yr)
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
2020	2030	277	44%	440.08	44.01	0.05	1.17E-05	0.055	0.6	0.92	1.82E-05	0.928	11	0.27	3.75E-06	0.943	0.256	3.0	0.01	3.75E-07	0.8972	0.009	0.1	0.1	0.1	7.00	0.1
								Total	4.5			Total	76				Total	21.1				Total	0.8	0.7	0.7	Total	0.5

1. Manufacture year was determined based on estimated complaince with the requirements of the Portable Diesel-Fueled Engines Air Toxic Control Measure (ATCM) proposed by California Air Resources Board (CARB). The ATCM requires all portable engines to be certified to Tier 1, 2, or 3 U.S. EPA/CARB off-road engines standards by 2010. After 2010, all fleets of portable engines are required to meet diesel PM emissions averages that become more stringent in 2013, 2017, 2020.

2. Engine power was referenced from the base year emission rate calculations for NBC Universal owned portable generators.

3. Load factors were calculated as the ratio of operating engine power to maximum engine power. Load factor = fuel usage rate / (BSFC * Engine Power / Density of diesel). Fuel usage rate, 7.0 gal/hr, was referenced from the base year emission rate calculations for NBC Universal owned portable generators. The Brake Specific Fuel Consumption (BSFC), 0.41 lb/hp-hr, was referenced from California Air Resources Board (CARB), OFFROAD2007 Model, equip.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm. The density of diesel fuel, 7.1 lbs/gal, was referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1.

4. Cumulative hours were calculated by multiplying the activity by the difference in the future year and manufacture year. Please note the maximum deterioration of diesel portable generators is 10,816 hours. The maximum deterioration of an engine is two times the useful life per Energy and Environmental Analysis Incorporated, prepared for the CARB, Documentation of Input Factors for the New Off-Road Mobile Source Emissions Inventory Model, February 1997. The maximum deterioration is calculated as the useful life of the engine (yrs) multiplied by the activity (hrs/yr), then multiplied by two useful lives. The useful life of the engine, 16 years, and the activity, 338 hrs/yr, were referenced from CARB, OFFROAD2007 Model, equip.csv.

5. The activity was referenced from the base year emission rate calculations for NBC Universal owned portable generators. Portable generator usage will be reduced in the future year due to the replacement of portable generator usage in the backlot and south lot with electricity and the development of the south lot from the Project. 20% of the base year portable generator usage will remain in the Back Lot in the future year. 100% of the base year portable generator usage in the south lot will be eliminated in the future year. The future activity was calculated by multiplying the base year activity by the ratio of the number of total future year production days to the number of base year production days. This activity was increased by the growth factor of the studio land use, referenced from the Evolution Plan, as a result of demand from the proposed Project.

6. Zero-hour emission factors and deterioration factors were referenced from California Air Resources Board (CARB), OFFROAD2007 Model, emfac.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm.

7. The emission factor was calculated as the sum of the zero-hour emission factor and the deterioration factor multiplied by the cumulative hours (Emission Factor = Zero-hour Emission Factor + Deterioration Factor * Cumulative Hours). The calculation methodology was referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

8. Pollutant emissions were calculated as the product of the emission factor, engine power, load factor, activity, and the conversion factor. If applicable, the correction factor was multiplied by this product. (Emissions = Emission Factor * Engine Power * Load Factor * Activity * Conversion Factor, if applicable, * Correction Factor; where the Conversion Factor = 453.5924 grams per pound). The calculation methodology was referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

9. Correction factors were referenced from CARB, OFFROAD Modeling Change Technical Memo, July 2005, Table 6, http://arb.ca.gov/msei/offroad/techmemo/arb_offroad_fuels.pdf

10. The emissions of PM_{10} and $PM_{2.5}$ were calculated by multiplying the total PM emissions by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, Internal Combustion, Distillate and Diesel - Except Electric Generation.

11. Fuel usage was referenced from the base year emission rate calculations for NBC Universal owned portable generators.

12. SO_X emissions are assumed to be equal to SO_2 emissions. Sulfur content of low sulfur diesel is defined as 15 ppmw or less by SCAQMD Rule 431.2(b)(5). The density of diesel fuel is 7.1 pounds per gallon per USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1. SO_2 emissions are equal to the sulfur content of diesel fuel multiplied by the ratio of the molecular weight of sulfur to the molecular weight of SO_2, multiplied by the annual fuel consumption. The annual fuel consumption is calculated as the fuel usage rate (gal/hr) multiplied by the activity (hrs/yr).

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Table B.1-5C Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Rate Calculations
Diesel Fueled Internal Combustion Engines:
Portable Generators
Third Party Owned

Unit [1]	Manufacture Year [2]	Future Year	Cumulative Hours [3]	Activity [4]	Engine Power [5]	Load Factor [6]	VOC Zero-hour Emission Factor [7]	VOC Deterioration Factor [7]	VOC Emission Factor [8]	VOC Emissions [9]	CO Zero-hour Emission Factor [7]	CO Deterioration Factor [7]	CO Emission Factor [8]	CO Emissions [9]	NO_X Zero-hour Emission Factor [7]	NOx Deterioration Factor [7]	NOx Correction Factor [10]	NOx Emission Factor [8]	NO_X Emissions [9]	PM Zero-hour Emission Factor [7]	PM Deterioration Factor [7]	PM Correction Factor [10]	Total PM Emission Factor [8]	Total PM Emissions [9]	PM_{10} Emissions [11]	$PM_{2.5}$ Emissions [11]	Fuel Usage [12]	SOX Emissions [13]
				(hrs/yr)	(hp)		(g/hp-hr)	(g/hp-hr^2)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr^2)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr^2)	(-)	(g/hp-hr)	(lbs/yr)	(g/hp-hr)	(g/hp-hr^2)	(-)	(g/hp-hr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(gal/hr)	(lbs/yr)
TP-1	2013	2030	183.78	11.85	183	58%	0.07	1.83E-05	0.07	0.2	0.92	2.43E-05	0.92	2.6	1.36	1.75E-05	0.9425	1.36	3.5	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.02
TP-1	2013	2030	183.78	10.40	183	58%	0.07	1.83E-05	0.07	0.2	0.92	2.43E-05	0.92	2.2	1.36	1.75E-05	0.9425	1.36	3.1	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.02
TP-2	2013	2030	183.78	12.00	195	54%	0.07	1.83E-05	0.07	0.2	0.92	2.43E-05	0.92	2.6	1.36	1.75E-05	0.9425	1.36	3.6	0.01	3.75E-07	0.8972	0.01	0.03	0.02	0.02	7.00	0.02
TP-3	2013	2030	183.78	10.90	245	43%	0.07	1.83E-05	0.07	0.2	0.92	2.43E-05	0.92	2.4	1.36	1.75E-05	0.9425	1.36	3.3	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.02
TP-4	2013	2030	183.78	8.36	178	59%	0.07	1.83E-05	0.07	0.1	0.92	2.43E-05	0.92	1.8	1.36	1.75E-05	0.9425	1.36	2.5	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-5	2013	2030	183.78	8.72	277	44%	0.07	1.83E-05	0.07	0.2	0.92	1.82E-05	0.92	2.2	1.36	1.75E-05	0.9425	1.36	3.0	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-6	2013	2030	183.78	3.63	415	29%	0.07	1.83E-05	0.07	0.1	0.92	1.82E-05	0.92	0.9	1.36	1.75E-05	0.9425	1.36	1.2	0.01	3.75E-07	0.8972	0.01	0.01	0.01	0.01	7.00	0.01
TP-6	2013	2030	183.78	9.45	415	29%	0.07	1.83E-05	0.07	0.2	0.92	1.82E-05	0.92	2.3	1.36	1.75E-05	0.9425	1.36	3.2	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-7	2013	2030	183.78	8.72	235	45%	0.07	1.83E-05	0.07	0.1	0.92	2.43E-05	0.92	1.9	1.36	1.75E-05	0.9425	1.36	2.6	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-8	2013	2030	183.78	2.91	258	47%	0.07	1.83E-05	0.07	0.1	0.92	1.82E-05	0.92	0.7	1.36	1.75E-05	0.9425	1.36	1.0	0.01	3.75E-07	0.8972	0.01	0.01	0.01	0.01	7.00	0.00
TP-9	2013	2030	183.78	2.40	258	47%	0.07	1.83E-05	0.07	0.0	0.92	1.82E-05	0.92	0.6	1.36	1.75E-05	0.9425	1.36	0.8	0.01	3.75E-07	0.8972	0.01	0.01	0.01	0.01	7.00	0.00
TP-10	2013	2030	183.78	8.36	258	47%	0.07	1.83E-05	0.07	0.2	0.92	1.82E-05	0.92	2.1	1.36	1.75E-05	0.9425	1.36	2.9	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-11	2013	2030	183.78	8.36	258	47%	0.07	1.83E-05	0.07	0.2	0.92	1.82E-05	0.92	2.1	1.36	1.75E-05	0.9425	1.36	2.9	0.01	3.75E-07	0.8972	0.01	0.02	0.02	0.02	7.00	0.01
TP-11	2013	2030	183.78	4.36	258	47%	0.07	1.83E-05	0.07	0.1	0.92	1.82E-05	0.92	1.1	1.36	1.75E-05	0.9425	1.36	1.5	0.01	3.75E-07	0.8972	0.01	0.01	0.01	0.01	7.00	0.01
TP-11	2013	2030	183.78	5.09	258	47%	0.07	1.83E-05	0.07	0.1	0.92	1.82E-05	0.92	1.3	1.36	1.75E-05	0.9425	1.36	1.7	0.01	3.75E-07	0.8972	0.01	0.01	0.01	0.01	7.00	0.01
									Total	2.1			Total	26.6				Total	36.9				Total	0.26	0.25	0.24	Total	0.17

1. Unit was referenced from base year emission rate calculations for NBC Universal third party portable generators.

2. Manufacture year was determined based on estimated complaince with the requirements of the Portable Diesel-Fueled Engines Air Toxic Control Measure (ATCM) proposed by California Air Resources Board (CARB). The ATCM requires all portable engines to be certified to Tier 1, 2, or 3 U.S. EPA/CARB off-road engines standards by 2010. After 2010, all fleets of portable engines are required to meet diesel PM emissions averages that become more stringent in 2013, 2017, 2020.

3. Cumulative hours were calculated as the average of the starting hour and the ending hour since the deterioration is the average deterioration during those hours of use. Cumulative hours = (Base year - Manufacture year + 0.5) * (sum of activity for all third party portable generators / 11 third party portable generator units). Please note the maximum deterioration of diesel portable generators is 10,816 hours. The maximum deterioration of an engine is two times the useful life per Energy and Environmental Analysis Incorporated, prepared for the CARB, Documentation of Input Factors for the New Off-Road Mobile Source Emissions Inventory Model, February 1997. The maximum deterioration is calculated as the useful life of the engine (yrs) multiplied by the activity (hrs/yr), then multiplied by two useful lives. The useful life of the engine, 16 years, and the activity, 338 hrs/yr, were referenced from CARB, OFFROAD2007 Model, equip.csv.

4. Activity was referenced from the base year emission rate calculations for NBC Universal third party portable generators. Portable generator usage will be reduced in the future year due to replacement of portable generator usage in the backlot and south lot with electricity and the development of the south lot from the Project. 20% of the base year portable generator usage will remain in the Back Lot in the future year. 100% of the base year portable generator usage in the south lot will be eliminated in the future year. The future activity was calculated by multiplying the base year activity by the ratio of the number of future year production days to the number of base year production days. This activity was increased by the growth factor of the studio land use, referenced from the Evolution Plan, as a result of demand from the Project.

5. Engine power was referenced from the base year emission rate calculations for NBC Universal third party portable generators.

6. Load factors have been calculated as the ratio of operating engine power to maximum engine power. Load factor = fuel usage rate / (BSFC * Engine Power / Density of diesel). Fuel usage rate for NBC Universal owned generators #603 and #604, 7.0 gal/hr, was provided by NBC Universal. The fuel usage rate of all third party portable generators is assumed to be equal to generators #603 and 604. The Brake Specific Fuel Consumption (BSFC), 0.41 lb/hp-hr, was referenced from CARB, OFFROAD2007 Model, equip.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm. The density of diesel fuel, 7.1 lbs/gal, was referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1.

7. Zero-hour emission factors and deterioration factors were referenced from California Air Resources Board (CARB), OFFROAD2007 Model, emfac.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm.

8. The emission factor was calculated as the sum of the zero-hour emission factor and the deterioration factor multiplied by the cumulative hours (Emission Factor = Zero-hour Emission Factor + Deterioration Factor * Cumulative hours). The calculation methodology referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

9. Pollutant emissions were calculated as the product of the emission factor, engine power, load factor, activity, and the conversion factor. If applicable, the correction factor was multiplied by this product. (Emissions = Emission Factor * Engine Power * Load Factor * Activity * Conversion Factor, if applicable, * Correction Factor; where the Conversion Factor = 453.5924 grams per pound). The calculation methodology referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

10. Correction factors were referenced from CARB, OFFROAD Modeling Change Technical Memo, July 2005, Table 6, http://arb.ca.gov/msei/offroad/techmemo/arb_offroad_fuels.pdf

11. The emissions of PM_{10} and $PM_{2.5}$ were calculated by multiplying the total PM emissions by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, Internal Combustion, Distillate and Diesel - Except Electric Generation.

12. Fuel usage from referenced from the third party portable generators in the base year emission rate calculations.

13. SO_X emissions are assumed to be equal to SO_2 emissions. Sulfur content of low sulfur diesel is defined as 15 ppmw or less by SCAQMD Rule 431.2(b)(5). The density of diesel fuel is 7.1 pounds per gallon per USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1. SO_2 emissions are equal to the sulfur content of diesel fuel multiplied by the ratio of the molecular weight of sulfur to the molecular weight of SO_2, multiplied by the annual fuel consumption. The annual fuel consumption is calculated as the fuel usage rate (gal/hr) multiplied by the activity (hrs/yr).

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Table B.1-6A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Location Distribution Calculations
Onsite Mobile
Miscellaneous Diesel Fueled Sources

Land Use Area	Location	Location Distribution [1]	Emissions [2] (lbs/yr)					
			CO	NO_X	SO_X	VOC	PM_{10}	$PM_{2.5}$
Studio	Studio, Entertainment and Business Areas (NW)	100.0%	102.0	97.8	0.3	4.4	29.3	0.3
	Backlot (NE)	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
	South Lot (S)	0.0%	0.0	0.0	0.0	0.0	0.0	0.0
Entertainment Use		100.0%	34.0	32.6	0.1	1.5	11.2	0.10

1. Usage distribution was calculated as the ratio of the number of production days in a given lot area to the total number of production days. Location distribution based on potential Alternative 10 development. Usage is distributed between remaining areas.
2. Emissions were calculated by multpying the future year criteria pollutant and toxic air contaminant emissions by the usage distribution.

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Table B.1-6B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Rate Calculations
Onsite Mobile
Miscellaneous Diesel Fueled Sources

Land Use Area	Source Description	Engine Power [1] (hp)	Manufacture Year [2]	Future Year	Activity [3]	Cumulative Hours [4]	VOC Zero-hour Emission Factor [5]	VOC Deterioration Factor [5]	VOC Emission Factor [6]	VOC Emissions [7]	CO Zero-hour Emission Factor [5]	CO Deterioration Factor [5]	CO Emission Factor [6]	CO Emissions [7]	NOx Zero-hour Emission Factor [5]	NOx Deterioration Factor [5]	NOx Correction Factor [8]	NOx Emission Factor [6]	NO_X Emissions [7]	PM Zero-hour Emission Factor [5]	PM Deterioration Factor [5]	PM Correction Factor [8]	Total PM Emission Factor [6]	Total PM Emissions [7]	PM_{10} Emissions [9]	$PM_{2.5}$ Emissions [9]	Fuel Usage [10]	SO_X Emissions [11]
					(hr/yr)		(g/bhp-hr)	(g/bhp-hr^2)	(g/bhp-hr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(g/bhp-hr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(-)	(g/bhp-hr)	(lbs/yr)	(g/bhp-hr)	(g/bhp-hr^2)	(-)	(g/bhp-hr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(gal/yr)	(lbs/yr)
Studio	Crane #451	50	2013	2030	0	0.00	0.10	4.00E-05	0.10	0.0	2.72	2.76E-04	2.72	0	2.90	6.00E-05	0.94	2.90	0	0.01	1.20E-06	0.8972	0.01	0.00	0.00	0.00	0	0.00
Studio	Crane #452	50	2013	2030	25	419.35	0.10	4.00E-05	0.12	0.3	2.72	2.76E-04	2.84	8	2.90	6.00E-05	0.94	2.93	7	0.01	1.20E-06	0.8972	0.01	0.03	0.03	0.02	94	0.02
Studio	Skiploader #453	50	2013	2030	7	111.83	0.10	4.00E-05	0.10	0.1	2.72	2.76E-04	2.75	2	2.90	6.00E-05	0.94	2.91	2	0.01	1.20E-06	0.8972	0.01	0.01	0.01	0.01	25	0.01
Studio	Backhoe #454	50	2013	2030	49	838.70	0.10	4.00E-05	0.13	0.7	2.72	2.76E-04	2.95	16	2.90	6.00E-05	0.94	2.95	15	0.01	1.20E-06	0.8972	0.01	0.05	0.05	0.05	188	0.04
Studio	Forklift #435	50	2013	2030	26	447.30	0.10	4.00E-05	0.12	0.3	2.72	2.76E-04	2.84	8	2.90	6.00E-05	0.94	2.93	8	0.01	1.20E-06	0.8972	0.01	0.03	0.03	0.03	100	0.02
Entertainment Use	Tour	-	-	-	-	-	-	-	-	1.5	-	-	-	34	-	-	-	-	33	-	-	-	-	0.11	0.11	0.10	-	0.09
Studio	Third Party	-	-	-	-	-	-	-	-	1.5	-	-	-	34	-	-	-	-	33	-	-	-	-	0.11	0.11	0.10	-	0.09
Studio	Production	-	-	-	-	-	-	-	-	1.5	-	-	-	34	-	-	-	-	33	-	-	-	-	0.11	0.11	0.10	-	0.09
						Total				5.8				136.01					130						0.45	0.42		0.35

1. Engine power was referenced from the base year emission rate calcuations for miscellaneous diesel fueled sources.

2. Manufacture year was determined based on the assumption NBC Universal will apply for and receive funds under the Carl Moyer grant program to replace on-site diesel fueled mobile sources. Since Carl Moyer is currently set to expire in 2015 and a grant is usually given for a three-year project life, model year 2013 is assumed for all equipment to be replaced in the 2013-2015 time frame. Please note the requirements of the In-Use Off-Road Diesel Vehicle Regulation proposed by California Air Resources Board (CARB) apply to the on-site diesel fueled mobile sources. This regualtion requires the acceleration of the turnover of fleets to newer, cleaner engines. However, the early repower and retrofit of trams provides sufficient fleet credit for NBC Universal to be in compliance for the duration of the regulation (until 2020) and the facility would be eligible to apply for Carl Moyer grant, which can only cover excess emissions reductions.

3. Activity was referenced from the base year emission rate calcuations for miscellaneous diesel fueled sources. The base year activity was multiplied by the Studio growth factor.

4. Cumulative hours have been calculated as the product of the activity and the difference in base year and manufacture year. The maximum deterioration of an engine is two times the useful life per Energy and Environmental Analysis Incorporated, prepared for the CARB, Documentation of Input Factors for the New Off-Road Mobile Source Emissions Inventory Model, February 1997. The maximum deterioration is calculated as the useful life of the engine (yrs) multiplied by the activity (hrs/yr), then multiplied by two useful lives. The useful life of the engine, 16 years, and the activity, 690 hrs/yr, were referenced from CARB, OFFROAD2007 Model, equip.csv.

5. Zero-hour emission factor and deterioration factor were referenced from California Air Resources Board (CARB), OFFROAD2007 Model, emfac.csv, http://www.arb.ca.gov/msei/offroad/offroad.htm.

6. The emission factor was calculated as the sum of the zero-hour emission factor and the deterioration factor multiplied by the cumulative hours (Emission Factor = Zero-hour Emission Factor + Deterioration Factor * Cumulative Hours). the calculation methodology was referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

7. Pollutant emissions were calculated as the product of the emission factor, engine power, load factor, activity, and the conversion factor. If applicable, the correction factor was multiplied by this product. (Emissions = Emission Factor * Engine Power * Load Factor * Activity * Conversion Factor, if applicable, * Correction Factor; where the Conversion Factor = 453.5924 grams per pound). The calculation methodology referenced from CARB, Mobile Source Mailouts, MSC#99-32, M099_32.3.doc, section F.

8. Correction factors were referenced from CARB, OFFROAD Modeling Change Technical Memo, July 2005, Table 6, http://arb.ca.gov/msei/offroad/techmemo/arb_offroad_fuels.pdf.

9. The emissions of PM_{10} and $PM_{2.5}$ were calculated by multiplying the total PM emissions by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, Off-road equipment, Diesel.

10. Fuel usage was referenced from the base year emission rate calcuations for miscellaneous diesel fueled sources. The base year activity was multiplied by the Studio growth factor for sources in the Studio land use area.

11. SO_x emissions are assumed to be equal to SO_2 emissions. Sulfur content of low sulfur diesel is defined as 15 ppmw or less by SCAQMD Rule 431.2(b)(5). The density of diesel fuel is 7.1 pounds per gallon per USEPA, AP-42, Fifth edition, October 1996, Chapter 3.4, Table 3.4-1. SO_2 emissions equal the sulfur content of diesel fuel

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Table B.1-6C Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Paved Road Dust
Onsite Mobile
Miscellaneous Diesel Fueled Sources

Land Use Area	Source Description	GVW [1] (tons)	Annual VMT [2] (miles)	Fleet Average GVW [3] (tons)	Fleet Total Annual VMT [4]	Emission Factor [5] (lbs/VMT)		Emissions [6, 7] (lbs/yr)	
						PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Studio	Crane #451	0.94	1,942	0.94	36,894	7.86E-04	-1.64E-04	29	-6
Studio	Crane #452	0.94	518						
Studio	Skiploader #453	0.94	3,884						
Studio	Backhoe #454	0.94	2,071						
Studio	Forklift #435	0.94	3,884						
Studio	Third Party	4.69	12,298						
Studio	Production	4.69	12,298						
Entertainment Use	Tour	4.69	14,119	0.94	14118.68	0.00	0.000	11.1	-2.3

1. Gross vehicle weight (GVW) is assumed to be Class T1 as referenced from CARB EMFAC 2002 mobile source inventory at http://www.arb.ca.gov/msei/onroad/EMFAC2002trends.htm, 0-3,750 pounds, average is 1,875 pounds. The miscellaneous diesel fueled mobile sources at tour, third party, and production are conservatively estimated to be equal to that of the specific sources located at the Studio as indicated by NBC Universal.

2. Annual vehicle miles traveled (VMT) is based on fuel consumption provided by NBC Universal. Note fuel usage from miscellaneous diesel fueled mobile sources at tour, third party, and production are conservatively estimated to be equal to that of the specific sources located at the Studio. Fuel efficiency is assumed to be 20.7 mpg for all equipment as referenced from USEPA, Office of Air and Radiation/Office of Transportation and Air Quality, Fuel Economy and Emissions Programs Fact Sheet, http://www.epa.gov/otaq/cert/factshts/fefact01.pdf.

3. Fleet average GVW is the sum of the GVW for equipment in a land use area, divided by the number of sources in that land use area.

4. Fleet total annual VMT is the total miles traveled for the entire fleet.

5. Emission factor calculation methodology was referenced from USEPA, AP-42, Chapter 13.2.1, November 2006.

$$E_{ext} = \left[k \left(\frac{sL}{2} \right)^{0.65} \left(\frac{W}{3} \right)^{1.5} - C \right] \left(1 - \frac{P}{4N} \right)$$

where
E = Emission factor (lbs/VMT)

k = Particulate size multiplier (lbs/VMT). PM10 is 0.016 lbs/VMT and PM2.5 is 0.0024 lbs/VMT as referenced from table 13.2.1-1.

sL = Road surface silt loading (g/m2). sL is 0.6 g/m2 as referenced from table 13.2.1-3.
W = Average weight (tons).
C = Emission factor for 1980's vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT). PM10 is 0.00047 lbs/VMT and PM2.5 is 0.00036 lbs/VMT.
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. P = 40 days as referenced from figure 13.2.1-2.
N = number of days in the averaging period. N = 365 days per year.

6. Annual VMT was multiplied by the emission factor to obtain pounds per year. Annual VMT was calculated as the VMT for the two week observation period divided by 2 weeks and multiplied by 52 weeks per year.

7. Note when calculations result in negative emissions, emissions are zero as referenced from page 13.2.1-5.

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Table B.1-7A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Onsite Mobile
Miscellaneous Gasoline Fueled Sources

Location	Source Description	Engine Power[1] (hp)	Base Fuel Usage[1] (gal/yr)	Activity Growth	Fuel Usage[1] (gal/yr)	Criteria Pollutant Emission Factors[2] (lbs/1,000 gal)											Criteria Pollutant Emissions[4] (lbs/yr)												
						CO	NO_X	TOG Exhaust	TOG Evap	SO_X	PM_{10}[3] Exhaust	$PM_{2.5}$[3]	PM_{10} Tire Wear	PM_{10} Brake Wear	$PM_{2.5}$ Tire Wear	$PM_{2.5}$ Brake Wear	CO	NO_X	TOG Exhaust	TOG Evap	SO_X	PM_{10}[3] Exhaust	$PM_{2.5}$ Exhaust	PM_{10} Tire Wear	PM_{10} Brake Wear	$PM_{2.5}$ Tire Wear	$PM_{2.5}$ Brake Wear	Total PM_{10}	Total $PM_{2.5}$
Studio	Forklift #438	50	110	1.44	158	3,747.799	73.993	37.991	19.736	0.181	0.915	0.692	-	-	-	-	592	12	6	3	0.0	0.1	0.1	0	0	0	0	0.1	0.1
Studio	Golf Carts (approx. 400)	20	15,000	1.44	21,539	5,462.732	54.877	78.377	114.980	0.430	3.536	2.672	-	-	-	-	117,881	1,182	1,688	2,477	9	76	58	0	0	0	0	76	58
Studio	Maintenance Pick-ups	200	15,000	1.44	21,539	38.289	2.605	1.399	3.936	0	0.868	0.617	0.309	0.482	0.077	0.212	825	56	30	85	0	14	13	7	10	2	5	31	20
Entertainment Use	Tour	-	-	-	-	See Note 1 for Tour, Third Party, and Production assumptions											60,247	659	880	1,326	5	53	42	7	10	2	5	70	48
Studio	Third Party	-	-	-	-												592	12	6	3	0	0.1	0.1	0	0	0	0	0.1	0.1
Studio	Production	-	-	-	-												592	12	6	3	0	0.1	0.1	0	0	0	0	0.1	0.1
																Total Studio, Third Party and Production	120,261	1,273	1,736	2,571	9	91	71	7	10	2	5	108	77
																Tour	60,247	659	880	1,326	5	53	42	7	10	2	5	70	48

1. Engine power, manufacture year, and fuel usage were provided by NBC Universal. Note fuel usage of miscellaneous gasoline fueled mobile sources at tour conservatively estimated to be equal to Studio (except tour has approximately 200 golf carts). Third party and production are conservatively estimated to be equal to the Studio subtracting golf carts and pickups.

2. Emission factors for golf carts and forklift were developed by running OFFROAD2007 for the South Coast Basin for year 2030 and dividing total criteria pollutant emissions by total fuel consumed for each type of source. Factors were calculated based on OFFROAD2007 equipment age distribution and represent mean emissions for similar equipment in the South Coast. For pickups, EMFAC2007 was run for the South Coast basin in 2030, and for vehicle category LDT1 (light-duty trucks 1), the sum of catalyst and non-catalyst emissions for each pollutant were divided by total fuel consumption for catalyst and non-catalyst LDT1's to produce fuel-based emissions factors.

3. The emission factors for PM_{10} and $PM_{2.5}$ for the offroad sources were obtained by multiplying the total PM emission factor (from OFFROAD2007) by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, Off-road equipment, Gasoline. Emissions factors for PM_{10} and $PM_{2.5}$ for pickups were produced directly by EMFAC using the year 2030.

4. Pollutant emissions were calculated as the product of the fuel usage (gal/yr) and the emission factor (lbs/1,000 gal).

Table B.1-7B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Paved Road Dust
Onsite Mobile
Miscellaneous Gasoline Fueled Sources

Land Use Area	Source Description	GVW [1] (tons)	Annual VMT [2] (miles)	Fleet Average GVW [3] (tons)	Fleet Total Annual VMT [4]	Emission Factor [5] (lbs/VMT)		Emissions [6] (lbs/yr)	
						PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Studio	Forklift #436	1	3,270	1	1,047,978	7.86E-04	0.00E+00	824	0
Studio	Golf Carts (approx. 400)	375	445,853						
Studio	Maintenance Pick-ups	375	592,317						
Studio	Third Party	1	3,270						
Studio	Production	1	3,270						
Entertainment Use	Tour	563	818,513	1	818,513	7.86E-04	0.00E+00	643	0

1. Gross vehicle weight (GVW) is assumed to be Class T1 as referenced from CARB EMFAC 2002 mobile source inventory at http://www.arb.ca.gov/msei/onroad/EMFAC2002trends.htm, 0-3,750 pounds, average is 1,875 pounds. The number of maintenance pick-ups is assumed to be equal to golf carts. The GVW and number of miscellaneous gasoline fueled mobile sources at tour is conservatively estimated to be equal to Studio (except tour has approximately 200 golf carts). Third party and production are conservatively estimated to be equal to the Studio subtracting golf carts and pickups. Tour, third party, and production assumptions were provided by NBC Universal.
2. Annual vehicle miles traveled (VMT) is based on fuel consumption was provided by NBC Universal. Please note fuel usage from miscellaneous diesel fueled mobile sources at tour, third party, and production are conservatively estimated to be equal to that of the specific sources located at the Studio. Fuel efficiency is assumed to be 20.7 mpg for all equipment except pick-ups is 27.5 mpg as referenced from USEPA, Office of Air and Radiation/Office of Transportation and Air Quality, Fuel Economy and Emissions Programs Fact Sheet, http://www.epa.gov/otaq/cert/factshts/fefact01.pdf.

3. Fleet average GVW is calculated as the sum of the GVW for a land use area, divided by the number of sources in that land use area.
4. Fleet total annual VMT is the total miles traveled for the entire fleet.
5. Emission factor calculation methodology was referenced from USEPA, AP-42, Chapter 13.2.1, November 2006.

$$E_{ext} = \left[k\left(\frac{sL}{2}\right)^{0.65} \left(\frac{W}{3}\right)^{1.5} - C \right]\left(1 - \frac{P}{4N}\right)$$

where
E = Emission factor (lbs/VMT)
k = Particulate size multiplier (lbs/VMT). PM10 is 0.016 lbs/VMT and PM2.5 is 0.0024 lbs/VMT as referenced from table 13.2.1-1.
sL = Road surface silt loading (g/m2). sL is 0.6 g/m2 as referenced from table 13.2.1-3.
W = Average weight (tons).
C = Emission factor for 1980's vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT). PM10 is 0.00047 lbs/VMT and PM2.5 is 0.00036 lbs/VMT.
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. P = 40 days as referenced from figure 13.2.1-
N = number of days in the averaging period. N = 365 days per year.
6. Annual VMT was multiplied by the emission factor to obtain pounds per year. Annual VMT was calculated as the VMT for the two week observation period divided by 2 weeks and multiplied by 52 weeks per year.
7. Please note when calculations result in negative emissions, emissions are zero as referenced from page 13.2.1-5.

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Table B.1-8A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Onsite Mobile
Miscellaneous Propane Fueled Sources

Location	Source Description	Engine Power[1] (hp)	Base Fuel Usage[1] (gal/yr)	Activity Growth	Fuel Usage[1] (gal/yr)	Criteria Pollutant Emission Factors[2] (lbs/ 1,000 gal)						Criteria Pollutant Emissions[4] (lbs/yr)					
						CO	NO_X	VOC	SO_X	PM_{10}[3]	$PM_{2.5}$[3]	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Studio	Forklift #'s 432, 444, 445, 447, 448	50	500	1.44	718	219.66	57.46	14.44	0	1.21	1.21	158	41	10	0	1	1
Studio	Street Sweepers and Condors	50	500	1.44	718	166.05	45.27	6.24	0	1.22	1.22	119	33	4	0	1	1
Entertainment Use	Tour	-	-	-	-							277	74	15	0	2	2
Studio	Third Party	-	-	-	-							277	74	15	0	2	2
Studio	Production	-	-	-	-							277	74	15	0	2	2
											Total Studio, Third Party and Production	**831**	**221**	**45**	**0**	**5**	**5**
											Tour	**277**	**74**	**15**	**0**	**2**	**2**

1. Engine power, manufacture year, and fuel usage were provided by NBC Universal. Fuel use values in future year are multiplied by appropriate growth factor for this category ("Entertainment Use"). Please note fuel usage of miscellaneous propane fueled mobile sources at tour, third party, and production conservatively estimated to be equal to Studio.

2. Emission factors propane forklifts and sweepers were developed by running OFFROAD2007 for the South Coast Basin for year 2030 and dividing total criteria pollutant emissions by total fuel consumed for each type of source. Factors were calculated based on OFFROAD2007 equipment age distribution and represent mean emissions for similar equipment in the South Coast for 2030.

3. The emission factors for PM_{10} and $PM_{2.5}$ were obtained by multiplying the total PM emission factor for a 2030 model run by the respective fraction of total PM. The PM_{10} and $PM_{2.5}$ fractions of total PM were referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A.

4. Pollutant emissions were calculated as the product of the fuel usage (gal/yr) and the emission factors (lbs/1,000 gal).

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Table B.1-8B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Toxic Air Contaminate Emission Rate Calculations
Onsite Mobile
Miscellaneous Propane Fueled Sources

Location	Source Description	Engine Power[1] (hp)	Manufacture Year[1]	Base Year	Fuel Usage[1] (gal/yr)	Toxic Air Contaminant Emission Factors[2] (lbs/ 1,000 gal)				Toxic Air Contaminant Emissions[3] (lbs/yr)			
						Ammonia	Benzene	Formaldehyde	PAHs	Ammonia	Benzene	Formaldehyde	PAHs
Studio	Forklift #'s 432, 444, 445, 447, 448	50	1986	2008	718	0.3	0.00071	0.00151	0.00004	2.15E-01	5.10E-04	1.08E-03	2.87E-05
Studio	Street Sweepers and Condors	50	1986	2008	718	0.3	0.00071	0.00151	0.00004	2.15E-01	5.10E-04	1.08E-03	2.87E-05
Entertainment Use	Tour	-	-	-	1,436	0.3	0.00071	0.00151	0.00004	4.31E-01	1.02E-03	2.17E-03	5.74E-05
Studio	Third Party	-	-	-	1,436	0.3	0.00071	0.00151	0.00004	4.31E-01	1.02E-03	2.17E-03	5.74E-05
Studio	Production	-	-	-	1,436	0.3	0.00071	0.00151	0.00004	4.31E-01	1.02E-03	2.17E-03	5.74E-05
									Total Studio, Third Party and Production	**1.29E+00**	**3.06E-03**	**6.50E-03**	**1.72E-04**
									Tour	**4.31E-01**	**1.02E-03**	**2.17E-03**	**5.74E-05**

1. Engine power, manufacture year, and fuel usage were provided by NBC Universal. Fuel use values in future year are multiplied by appropriate growth factor for this category. Please note fuel usage of miscellaneous propane fueled mobile sources at tour, third party, and production conservatively estimated to be equal to Studio.

2. Emission factors were referenced from SCAQMD, 2005-2006 Annual Emission Reporting Program, General Instruction Book, Appendix A, Table 8, External Combustion Equipment. Note that there are no ARB speciation profiles specific to propane mobile sources, therefore AQMD AER factors were used in this case.

3. Pollutant emissions were calculated as the product of the fuel usage (gal/yr) and the emission factors (lbs/1,000 gal).

Table B.1-8C Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Paved Road Dust
Onsite Mobile
Miscellaneous Propane Fueled Sources

Land Use Area	Source Description	GVW [1] (tons)	Annual VMT [2] (miles)	Fleet Average GVW [3] (tons)	Fleet Total Annual VMT [4]	Emission Factor [5] (lbs/VMT)		Emissions [6, 7] (lbs/yr)	
						PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$ [7]
Studio	Forklift #'s 432, 444, 445, 447, 448	5	14,862	1	89,171	7.86E-04	0.00E+00	70	0
Studio	Street Sweepers and Condors	5	14,862						
Studio	Third Party	9	29,724						
Studio	Production	9	29,724						
Entertainment Use	Tour	9	29,724	1	29,724	7.86E-04	0.00E+00	23	0

1. Gross vehicle weight (GVW) is assumed to be Class T1 as referenced from CARB EMFAC 2002 mobile source inventory at http://www.arb.ca.gov/msei/onroad/EMFAC2002trends.htm, 0-3,750 pounds, average is 1,875 pounds. This value was multiplied by the number of pieces of equipment. The number of street sweepers and condors is assumed to be equal to the number of forklifts. The GVW and number of third party, production, and tour miscellaneous propane fueled sources are conservatively estimated to be equal to Studio as indicated by NBC Universal.

2. Annual vehicle miles traveled (VMT) is based on fuel consumption was provided by NBC Universal. Note fuel usage from miscellaneous diesel fueled mobile sources at tour, third party, and production are conservatively estimated to be equal to that of the specific sources located at the Studio. Fuel efficiency is assumed to be 20.7 mpg for all equipment as referenced from USEPA, Office of Air and Radiation/Office of Transportation and Air Quality, Fuel Economy and Emissions Programs Fact Sheet, http://www.epa.gov/otaq/cert/factshts/fefact01.pdf.

3. Fleet average GVW is the sum of GVW for all studio equipment divided by the number of sources. Please note the number of street sweepers and condors is assumed to be equal to the number of forklifts. The number of third party, production, and tour miscellaneous propane fueled sources are conservatively estimated to be equal to Studio.

4. Fleet total annual VMT is the total miles traveled for the entire fleet.

5. Emission factor calculation methodology was referenced from USEPA, AP-42, Chapter 13.2.1, November 2006.

$$E_{ext} = \left[k\left(\frac{sL}{2}\right)^{0.65} \left(\frac{W}{3}\right)^{1.5} - C \right]\left(1 - \frac{P}{4N}\right)$$

where
E = Emission factor (lbs/VMT)
k = Particulate size multiplier (lbs/VMT). PM10 is 0.016 lbs/VMT and PM2.5 is 0.0024 lbs/VMT as referenced from table 13.2.1-1.
sL = Road surface silt loading (g/m2). sL is 0.6 g/m2 as referenced from table 13.2.1-3.
W = Average weight (tons).
C = Emission factor for 1980's vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT). PM10 is 0.00047 lbs/VMT and PM2.5 is 0.00036 lbs/VMT.
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. P = 40 days as referenced from figure 13.2.1-2.
N = number of days in the averaging period. N = 365 days per year.

6. Annual VMT was multiplied by the emission factor to obtain pounds per year for criteria pollutants.

7. Note when calculations result in negative emissions, emissions are zero as referenced from page 13.2.1-5.

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Table B.1-9A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emissions Summary
Delivery Trucks

Route#	Route [1]	Criteria Pollutant Emissions (lbs/yr)					
		CO	NO_X	SO_2	VOC	PM_{10}	$PM_{2.5}$
1	Gate 4 to Transportation (420m)	506	218	0.5	95	65	9
2	Gate 4 to Property (420m)	715	283	0.7	137	76	10
3	Gate 4 to 4250 (1395m)	214	83	0.4	41	54	6
4	Gate 6 to 6525/6528 (490m)	95	42	0.1	18	14	2
5	Gate 6 to Amphitheater (755m)	39	14	0.04	8	6	1
6	Gate 6 to Zone 6 (860m)	26	12	0.04	5	7	1
7	Gate 6 to Zone 5 (1018m)	313	118	0.4	60	59	7
13	Gate 6 to 5511 (865m)	58	20	0.1	11	9	1
14	Gate 4 to Zone 6 (1455m)	122	52	0.2	23	38	5
15	Gate 4 to Zone 1 (2030m)	186	76	0.4	36	60	7
16	Gate 4 to Zone 2 (1711m)	305	127	0.6	58	96	11
18	Gate 4 to Zone 3 (1369m)	212	85	0.4	40	57	7
19	Gate 4 to Zone 4 (896m)	158	63	0.2	30	35	4
20	Gate 4 to Barham Lot (279m)	136	52	0.2	26	23	3
8	Gate 6 to Zone 1 (2570m)	5	2	0.01	1	11	2
9	Gate 6 to Zone 2 (2285m)	5	2	0.01	1	4	1
10	Gate 6 to Zone 3 (1887m)	6	2	0.01	1	3	0.4
11	Gate 6 to Zone 4 (1345m)	3	1	0.005	1	2	0.3
12	Gate 6 to Barham Lot (1845m)	3	1	0.01	1	5	1
17	Gate 4 to Zone 5 (2130m)	74	30	0.1	14	26	3
21	Gate 4 to 5511 (2012m)	69	28	0.1	13	22	3
Total		**3250**	**1311**	**4.5**	**619**	**672**	**82**

1. Route information is a summary of the actual data provided by NBC Universal from a delivery truck count/survey in 2007. The most frequent routes are explicitly represented and the remaining are grouped into zones 1 to 6. Base Year Activity is grown into the future year using the growth factor for 'All areas except hotel.'

ENVIRON

Table B.1-9B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Factors [1]
Delivery Trucks

Emission Type	Pol	Speed/Other Activity	Speed/Other Activity Units	Emission Factor Units	Temp (F)	LHD1 CAT	LHD1 DSL	LHD2 CAT	LHD2 DSL	MHD CAT	MHD DSL
Running Exhaust	TOG	0	mi/hr	g/idle-hour	85	21.728	3.612	21.827	3.612	21.759	3.612
Running Exhaust	TOG	15	mi/hr	g/mi	85	0.076	0.169	0.038	0.168	0.085	0.215
Running Exhaust	CO	0	mi/hr	g/idle-hour	60	128.218	26.3	128.605	26.3	128.341	26.3
Running Exhaust	CO	15	mi/hr	g/mi	60	0.766	1.386	0.368	1.319	0.877	2.494
Running Exhaust	NOx	0	mi/hr	g/idle-hour	60	1.377	75.051	1.383	75.051	1.379	75.051
Running Exhaust	NOx	15	mi/hr	g/mi	60	0.163	1.301	0.118	1.249	0.198	1.439
Running Exhaust	SO2	0	mi/hr	g/idle-hour	60	0.048	0.039	0.048	0.039	0.048	0.039
Running Exhaust	SO2	15	mi/hr	g/mi	60	0.011	0.005	0.011	0.005	0.011	0.014
Running Exhaust	PM10	0	mi/hr	g/idle-hour	60	0	0.791	0	0.809	0	0.807
Running Exhaust	PM10	15	mi/hr	g/mi	60	0.024	0.04	0.022	0.039	0.024	0.221
Tire Wear	PM10	15	mi/hr	g/mi	60	0.012	0.012	0.012	0.012	0.012	0.012
Brake Wear	PM10	15	mi/hr	g/mi	60	0.013	0.013	0.013	0.013	0.013	0.013
Running Exhaust	PM2.5	0	mi/hr	g/idle-hour	60	0	0.728	0	0.744	0	0.742
Running Exhaust	PM2.5	15	mi/hr	g/mi	60	0.022	0.037	0.021	0.036	0.023	0.203
Tire Wear	PM2.5	15	mi/hr	g/mi	60	0.003	0.003	0.003	0.003	0.003	0.003
Brake Wear	PM2.5	15	mi/hr	g/mi	60	0.005	0.005	0.005	0.005	0.005	0.005
Start	TOG	20	minutes	g/trip	85	0.248	0	0.199	0	0.539	0
Start	CO	20	minutes	g/trip	60	4.231	0	3.469	0	11.317	0
Start	NOx	20	minutes	g/trip	60	1.539	0	1.396	0	1.41	0
Start	SO2	20	minutes	g/trip	60	0	0	0	0	0.001	0
Start	PM10	20	minutes	g/trip	60	0.003	0	0.003	0	0.005	0
Start	PM2.5	20	minutes	g/trip	60	0.003	0	0.003	0	0.005	0
Hot Soak	TOG	20	minutes	g/trip	85	0.066	0	0.053	0	0.032	0
Run loss	TOG	35	minutes	g/min	85	0.04	0	0.031	0	0.033	0

1. Criteria pollutant emission factors were calculated using the EMFAC model, California Air Resources Board (CARB), EMFAC model, 2007, http://www.arb.ca.gov/msei/onroad/latest_version.htm. The EMFAC model was run based on a fleet mix from Southern California Air Basin and the assumption of 40% humidity and 60 degrees Fahrenheit for all pollutants except TOG, which used 85 F. Please note the fleet mix from Southern California Air Basin only includes catalyst gasoline vehicles for these vehicle classes.
2. Emission type Running Exhaust at a speed/other activity of 0 mi/hr represents Running Exhaust in idle.
3. Emission type Start speed/other activity units are minutes of engine off time.

Table B.1-9C Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Calculations
Delivery Trucks

Activity Descriptors											Criteria Pollutant Emissions (grams / 2 weeks)																														
Gate	Destination	Truck Size	# Trips	Total Mileage for a Round Trip	Idle Time (hour)	Time on Property (minutes)	Diesel EMFAC vehicle class	Diesel VMT fraction	Catalyst EMFAC vehicle class	Catalyst VMT fraction	Diesel Exhaust TOG	Diesel Exhaust CO	Diesel Exhaust NOx	Diesel Exhaust SO_2	Diesel Exhaust PM10	Diesel Tire Wear PM10	Diesel Brake Wear PM10	Diesel Exhaust PM2.5	Diesel Tire & Brake PM2.5	Catalyst Exhaust TOG	Catalyst TOG Start	Catalyst TOG + Hotsoak + Running	Catalyst Exhaust CO	Catalyst Start CO	Catalyst Exhaust NOx	Catalyst Start NOx	Catalyst Exhaust SO_2	Catalyst Start SO_2	Catalyst Exhaust PM10	Catalyst Start PM10	Catalyst Tire Wear PM10	Catalyst Brake Wear PM10	Catalyst Exhaust PM2.5	Catalyst Start PM2.5	Catalyst Tire & Brake PM2.5	Total TOG	Total CO	Total NOx	Total SO2	Total PM10	Total PM2.5
Gate 4	4250	large	30	52	3	986	MHD DSL	0.82	MHD CAT	0.18	18.1	171	247	0.69	11.44	0.51	0.56	10.51	0.34	12.3	2.8	5.9	76	60	2.5	7.4	0.13	0.005	0.22	0.03	0.11	0.12	0.21	0.03	0.07	39	307	257	0.8	13.0	11.2
Gate 4	4250	medium	87	151	9	2864	LHD2 DSL	0.43	LHD2 CAT	0.57	24.3	183	360	0.47	5.54	0.78	0.84	5.10	0.52	111.7	9.9	53.4	671	172	17.0	69.4	1.19	0	1.90	0.15	1.03	1.12	1.81	0.15	0.69	199	1,026	447	1.7	11.3	8.3
Gate 4	4250	small	84	146	8	2770	LHD1 DSL	0.21	LHD1 CAT	0.79	11.5	88	171	0.22	2.60	0.36	0.39	2.40	0.24	153.5	16.5	92.1	942	282	28.0	102.5	1.59	0	2.77	0.20	1.39	1.50	2.54	0.20	0.92	274	1,312	302	1.8	9.2	6.3
Gate 4	5511	medium	6	14	1	205	LHD2 DSL	0.43	LHD2 CAT	0.57	1.9	14	26	0.04	0.44	0.07	0.08	0.40	0.05	7.4	0.6	3.8	45	11	1.4	4.5	0.11	0	0.18	0.01	0.10	0.11	0.17	0.01	0.07	14	71	32	0.1	1.0	0.7
Gate 4	5511	small	3	7	0	103	LHD1 DSL	0.21	LHD1 CAT	0.79	0.5	4	6	0.01	0.11	0.02	0.02	0.10	0.01	5.3	0.6	3.4	33	10	1.2	3.5	0.07	0	0.14	0.01	0.07	0.07	0.12	0.01	0.05	10	46	11	0.1	0.4	0.3
Gate 4	*CSI	large	24	56	2	855	MHD DSL	0.82	MHD CAT	0.18	17.2	168	217	0.73	11.87	0.56	0.60	10.90	0.37	10.2	2.3	5.1	64	48	2.6	6.0	0.13	0.004	0.24	0.02	0.12	0.13	0.23	0.02	0.08	35	280	225	0.9	13.5	11.6
Gate 4	*CSI	medium	64	149	6	2265	LHD2 DSL	0.43	LHD2 CAT	0.57	20.7	157	286	0.43	4.72	0.77	0.83	4.35	0.51	83.3	7.3	42.1	503	127	15.1	51.2	1.11	0	1.88	0.11	1.02	1.11	1.79	0.11	0.68	153	787	352	1.5	10.4	7.4
Gate 4	*CSI	small	48	113	5	1711	LHD1 DSL	0.21	LHD1 CAT	0.79	7.6	59	106	0.16	1.74	0.28	0.31	1.60	0.19	90.2	9.5	56.7	560	162	19.8	59.1	1.17	0	2.14	0.12	1.07	1.16	1.96	0.12	0.71	164	782	185	1.3	6.8	4.6
Gate 4	*Desparate Housewives	large	43	100	4	1512	MHD DSL	0.82	MHD CAT	0.18	30.4	298	383	1.29	21.04	0.99	1.07	19.33	0.66	17.9	4.1	9.0	112	85	4.5	10.6	0.23	0.008	0.42	0.04	0.21	0.23	0.41	0.04	0.14	61	496	398	1.5	24.0	20.6
Gate 4	*Desparate Housewives	medium	100	233	10	3528	LHD2 DSL	0.43	LHD2 CAT	0.57	32.2	244	446	0.67	7.36	1.20	1.30	6.78	0.80	129.5	11.3	65.5	782	198	23.6	79.6	1.74	0	2.93	0.17	1.60	1.73	2.80	0.17	1.07	239	1,225	549	2.4	16.3	11.6
Gate 4	*Desparate Housewives	small	71	167	7	2520	LHD1 DSL	0.21	LHD1 CAT	0.79	11.2	87	157	0.23	2.56	0.42	0.45	2.37	0.28	132.6	14.0	83.5	825	239	29.3	86.8	1.72	0	3.17	0.17	1.58	1.72	2.90	0.17	1.06	241	1,151	273	2.0	10.1	6.8
Gate 4	*Ghost Whisperer	large	21	50	2	758	MHD DSL	0.82	MHD CAT	0.18	15.3	150	192	0.65	10.60	0.50	0.54	9.74	0.33	9.0	2.0	4.5	56	43	2.3	5.3	0.12	0.004	0.21	0.02	0.11	0.12	0.20	0.02	0.07	31	249	200	0.8	12.1	10.4
Gate 4	*Ghost Whisperer	medium	40	94	4	1414	LHD2 DSL	0.43	LHD2 CAT	0.57	13.0	98	179	0.27	2.96	0.48	0.52	2.73	0.32	51.8	4.5	26.3	313	79	9.5	31.8	0.70	0	1.18	0.07	0.65	0.70	1.13	0.07	0.43	96	490	220	1.0	6.6	4.7
Gate 4	*Ghost Whisperer	small	46	108	5	1617	LHD1 DSL	0.21	LHD1 CAT	0.79	7.2	56	100	0.15	1.65	0.27	0.29	1.52	0.18	84.9	9.0	53.6	528	153	18.9	55.6	1.11	0	2.04	0.11	1.02	1.11	1.87	0.11	0.68	155	737	175	1.3	6.5	4.4
Gate 4	*Multiple	large	3	5	0	95	MHD DSL	0.82	MHD CAT	0.18	1.8	17	24	0.07	1.15	0.05	0.06	1.06	0.03	1.2	0.3	0.6	7	6	0.3	0.7	0.01	0	0.02	0.003	0.01	0.01	0.02	0.003	0.01	4	30	25	0.1	1.3	1.1
Gate 4	*Multiple	medium	53	98	5	1763	LHD2 DSL	0.43	LHD2 CAT	0.57	15.2	115	222	0.30	3.46	0.50	0.55	3.19	0.34	67.9	6.0	32.8	408	105	10.8	42.1	0.76	0	1.23	0.09	0.67	0.73	1.17	0.09	0.45	122	628	275	1.1	7.2	5.2
Gate 4	*Multiple	small	41	77	4	1382	LHD1 DSL	0.21	LHD1 CAT	0.79	5.8	45	85	0.11	1.32	0.19	0.21	1.22	0.13	75.7	8.1	45.9	466	138	14.4	50.4	0.82	0	1.46	0.10	0.73	0.79	1.34	0.10	0.49	136	649	150	0.9	4.8	3.3
Gate 4	*National Treasure 2	large	74	139	7	2483	MHD DSL	0.82	MHD CAT	0.18	46.6	446	623	1.84	30.20	1.37	1.49	27.75	0.92	30.5	7.1	14.9	189	148	6.7	18.4	0.33	0.01	0.59	0.07	0.29	0.32	0.56	0.07	0.20	99	783	648	2.2	34.3	29.5
Gate 4	*National Treasure 2	medium	151	283	15	5061	LHD2 DSL	0.43	LHD2 CAT	0.57	43.8	330	638	0.86	9.97	1.46	1.58	9.19	0.97	194.6	17.2	94.2	1,170	300	31.0	120.5	2.19	0	3.56	0.26	1.94	2.10	3.40	0.26	1.29	350	1,800	789	3.1	20.9	15.1
Gate 4	*National Treasure 2	small	123	230	12	4106	LHD1 DSL	0.21	LHD1 CAT	0.79	17.3	133	254	0.34	3.93	0.57	0.62	3.63	0.38	224.7	24.1	136.4	1,384	411	43.0	149.4	2.47	0	4.36	0.29	2.18	2.36	4.00	0.29	1.45	403	1,928	446	2.8	14.3	9.8
Gate 4	Barham Lot	large	14	5	1	390	MHD DSL	0.82	MHD CAT	0.18	5.1	41	94	0.10	1.85	0.05	0.05	1.70	0.03	5.5	1.4	2.4	33	28	0.5	3.5	0.02	0.003	0.02	0.01	0.01	0.01	0.02	0.01	0.01	14	103	98	0.1	2.0	1.8
Gate 4	Barham Lot	medium	54	19	5	1484	LHD2 DSL	0.43	LHD2 CAT	0.57	9.7	72	184	0.13	2.19	0.10	0.10	2.02	0.06	68.0	6.2	27.9	402	107	5.5	43.2	0.27	0	0.24	0.09	0.13	0.14	0.23	0.09	0.09	112	581	233	0.4	3.0	2.5
Gate 4	Barham Lot	small	41	14	4	1132	LHD1 DSL	0.21	LHD1 CAT	0.79	3.6	27	69	0.05	0.80	0.04	0.04	0.74	0.02	72.0	8.1	38.0	428	138	6.4	50.4	0.28	0	0.27	0.10	0.14	0.15	0.25	0.10	0.09	122	594	125	0.3	1.5	1.2
Gate 4	Property	large	144	75	14	4044	MHD DSL	0.82	MHD CAT	0.18	56.1	466	979	1.33	23.25	0.74	0.80	21.36	0.50	56.4	13.7	24.4	338	288	6.1	35.8	0.27	0.03	0.32	0.13	0.16	0.17	0.31	0.13	0.11	151	1,092	1,021	1.6	25.6	22.4
Gate 4	Property	medium	614	321	61	17258	LHD2 DSL	0.43	LHD2 CAT	0.57	118.2	874	2,148	1.71	26.66	1.65	1.79	24.54	1.10	773.3	69.9	324.3	4,583	1,218	70.2	490.1	3.70	0	4.03	1.05	2.20	2.38	3.85	1.05	1.47	1,286	6,675	2,708	5.4	39.8	32.0
Gate 4	Property	small	249	130	25	7007	LHD1 DSL	0.21	LHD1 CAT	0.79	23.4	174	425	0.34	5.20	0.33	0.35	4.79	0.22	437.0	49.0	234.9	2,611	836	44.0	304.0	2.08	0	2.47	0.59	1.24	1.34	2.27	0.59	0.82	744	3,621	773	2.4	11.5	8.7
Gate 4	Transportation	large	165	86	17	4645	MHD DSL	0.82	MHD CAT	0.18	64.5	535	1,124	1.53	26.70	0.85	0.92	24.54	0.57	64.8	15.7	28.0	388	330	7.0	41.1	0.31	0.03	0.37	0.15	0.18	0.20	0.35	0.15	0.12	173	1,254	1,173	1.9	29.4	25.7
Gate 4	Transportation	medium	381	199	38	10691	LHD2 DSL	0.43	LHD2 CAT	0.57	73.2	541	1,331	1.06	16.52	1.02	1.11	15.20	0.68	479.1	43.3	200.9	2,839	755	43.5	303.6	2.29	0	2.50	0.65	1.36	1.48	2.38	0.65	0.91	796	4,135	1,678	3.4	24.6	19.8
Gate 4	Transportation	small	163	85	16	4565	LHD1 DSL	0.21	LHD1 CAT	0.79	15.2	114	277	0.22	3.39	0.21	0.23	3.12	0.14	284.7	31.9	153.0	1,701	544	28.7	198.0	1.36	0	1.61	0.39	0.81	0.87	1.48	0.39	0.54	485	2,359	504	1.6	7.5	5.7
Gate 4	Zone 1	large	21	54	2	772	MHD DSL	0.82	MHD CAT	0.18	15.9	157	196	0.69	11.24	0.53	0.58	10.33	0.36	9.0	2.0	4.6	57	43	2.4	5.3	0.12	0.004	0.23	0.02	0.11	0.12	0.22	0.02	0.08	32	257	204	0.8	12.8	11.0
Gate 4	Zone 1	medium	86	216	9	3087	LHD2 DSL	0.43	LHD2 CAT	0.57	28.8	218	391	0.61	6.57	1.11	1.20	6.06	0.74	111.4	9.7	57.3	674	170	21.3	68.2	1.59	0	2.71	0.15	1.48	1.60	2.59	0.15	0.99	207	1,062	480	2.2	14.8	10.5
Gate 4	Zone 1	small	51	129	5	1852	LHD1 DSL	0.21	LHD1 CAT	0.79	8.4	66	115	0.18	1.92	0.32	0.35	1.78	0.22	96.1	10.1	61.3	599	172	22.3	62.5	1.32	0	2.46	0.12	1.23	1.33	2.26	0.12	0.82	176	837	200	1.5	7.7	5.2
Gate 4	Zone 2	large	68	146	7	2361	MHD DSL	0.82	MHD CAT	0.18	46.1	447	595	1.90	31.03	1.44	1.56	28.51	0.96	28.5	6.5	14.1	178	137	6.8	17.0	0.34	0.01	0.62	0.06	0.31	0.33	0.59	0.06	0.21	95	761	619	2.3	35.3	30.3
Gate 4	Zone 2	medium	134	285	13	4624	LHD2 DSL	0.43	LHD2 CAT	0.57	41.3	312	584	0.83	9.41	1.47	1.59	8.67	0.98	173.3	15.2	86.0	1,045	266	29.8	106.9	2.16	0	3.58	0.23	1.95	2.12	3.42	0.23	1.30	316	1,622	720	3.0	20.3	14.6
Gate 4	Zone 2	small	115	246	12	3985	LHD1 DSL	0.21	LHD1 CAT	0.79	17.3	134	247	0.35	3.95	0.61	0.67	3.64	0.41	213.4	22.7	132.2	1,321	387	44.3	140.7	2.58	0	4.67	0.27	2.33	2.53	4.28	0.27	1.56	386	1,842	432	2.9	15.0	10.2
Gate 4	Zone 3	large	41	70	4	1356	MHD DSL	0.82	MHD CAT	0.18	24.8	234	339	0.94	15.55	0.70	0.75	14.29	0.46	16.9	3.9	8.1	105	83	3.5	10.3	0.17	0.007	0.30	0.04	0.15	0.16	0.29	0.04	0.10	54	421	353	1.1	17.6	15.2
Gate 4	Zone 3	medium	78	133	8	2572	LHD2 DSL	0.43	LHD2 CAT	0.57	21.7	164	324	0.42	4.95	0.69	0.74	4.56	0.46	100.7	8.9	47.9	604	155	15.2	62.5	1.05	0	1.68	0.13	0.91	0.99	1.60	0.13	0.61	179	923	401	1.5	10.1	7.4
Gate 4	Zone 3	small	81	138	8	2666	LHD1 DSL	0.21	LHD1 CAT	0.79	11.0	84	165	0.21	2.49	0.35	0.37	2.30	0.23	148.1	16.0	88.7	909	272	26.7	99.0	1.51	0	2.63	0.19	1.31	1.42	2.41	0.19	0.88	264	1,265	290	1.7	8.8	6.0
Gate 4	Zone 4	large	23	25	2	695	MHD DSL	0.82	MHD CAT	0.18	11.3	102	171	0.37	6.14	0.25	0.27	5.64	0.17	9.1	2.2	4.2	56	46	1.4	5.7	0.07	0.004	0.11	0.02	0.05	0.06	0.10	0.02	0.04	27	203	178	0.4	6.9	6.0
Gate 4	Zone 4	medium	67	75	7	2041	LHD2 DSL	0.43	LHD2 CAT	0.57	15.7	118	255	0.27	3.57	0.38	0.42	3.29	0.26	85.2	7.6	38.2	508	133	10.3	53.4	0.65	0	0.94	0.11	0.51	0.55	0.90	0.11	0.34	147	759	319	0.9	6.5	4.9
Gate 4	Zone 4	small	47	52	5	1433	LHD1 DSL	0.21	LHD1 CAT	0.79	5.4	41	88	0.09	1.21	0.13	0.14	1.12	0.09	84.1	9.2	47.8	509	158	11.9	57.3	0.64	0	1.00	0.11	0.50	0.54	0.91	0.11	0.33	147	708	157	0.7	3.6	2.6
Gate 4	Zone 5	medium	13	34	1	469	LHD2 DSL	0.43	LHD2 CAT	0.57	4.4	34	59	0.09	1.01	0.17	0.19	0.93	0.12	16.7	1.5	8.7	101	25	3.3	10.2	0.25	0	0.43	0.02	0.23	0.25	0.41	0.02	0.16	31	161	73	0.3	2.3	1.6
Gate 4	Zone 5	small	3	8	0	104	LHD1 DSL	0.21	LHD1 CAT	0.79	0.5	4	7	0.01	0.11	0.02	0.02	0.10	0.01	5.4	0.6	3.5	34	10	1.3	3.5	0.08	0	0.14	0.01	0.07	0.08	0.13	0.01	0.05	10	47	11	0.1	0.4	0.3
Gate 4	Zone 6	large	29	52	3	948	MHD DSL	0.82	MHD CAT	0.18	17.6	168	237	0.69	11.28	0.51	0.55	10.36	0.34	11.7	2.7	5.7	73	57	2.5	7.1	0.12	0.005	0.22	0.03	0.11	0.12	0.21	0.03	0.07	38	297	247	0.8	12.8	11.0
Gate 4	Zone 6	medium	17	31	2	569	LHD2 DSL	0.43	LHD2 CAT	0.57	4.9	37	72	0.09	1.11	0.16	0.17	1.02	0.11	22.0	1.9	10.6	132	34	3.4	13.6	0.24	0	0.39	0.03	0.21	0.23	0.37	0.03	0.14	39	203	89	0.3	2.3	1.7
Gate 4	Zone 6	small	34	62	3	1137	LHD1 DSL	0.21	LHD1 CAT	0.79	4.8	37	70	0.09	1.08	0.15	0.17	1.00	0.10	62.6	6.7	37.8	385	115	11.7	41.7	0.67	0	1.18	0.08	0.59	0.64	1.08	0.08	0.39	112	536	124	0.8	3.9	2.6
Gate 6	5511	large	7	8	1	216	MHD DSL	0.82	MHD CAT	0.18	3.5	31	53	0.11	1.87	0.08	0.08	1.72	0.05	2.9	0.7	1.3	17	14	0.4	1.8	0.02	0.001	0.03	0.01	0.02	0.02	0.03	0.01	0.01	8	63	55	0.1	2.1	1.8
Gate 6	5511	medium	33	35	3	994	LHD2 DSL	0.43	LHD2 CAT	0.57	7.6	57	124	0.13	1.73	0.18	0.20	1.59	0.12	41.7	3.7	18.6	248	65	5.0	26.2	0.31	0	0.44	0.06	0.24	0.26	0.42	0.06	0.16	72	370	155	0.4	3.1	2.4
Gate 6	5511	small	37	40	4	1123	LHD1 DSL	0.21	LHD1 CAT	0.79	4.2	32	69	0.07	0.94	0.10	0.11	0.87	0.07	66.2	7.3	37.5	400	124	9.2	45.2	0.49	0	0.76	0.09	0.38	0.41	0.69	0.09	0.25	115	556	123	0.6	2.8	2.0
Gate 6	*CSI	small	1	4	0	54	LHD1 DSL	0.21	LHD1 CAT	0.79	0.3	2	3	0.01	0.06	0.01	0.01	0.05	0.01	2.7	0.3	1.8	17	5	0.7	1.7	0.04	0	0.08	0.003	0.04	0.04	0.07	0.003	0.03	5	24	6	0.0	0.3	0.2
Gate 6	*Ghost Whisperer	medium	7	22	1	272	LHD2 DSL	0.43	LHD2 CAT	0.57	2.7	20	34	0.06	0.61	0.11	0.12	0.56	0.07	9.4	0.8	5.0	57	14	2.0	5.7	0.16	0	0.27	0.01	0.15	0.16	0.26	0.01	0.10	18	91	42	0.2	1.4	1.0
Gate 6	*Multiple	large	3	3	0	87	MHD DSL	0.82	MHD CAT	0.18	1.4	13	22	0.05	0.80	0.03	0.04	0.73	0.02	1.1	0.3	0.5	7	6	0.2	0.7	0.01	0.0005	0.01	0.003	0.01	0.01	0.01	0.003	0.00	3	26	22	0.1	0.9	0.8
Gate 6	*Multiple	medium	1	2	0	44	LHD2 DSL	0.43	LHD2 CAT	0.57	0.3	3	5	0.01	0.08	0.01	0.01	0.07	0.01	1.8	0.2	0.8	11	3	0.2	1.1	0.01	0	0.02	0.002	0.01	0.01	0.02	0.002	0.01	3	16	7	0.02	0.1	0.1

ENVIRON

Table B.1-9C Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant and Toxic Air Contaminant Emission Calculations
Delivery Trucks

Activity Descriptors											Criteria Pollutant Emissions (grams / 2 weeks)																															
Gate	Destination	Truck Size	# Trips	Total Mileage for a Round Trip	Idle Time (hour)	Time on Property (minutes)	Diesel EMFAC vehicle class	Diesel VMT fraction	Catalyst EMFAC vehicle class	Catalyst VMT fraction	Diesel Exhaust TOG	Diesel Exhaust CO	Diesel Exhaust NOx	Diesel Exhaust SO_2	Diesel Exhaust PM10	Diesel Tire Wear PM10	Diesel Brake Wear PM10	Diesel Exhaust PM2.5	Diesel Tire & Brake PM2.5	Catalyst Exhaust TOG	Catalyst TOG Start	Catalyst TOG + Hotsoak + Running	Catalyst Exhaust CO	Catalyst Start CO	Catalyst Exhaust NOx	Catalyst Start NOx	Catalyst Exhaust SO_2	Catalyst Start SO_2	Catalyst Exhaust PM10	Catalyst Start PM10	Catalyst Tire Wear PM10	Catalyst Brake Wear PM10	Catalyst Exhaust PM2.5	Catalyst Start PM2.5	Catalyst Tire & Brake PM2.5	Total TOG	Total CO	Total NOx	Total SO2	Total PM10	Total PM2.5
Gate 6	6525/6528	large	47	29	5	1338	MHD DSL	0.82	MHD CAT	0.18	19.1	161	325	0.48	8.34	0.28	0.31	7.66	0.19	18.5	4.5	8.1	111	94	2.1	11.7	0.10	0.008	0.12	0.04	0.06	0.07	0.12	0.04	0.04	50	366	339	0.6	9.2	8.1
Gate 6	6525/6528	medium	50	30	5	1419	LHD2 DSL	0.43	LHD2 CAT	0.57	9.9	73	177	0.15	2.24	0.16	0.17	2.06	0.10	62.9	5.7	26.6	373	99	6.0	39.8	0.33	0	0.38	0.09	0.21	0.23	0.36	0.09	0.14	105	545	223	0.5	3.5	2.8
Gate 6	6525/6528	small	50	30	5	1419	LHD1 DSL	0.21	LHD1 CAT	0.79	4.8	36	86	0.07	1.08	0.08	0.08	0.99	0.05	87.7	9.8	47.5	525	167	9.4	60.8	0.45	0	0.58	0.12	0.29	0.31	0.53	0.12	0.19	150	728	156	0.5	2.5	1.9
Gate 6	Amphitheater	large	7	7	1	212	MHD DSL	0.82	MHD CAT	0.18	3.3	29	52	0.10	1.69	0.07	0.07	1.55	0.04	2.8	0.7	1.3	17	14	0.4	1.8	0.02	0.001	0.03	0.01	0.01	0.02	0.03	0.01	0.01	8	61	54	0.1	1.9	1.6
Gate 6	Amphitheater	medium	20	19	2	594	LHD2 DSL	0.43	LHD2 CAT	0.57	4.4	33	74	0.07	1.01	0.10	0.10	0.93	0.06	25.3	2.3	11.1	151	40	2.8	15.9	0.17	0	0.24	0.03	0.13	0.14	0.22	0.03	0.09	43	223	93	0.2	1.7	1.3
Gate 6	Amphitheater	small	26	24	3	763	LHD1 DSL	0.21	LHD1 CAT	0.79	2.8	21	47	0.05	0.62	0.06	0.07	0.57	0.04	45.6	5.0	25.5	275	86	5.9	31.3	0.31	0	0.46	0.06	0.23	0.25	0.42	0.06	0.15	79	382	84	0.4	1.7	1.2
Gate 6	Barham Lot	medium	3	7	0	100	LHD2 DSL	0.43	LHD2 CAT	0.57	0.9	7	13	0.02	0.21	0.03	0.04	0.19	0.02	3.7	0.3	1.9	22	6	0.7	2.3	0.05	0	0.08	0.005	0.04	0.05	0.08	0.005	0.03	7	35	16	0.1	0.5	0.3
Gate 6	Zone 1	medium	6	18	1	221	LHD2 DSL	0.43	LHD2 CAT	0.57	2.2	17	28	0.05	0.50	0.09	0.10	0.46	0.06	7.5	0.6	4.1	46	11	1.7	4.5	0.13	0	0.23	0.01	0.12	0.14	0.22	0.01	0.08	14	74	34	0.2	1.2	0.8
Gate 6	Zone 2	large	1	4	0	53	MHD DSL	0.82	MHD CAT	0.18	1.1	11	14	0.05	0.83	0.04	0.04	0.76	0.03	0.6	0.1	0.3	4	3	0.2	0.4	0.01	0.0003	0.02	0.001	0.01	0.01	0.02	0.001	0.01	2	18	14	0.1	1.0	0.8
Gate 6	Zone 2	small	3	8	0	107	LHD1 DSL	0.21	LHD1 CAT	0.79	0.5	4	7	0.01	0.11	0.02	0.02	0.11	0.01	5.4	0.6	3.5	34	10	1.4	3.5	0.08	0	0.15	0.01	0.08	0.08	0.14	0.01	0.05	10	47	11	0.1	0.5	0.3
Gate 6	Zone 3	medium	1	3	0	50	LHD2 DSL	0.43	LHD2 CAT	0.57	0.5	3	6	0.01	0.11	0.02	0.02	0.10	0.01	1.9	0.2	0.9	11	3	0.3	1.1	0.02	0	0.04	0.002	0.02	0.02	0.04	0.002	0.02	3	18	8	0.03	0.2	0.2
Gate 6	Zone 3	small	4	10	0	151	LHD1 DSL	0.21	LHD1 CAT	0.79	0.7	5	9	0.01	0.15	0.03	0.03	0.14	0.02	8.0	0.8	5.0	49	14	1.8	5.2	0.10	0	0.19	0.01	0.10	0.10	0.17	0.01	0.06	14	69	16	0.1	0.6	0.4
Gate 6	Zone 4	medium	1	2	0	47	LHD2 DSL	0.43	LHD2 CAT	0.57	0.4	3	6	0.01	0.09	0.01	0.01	0.08	0.01	1.8	0.2	0.9	11	3	0.3	1.1	0.02	0	0.03	0.002	0.02	0.02	0.03	0.002	0.01	3	17	7	0.03	0.2	0.1
Gate 6	Zone 4	small	1	2	0	47	LHD1 DSL	0.21	LHD1 CAT	0.79	0.2	1	3	0.004	0.04	0.01	0.01	0.04	0.00	2.6	0.3	1.6	16	5	0.5	1.7	0.03	0	0.05	0.003	0.02	0.02	0.04	0.003	0.02	5	22	5	0.03	0.2	0.1
Gate 6	Zone 5	large	77	97	8	2391	MHD DSL	0.82	MHD CAT	0.18	40.1	367	591	1.37	22.84	0.96	1.04	20.99	0.64	31.0	7.3	14.4	189	154	5.3	19.2	0.25	0.01	0.41	0.07	0.21	0.22	0.40	0.07	0.14	93	710	616	1.6	25.8	22.2
Gate 6	Zone 5	medium	160	202	16	4959	LHD2 DSL	0.43	LHD2 CAT	0.57	39.3	294	622	0.70	8.91	1.04	1.13	8.21	0.69	203.5	18.2	92.7	1,216	317	26.2	127.4	1.71	0	2.54	0.27	1.39	1.50	2.42	0.27	0.92	354	1,827	775	2.4	16.8	12.5
Gate 6	Zone 5	small	192	244	19	5978	LHD1 DSL	0.21	LHD1 CAT	0.79	23.1	176	367	0.41	5.20	0.61	0.66	4.80	0.41	345.7	37.8	199.4	2,101	645	52.4	234.5	2.85	0	4.63	0.46	2.31	2.51	4.24	0.46	1.54	606	2,922	654	3.3	16.4	11.4
Gate 6	Zone 6	large	10	11	1	302	MHD DSL	0.82	MHD CAT	0.18	4.9	44	74	0.16	2.60	0.11	0.11	2.39	0.07	4.0	0.9	1.8	24	20	0.6	2.5	0.03	0.002	0.05	0.01	0.02	0.02	0.04	0.01	0.02	12	88	77	0.2	2.9	2.5
Gate 6	Zone 6	medium	20	21	2	604	LHD2 DSL	0.43	LHD2 CAT	0.57	4.6	35	76	0.08	1.05	0.11	0.12	0.97	0.07	25.4	2.3	11.3	151	40	3.0	15.9	0.19	0	0.27	0.03	0.15	0.16	0.26	0.03	0.10	44	225	95	0.3	1.9	1.4
Gate 6	Zone 6	small	9	9	1	259	LHD1 DSL	0.21	LHD1 CAT	0.79	1.0	7	16	0.02	0.22	0.02	0.02	0.20	0.02	15.3	1.7	8.6	92	29	2.1	10.4	0.11	0	0.17	0.02	0.09	0.09	0.16	0.02	0.06	27	128	28	0.1	0.6	0.5

Please note the future year is 2030. Criteria pollutant emission factors have been calculated with the EMFAC model, California Air Resources Board (CARB), EMFAC model, 2007, http://www.arb.ca.gov/msei/onroad/latest_version.htm.

1. Gate number, Destination, Truck Size, Number of Trips, Mileage of a Round Trip, and Time on Property are based on base year emission rate calculations. Number of trips, mileage of a round trip, idle time, and time on property were multiplied by the growth factor for 'all areas except hotel.'

2. Vehicle speed was assumed to be 15 mph. Idle time was assumed to be 6 minutes per trip. Mean engine time off per trip was assumed to be 20 minutes.
3. Small truck size assumed to be light-heavy-duty trucks in weight class 8501-10000 (LHD1). Medium truck size assumed to be light-heavy-duty trucks in weight class 10001-14000 (LHD2). Large truck size assumed to be medium-heavy-duty trucks in weight class 14001-33000 (MHD).
4. Diesel VMT fraction was referenced from Fractions of SCAB VMT in each Vehicle Class (From EMFAC output).
5. Catalyst VMT fraction was referenced from Fractions of SCAB VMT in each Vehicle Class (From EMFAC output).
6. Diesel Exhaust Emissions = Diesel Vehicle Miles Traveled (VMT) Fraction × (Idle Time (hr) × Emission Factor (EF) for Running Exhaust Emission Type at 0 mi/hr (g/idle-hour) + Mileage of a Round Trip × EF for Running Exhaust Emission Type at 10 mi/hr (g/mi))
7. Diesel Start Emissions = Diesel VMT Fraction × (# Trips × EF for Start Emission Type at 20 minutes (g/trip)); All emission factors are zero.
8. Diesel Hotsoak Emissions and Running Emissions = Diesel VMT Fraction × (# Trips × EF for Hot Soak Emission Type at 20 minutes (g/trip) + Time on Property (min) × EF for Run Loss Emission Type at 35 minutes (g/min)); All emission factors are zero.
9. Diesel Tire Emissions and Brake Emissions = Diesel VMT Fraction × (Mileage of a Round Trip × EF for Tire Wear Emission Type at 10 mi/hr (g/mi) + Mileage of a Round Trip × EF for Brake Wear Emission Type at 10 mi/hr (g/mi))
10. Catalyst Exhaust Emissions = Catalyst VMT fraction × (Idle Time (hr) × Emission Factor (EF) for Running Exhaust Emission Type at 0 mi/hr (g/idle-hour) + Mileage of a Round Trip × EF for Running Exhaust Emission Type at 10 mi/hr (g/mi))
11. Catalyst Start Emissions = Diesel VMT Fraction × (# Trips × EF for Start Emission Type at 20 minutes (g/trip))
12. Catalyst Hotsoak Emissions and Running Emissions = Diesel VMT Fraction × (# Trips × EF for Hot Soak Emission Type at 20 minutes (g/trip) + Time on Property (min) × EF for Run Loss Emission Type at 35 minutes (g/min))
13. Catalyst Tire Emissions and Brake Emissions = Diesel VMT Fraction × (Mileage of a Round Trip × EF for Tire Wear Emission Type at 10 mi/hr (g/mi) + Mileage of a Round Trip × EF for Brake Wear Emission Type at 10 mi/hr (g/mi))
14. Total TOG Emissions = Diesel Exhaust TOG Emissions + Diesel Start TOG Emissions + Diesel Hot Soak and Running TOG Emissions + Catalyst Exhaust TOG Emissions + Catalyst Exhaust TOG Emissions + Catalyst Start TOG Emissions + Catalyst Hot Soak and Running TOG Emissions.
15. Total Emissions = Diesel Exhaust Emissions + Diesel Start Emissions + Catalyst Exhaust Emissions + Catalyst Start Emissions, for the respective pollutant.
16. Total Emissions = Diesel Exhaust Emissions + Diesel Start Emissions + Catalyst Exhaust Emissions + Catalyst Start Emissions + Catalyst Tire Wear and Brake Wear Emissions, for the respective pollutant.

ENVIRON

Table B.1-9D Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Calculations
Paved Road Dust
Delivery Trucks

Summary of Activity [1]

Gate	Destination	Truck Size	Number of Trips	Distribution of Truck Size per Destination [4]	Average GVW [4] (pounds)	Weighted Average GVW [4] (pounds)	VMT per Two Weeks
Gate 4	4250	large	29.9	15%	23,501	3,500	52
		medium	87.0	43%	12,001	5,192	151
		small	84.1	42%	9,251	3,871	146
	5511	medium	5.7	67%	12,001	8,000	14
		small	2.9	33%	9,251	3,084	7
	*CSI	large	24.2	18%	23,501	4,162	56
		medium	64.2	47%	12,001	5,625	149
		small	48.5	35%	9,251	3,276	113
	*Desparate Housewives	large	42.8	20%	23,501	4,700	100
		medium	99.8	47%	12,001	5,600	233
		small	71.3	33%	9,251	3,084	167
	*Ghost Whisperer	large	21.4	20%	23,501	4,700	50
		medium	39.9	37%	12,001	4,480	94
		small	45.6	43%	9,251	3,947	108
	*Multiple	large	2.9	3%	23,501	691	5
		medium	52.7	54%	12,001	6,530	98
		small	41.3	43%	9,251	3,945	77
	*National Treasure 2	large	74.1	21%	23,501	5,008	139
		medium	151.1	43%	12,001	5,213	283
		small	122.6	35%	9,251	3,260	230
	Barham Lot	large	14.3	13%	23,501	3,052	5
		medium	54.2	49%	12,001	5,922	19
		small	41.3	38%	9,251	3,484	14
	Property	large	144.0	14%	23,501	3,357	75
		medium	614.4	61%	12,001	7,316	321
		small	249.5	25%	9,251	2,290	130
	Transportation	large	165.4	23%	23,501	5,485	86
		medium	380.6	54%	12,001	6,447	199
		small	162.5	23%	9,251	2,122	85
	Zone 1	large	21.4	14%	23,501	3,176	54
		medium	85.5	54%	12,001	6,487	216
		small	51.3	32%	9,251	3,000	129
	Zone 2	large	68.4	22%	23,501	5,058	146
		medium	134.0	42%	12,001	5,059	285
		small	115.5	36%	9,251	3,360	246
	Zone 3	large	41.3	21%	23,501	4,833	70
		medium	78.4	39%	12,001	4,681	133
		small	81.3	40%	9,251	3,740	138
	Zone 4	large	22.8	17%	23,501	3,917	25
		medium	67.0	49%	12,001	5,875	75
		small	47.0	34%	9,251	3,180	52
	Zone 5	medium	12.8	82%	12,001	9,819	34
		small	2.9	18%	9,251	1,682	8
	Zone 6	large	28.5	36%	23,501	8,393	52
		medium	17.1	21%	12,001	2,572	31
		small	34.2	43%	9,251	3,965	62
Gate 6	5511	large	7.1	9%	23,501	2,176	8
		medium	32.8	43%	12,001	5,111	35
		small	37.1	48%	9,251	4,454	40
	*CSI	small	1.4	100%	9,251	9,251	4
	*Ghost Whisperer	medium	7.1	100%	12,001	12,001	22
	*Multiple	large	2.9	67%	23,501	15,667	3
		medium	1.4	33%	12,001	4,000	2
	6525/6528	large	47.0	32%	23,501	7,529	29
		medium	49.9	34%	12,001	4,078	30
		small	49.9	34%	9,251	3,143	30
	Amphitheater	large	7.1	14%	23,501	3,176	7
		medium	20.0	38%	12,001	4,541	19
		small	25.7	49%	9,251	4,500	24
	Barham Lot	medium	2.9	100%	12,001	12,001	7
	Zone 1	medium	5.7	100%	12,001	12,001	18
	Zone 2	large	1.4	33%	23,501	7,834	4
		small	2.9	67%	9,251	6,167	8
	Zone 3	medium	1.4	25%	12,001	3,000	3
		small	4.3	75%	9,251	6,938	10
	Zone 4	medium	1.4	50%	12,001	6,000	2
		small	1.4	50%	9,251	4,625	2
	Zone 5	large	77.0	18%	23,501	4,216	97
		medium	159.7	37%	12,001	4,465	202
		small	192.5	45%	9,251	4,149	244
	Zone 6	large	10.0	26%	23,501	6,093	11
		medium	20.0	52%	12,001	6,222	21
		small	8.6	22%	9,251	2,056	9

Weight Summary [2]

Truck Size	Weight Range (pounds)		Average GWV (pounds)
Small	8,501	10,000	9,251
Medium	10,001	14,000	12,001
Large	14,001	33,000	23,501

Emission Factor Calculation [3]

Gate	Destination	Average GVW (tons)	Annual VMT	PM10 Emission Factor (lbs/VMT)	PM10 Emissions (lbs/yr)	PM2.5 Emission Factor (lbs/VMT)	PM2.5 Emissions (lbs/yr)
Gate 4	4250	2.09	9,062	3.69E-03	33.45	2.72E-04	2.47
	5511	2.77	556	5.86E-03	3.26	5.97E-04	0.33
	*CSI	2.18	8,273	3.94E-03	32.61	3.10E-04	2.56
	*Desparate Housewives	2.23	12,999	4.10E-03	53.36	3.34E-04	4.34
	*Ghost Whisperer	2.19	6,558	3.97E-03	26.06	3.15E-04	2.06
	*Multiple	1.86	4,675	3.02E-03	14.11	1.71E-04	0.80
	*National Treasure 2	2.25	16,944	4.16E-03	70.40	3.42E-04	5.79
	Barham Lot	2.08	990	3.64E-03	3.60	2.64E-04	0.26
	Property	2.16	13,681	3.89E-03	53.23	3.02E-04	4.13
	Transportation	2.34	9,617	4.45E-03	42.81	3.86E-04	3.71
	Zone 1	2.11	10,381	3.74E-03	38.84	2.80E-04	2.90
	Zone 2	2.25	17,579	4.15E-03	73.00	3.41E-04	6.00
	Zone 3	2.21	8,893	4.04E-03	35.92	3.24E-04	2.88
	Zone 4	2.16	3,963	3.90E-03	15.44	3.03E-04	1.20
	Zone 5	2.88	1,079	6.22E-03	6.71	5.51E-04	0.70
	Zone 6	2.49	3,754	4.92E-03	18.46	4.56E-04	1.71
Gate 6	5511	1.96	2,152	3.29E-03	7.08	2.12E-04	0.46
	*CSI	4.63	112	1.32E-02	1.47	1.69E-03	0.19
	*Ghost Whisperer	6.00	561	1.97E-02	11.03	2.67E-03	1.50
	*Multiple	4.92	130	1.45E-02	1.88	1.89E-03	0.25
	6525/6528	2.46	2,325	4.82E-03	11.21	4.42E-04	1.03
	Amphitheater	2.04	1,287	3.52E-03	4.53	2.47E-04	0.32
	Barham Lot	6.00	170	1.97E-02	3.34	2.67E-03	0.45
	Zone 1	6.00	474	1.97E-02	9.32	2.67E-03	1.26
	Zone 2	3.50	316	8.51E-03	2.69	9.95E-04	0.31
	Zone 3	2.48	348	4.91E-03	1.71	4.54E-04	0.16
	Zone 4	2.66	124	5.47E-03	0.68	5.39E-04	0.07
	Zone 5	2.14	14,117	3.82E-03	53.99	2.92E-04	4.12
	Zone 6	2.40	1,070	4.62E-03	4.94	4.11E-04	0.44

Summary by Route [5]

Route Number	Route	PM10 Emissions (lbs/yr)	PM2.5 Emissions (lbs/yr)
1	Gate 4 to Transportation (420m)	60.68	5.13
2	Gate 4 to Property (420m)	71.10	5.55
3	Gate 4 to 4250 (1395m)	51.32	3.88
4	Gate 6 to 6525/6528 (490m)	12.65	1.22
5	Gate 6 to Amphitheater (755m)	5.97	0.51
6	Gate 6 to Zone 6 (860m)	6.38	0.63
7	Gate 6 to Zone 5 (1018m)	55.43	4.32
8	Gate 6 to 5511 (865m)	8.52	0.65
9	Gate 4 to Zone 6 (1455m)	36.33	3.13
10	Gate 4 to Zone 1 (2030m)	56.71	4.32
11	Gate 4 to Zone 2 (1711m)	90.86	7.41
12	Gate 4 to Zone 3 (1369m)	53.78	4.30
13	Gate 4 to Zone 4 (896m)	33.31	2.61
14	Gate 4 to Barham Lot (279m)	21.47	1.88
15	Gate 6 to Zone 1 (2570m)	10.75	1.46
16	Gate 6 to Zone 2 (2285m)	4.13	0.51
17	Gate 6 to Zone 3 (1887m)	3.14	0.35
18	Gate 6 to Zone 4 (1345m)	2.12	0.26
19	Gate 6 to Barham Lot (1845m)	4.78	0.65
20	Gate 4 to Zone 5 (2130m)	24.58	2.12
21	Gate 4 to 5511 (2012m)	21.13	1.75

1. Gate number, Destination, Truck Size, Number of Trips, Total Mileage for Round Trips, and Time on Property were from a survey conducted of deliveries between 03/01/07 to 03/14/07 by NBC Universal. Values provided here are aggregated per unique destination and truck size.

2. Small truck size assumed to be light-heavy-duty trucks in weight class 8501-10000 (LHD1). Medium truck size assumed to be light-heavy-duty trucks in weight class 10001-14000 (LHD2). Large truck size assumed to be medium-heavy-duty trucks in weight class 14001-33000 (MHD).

3. Emission factor calculation methodology was referenced from USEPA, AP-42, Chapter 13.2.1, November 2006.

$$E_{ext} = \left[k\left(\frac{sL}{2}\right)^{0.91}\left(\frac{W}{3}\right)^{1.2} - C\right]\left\{1-\frac{P}{4N}\right\}$$

where E = Emission factor (lbs/VMT)
k = Particulate size multiplier (lbs/VMT). PM10 is 0.016 lbs/VMT and PM2.5 is 0.0024 lbs/VMT as referenced from table 13.2.1-1.
sL = Road surface silt loading (g/m2). sL is 0.6 g/m2 as referenced from table 13.2.1-3.
W = Average weight (tons). Average weight has been calculated for each destination.
C = Emission factor for 1980's vehicle fleet exhaust, brake wear, and tire wear (lbs/VMT). PM10 is 0.00047 lbs/VMT and PM2.5 is 0.00036 lbs/VMT.
P = Number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. P = 40 days as referenced from figure 13.2.1-2.
N = number of days in the averaging period. N = 365 days per year.

Annual VMT was multiplied by the emission factor to obtain pounds per year. Annual VMT was calculated as the VMT for the two week observation period divided by 2 weeks and multiplied by 52 weeks per year.

4. The weighted average GVW was estimated by calculating the percent of trips for each vehicle size for a destination, and multiplying the percentage by the average GVW to obtain a weighted average GVW.

5. Emissions have been summarized by route.

ENVIRON

Table B.1-10A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Criteria Pollutant Emission Rate Calculations
Miscellaneous Materials

Description	Growth Factor [1]	Future Year Criteria Pollutant Emissions [2] (lbs/yr)		
		VOC	PM_{10}	$PM_{2.5}$
Accelerator	1.43	1.0	-	-
Adhesive		353.3	-	-
Air Freshener		1.3	-	-
Cement		27.2	6.5	6.3
Cleaner		2,508.4	-	-
Coating		64.9	74.8	72.1
Fiberglass		34.4	-	-
Fog Fluid [3]		6,000.0	-	-
Lubricant		283.7	0.1	0.1
Miscellaneous		2.0	-	-
Mold Release		50.5	-	-
Pigment		0.8	3.2	3.1
Resin		18.1	47.3	-
Sealant		109.1	-	-
Silicone		8.5	3.7	3.6
Solvent		450.6	-	-
Thinner		19.9	-	-
TOTAL		**9,933.6**	**135.6**	**85.1**

1. Assigned a growth factor based on 'All land use areas'.

2. Future year criteria pollutant emissions have been calculated by multiplying the base year criteria pollutant emissions by the growth factor.

3. Fog fluid emissions will be reduced in the future year because an attraction will be removed.

ENVIRON

Table B.1-10B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Toxic Air Contaminant Emission Rate Calculations
Miscellaneous Materials

Category	Growth Factor [1]	Future Year TAC Emissions [2] (lb/yr)			
	1.43	Benzene	Cadmium	Chromium, hexavalent (and compounds)	Lead compounds (inorganic)
Solvent		0.0017	-	-	-
Coating		-	1.38	-	-
Pigment		-	-	0.03	0.03
TOTAL		**0.0017**	**1.38**	**0.03**	**0.03**

1. Assigned a growth factor based on 'All land use areas' from the Evolution Plan.

2. Future year TAC emissions have been calculated by multiplying the base year TAC emissions by the growth factor.

ENVIRON

Table B.1-11 Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Future Year Toxic Air Contaminant Emission Rate Calculations
Water Purification

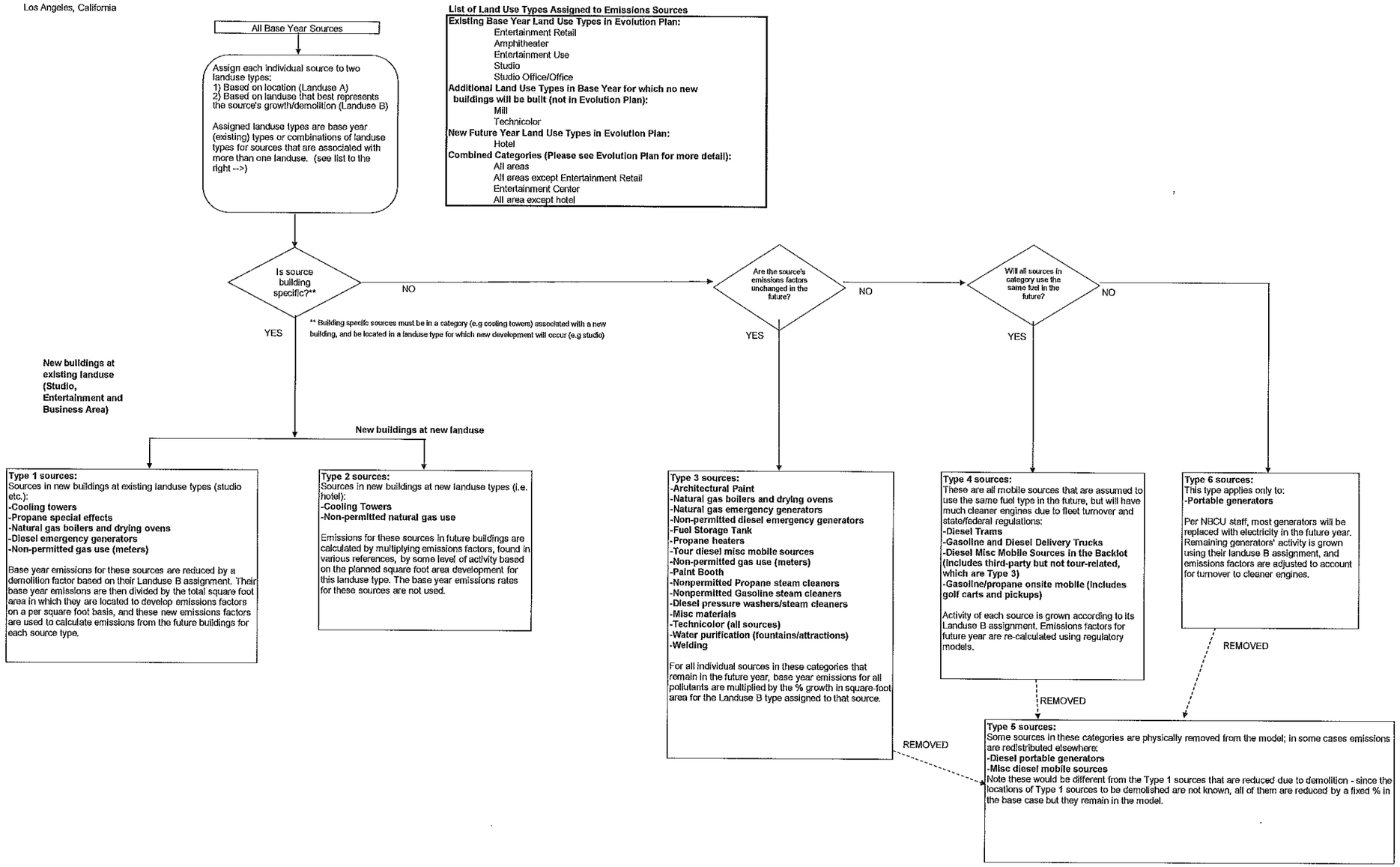
Chloroform Emission Factor [1] ($\mu g/m^2$-min)	
Still	**Agitated**
12	390

Bodies of Water [2]	Area [3] (m^2)	Function of Bodies of Water [4]	Duration of Agitation (days/year)	Annual Duration [6] (%)		Chloroform Emissions (lbs/yr)		
				Still	Agitated	Still [7]	Agitated [8]	Total [9]
Jurassic Park Attraction	5,309	Water Ride - Theme Park hours [5]	200	45.26%	54.74%	33	1313	1347
Fountain at Theme Park	229	Theme Park hours [5]	200	45.26%	54.74%	1	57	58

1. Chloroform emission factors were referenced from Science Applications International Corporation (SAIC) submittal to the California Air Resources Board (CARB), Sources and Concentrations of Chloroform Emissions in the South Coast Air Basin April 1988, page 1-8.
2. Bodies of water were identified by NBC Universal.
3. Area was measured with GIS tools in the ISC model file.
4. The duration of agitation was based on the function of the body of water.
5. Theme Park hours are estimated to be 9.2 hours per day and 363 days per year based theme park hours during 2007 as referenced from Universal Studios Hollywood website, http://www.universalstudioshollywood.com/calendar.html. The duration of agitation in days per year was calculated by multiplying 9.2 hours per day by 363 days per year. The product was converted to days per year by dividing by 24 hours per day. Additionally, the activity at this source (duration of agitation) is expected to grow as a function of "Entertainment Use" land use category growth factor as referenced from the Evolution Plan.
6. Annual Duration of agitation was calculated as the ratio of the number of days still or agitated to the number of days in a year.
7. Chloroform emissions were calculated as the area multiplied by the emission factor for still bodies of water, multiplied by 525,600 minutes per year, multiplied by 2.20E-09 pounds per microgram, and multiplied by the percent of duration as still.
9. Chloroform emissions were calculated as the area multiplied by the emission factor for agitated bodies of water, multiplied by 525,600 minutes per year, multiplied by 2.20E-09 pounds per microgram, and multiplied by the percent of duration as agitated.
11. Total chloroform emissions were calculated as the sum of the emissions during agitation and stillness.

ENVIRON

Table B.1-12. Flow Chart Outlining Growth of Base Year Emission Sources to Estimate Future Project Emissions
NBC Universal
Los Angeles, California



ENVIRON

Table B.2-1. URBEMIS Model Input Parameters for Alternative 10 Offsite Operational Emissions
NBCUniversal
Los Angeles, CA

Project Land Uses	URBEMIS Land Use Category	Full Alternative 10 Area (ft^2)	URBEMIS metric (1000 ft^2, room)	Total net trips	Trip Rate (trip/day/size)
Studio Office (including child care), Office	Commercial - General Office Building	1,142,726	1142.73	7892	6.91
Studio	Blank - Studio	307,949	307.95	2,219	7.21
Entertainment	Blank - Entertainment	337,895	337.90	2394	7.09
Entertainment Retail	Large Retail - Regional Shopping Center	39,216	39.22	277	7.06
Hotel	Recreational - Hotel	1000 rooms	1000	6355	6.36
	Total	2,727,786	--	19,137	--

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ENVIRON

Table B.2-2A. URBEMIS Model Output file for Compiled Net Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

Page: 1
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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\NetNew2030 Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	11.03	10.78	109.49	0.33	3.03	1.93	33,151.28

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	11.03	10.78	109.49	0.33	3.03	1.93	33,151.28

P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\[NBCU Operational Annual (ton per year) - Alt10.xls]OutputSummary

ENVIRON

B.2-2B: URBEMIS Model Output file (summer) for Compiled Net Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\NetNew2030 Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	59.62	55.33	613.71	1.90	16.59	10.54	187,714.10

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	59.62	55.33	613.71	1.90	16.59	10.54	187,714.10

ENVIRON

Table B.2-2C: URBEMIS Model Output file (winter) for Compiled Net Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

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Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\NetNew2030 Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	61.97	66.53	572.49	1.58	16.59	10.54	169,524.33

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	61.97	66.53	572.49	1.58	16.59	10.54	169,524.33

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ENVIRON

Table B.3-1A Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Hotel (Frontlot) and Associated Development (Backlot)
Natural Gas Combustion

Land Use	Area (sf) or number of units [1]	Usage Factor to determine daily usage [2] (cf/sf-month)	Usage [3] (10^6 scf)	Criteria Pollutant Emission Factors [4] ($lb/10^6$ scf)							Criteria Pollutant Emissions (lbs/yr)						
				VOC	NO_x	SO_x [5]	CO	PM_{10}	$PM_{2.5}$ [6]	CO_2	VOC	NO_x	SO_x	CO	PM_{10}	$PM_{2.5}$	CO_2
Hotel	450,000	4.8	26.3	5.30	120.00	0.60	20.00	0.20	0.20	122,801	139	3,154	16	526	5	5	3,227,208

\\206.128.211.14\Projects\N\NBCUniversal\AQ EIR\Emissions estimates\Midproject\Alt 10\[Alt 10 Mid Project Hotel.xls]NG_Criteria

1. Area has been referenced from the Vision Plan for Alt10.

2. Usage Factor has been referenced from SCAQMD, CEQA Air Quality Handbook, April 1993, Appendix to Chapter 9, Table A9-12-A.

3. Usage equals gross square foot of each type of each type of land use multiplied by the natural gas usage rate to determine daily usage divided by 30 days per month and divided by 1,000,000 mmcf per cf multiplied by 365 days per year. Usage = [(A x UF) / 30 dy/mo / 1,000,000 mmcf/cf] x 365 dys/yr.
4. Criteria pollutant emission factors were referenced from SCAQMD, CEQA Air Quality Handbook, April 1993, Appendix to Chapter 9, Table A9-12-B. SO_x has been referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 1.4, Table 1.4-2.
5. SO_x emission factor was referenced from USEPA, AP-42, Fifth edition, October 1996, Chapter 1.4, Table 1.4-2.
6. The emissions of $PM_{2.5}$ were obtained by multiplying the PM_{10} emissions by the respective fraction of total PM. The $PM_{2.5}$ fraction of PM_{10} was referenced from SCAQMD, Final Methodology to Calculate Particulate Matter 2.5 and PM 2.5 Significance Thresholds, October 2006, Appendix A, Table A, External Combustion, Gaseous Fuel Except Petroleum and Industrial Process Heaters.
7. Criteria pollutant emissions have been calculated by multiplying the usage by the emission factor.

Table B.3-1B Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Mid-Alternative 10
Hotel and Associated Development
Natural Gas Combustion

Fuel Usage	
Land Use	**Hotel**
Usage [1] (10^6 scf/yr)	26.28

Emission Calculations			
Pollutant Name	**CAS No.**	**Emission Factor**	**Annual Emissions**
		lbs/MMscf	**lbs/year**
Benzene	71432	0.008	0.21
Formaldehyde	50000	0.017	0.45
Total PAHs (excluding Naphthalene)	1151	0.0001	0.00
Naphthalene	91203	0.0003	0.01
Acetaldehyde	75070	0.0043	0.11
Acrolein	107028	0.0027	0.07
Ammonia*	7664417	18	473
Ethyl benzene	100414	0.0095	0.25
Hexane	110543	0.0063	0.17
Toluene	108883	0.0366	0.96
Xylene	1330207	0.0272	0.71

:ts\N\NBCUniversal\AQ EIR\Emissions estimates\Midproject\Alt 10\[Alt 10 Mid Project Hotel.xls]NG_Criteria

1. Usage has been calculated in future year criteria pollutant emission rate calculations Table for hotel and associated development, natural gas combustion.

2. Emission factors were referenced from SCAQMD, 2005-2006 Reporting procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, Supplemental Instructions, June 2006, Appendix B, Table B-1, External Combustion Equipment, <10 mmBtu/hr for most conservative estimate.

3. Pollutant emissions were calculated as the product of the annual fuel usage (mmscf/yr) and the emission factor (lbs/mmscf).

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Table B.3-2 Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Mid-Alternative 10
Hotel (Frontlot) and Associated Development (Backlot)
Cooling Towers

Equipment Description	Total Area [1] (sf)	Cooling Load [2] (ton)	Equipment Tonnage [3]	Water Circulation Rate (gal/ton min) [4]	Water Circulation Rate (gal/min)	Daily Operational Hours [5]	Yearly Operational Hours (hr/yr)	TDS Concentration (ppm) [6]	Perctage of Circulating Water Lost to Drift [7]	PM Emissions (lb/yr) [8]	PM_{10} emissions (lb/yr) [9]	$PM_{2.5}$ emissions (lb/yr) [9]
Hotel	450,000	900	900	2.5	2250	24	8760	1404	0.005%	692	92.8	0.9

1. Area based on the \\206.128.211.14\Projects\N\NBCUniversal\AQ EIR\Emissions estimates\Midproject\Alt 10\[Alt 10 Mid Project Hotel.xls]NG_Criteria
2. A typical office building has a cooling load of approximately 500 sf/ton per ASHRAE Air-Conditioning System Design Manual, 1993 as referenced from Renne Azerbegi of Ambient Energy, Inc. and Jim Bradburn, The RHM Group, Inc., 2005 Solar World Congress: Whole Building Approach to Water Conservation. The total area was divided by 500 sf/ton to obatin the cooling load.
3. It is assumed tha the cooling load is equivalent to the operating capacity of a single cooling tower.
4. Water Circulation rate is estimated based on engineeering judgement.
5. It is conservatively estimated that cooling towers will be operated 24 hrs a day every day
6. Based on measured TDS content in tap water provided by LADWP (http://www.ladwp.com/ladwp/cms/ladwp009327.pdf) and assumed four cycles of TDS concentration.
7. Percentage of circulating water lost to drift is based on information provided by Arc Engineering for expected cooling tower performance.
8. Total PM emissions are based SCAQMD methods to calculate PM emissions from a cooling tower. Guidelines for Calculating Emissions from Cooling Towers, June 2006.
9. Emissions of PM_{10} and $PM_{2.5}$ were obtained by multiplying the total PM emission factor by the fraction of PM_{10} and $PM_{2.5}$. The fractions were based on particle size distribution data as published by Pacudah.

Table B.3-3A. Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Mid Project Emissions Criteria Pollutant Emissions
Miscellaneous Materials

Description	Base Year Criteria Pollutant Emissions [1] (lbs/yr)			Growth Factor [1]	Future Year Criteria Pollutant Emissions [2] (lbs/yr)		
	VOC	PM_{10}	$PM_{2.5}$		VOC	PM_{10}	$PM_{2.5}$
Accelerator	0.7	-	-	1.15	0.8	-	-
Adhesive	247.8	-	-		286.0	-	-
Air Freshener	0.9	-	-		1.1	-	-
Cement	19.1	4.58	4.41		22.0	5.3	5.1
Cleaner	1,759.5	-	-		2,030.2	-	-
Coating	45.6	52.49	50.57		52.6	60.6	58.4
Fiberglass	24.1	-	-		27.8	-	-
Fog Fluid [3]	27,952.6	-	-		6,000.0	-	-
Lubricant	199.0	0.06	0.06		229.6	0.1	0.1
Miscellaneous	1.4	-	-		1.6	-	-
Mold Release	35.4	-	-		40.9	-	-
Pigment	0.6	2.24	2.16		0.7	2.6	2.5
Resin	12.7	33.15	-		14.6	38.2	-
Sealant	76.5	-	-		88.3	-	-
Silicone	5.9	2.61	2.51		6.9	3.0	2.9
Solvent	316.1	-	-		364.7	-	-
Thinner	14.0	-	-		16.1	-	-
TOTAL					**9,183.8**	**109.8**	**68.9**

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Midproject\Alt 10\[Alt 10 7_Miscellaneous Materials_Midproject.xls]7_TAC

1. Assigned a growth factor based on 'All land use areas' from the MIDPROJECT Vision Plan.
2. Future year criteria pollutant emissions have been calculated by multiplying the base year criteria pollutant emissions by the growth factor.
3. Fog fluid emissions will be reduced in the future year because the War of the Worlds attraction will be removed from NBC Universal. Three tons of VOC emissions will remain from various fog fluid usage throughout the facility. This information was provided by NBC Universal.

ENVIRON

Table B.3-3B. Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Mid Project Year Toxic Air Contaminant Emission Rate Calculations
Miscellaneous Materials

Category	Base Year TAC Emissions [1] (lb/yr)				Growth Factor [1]	Future Year TAC Emissions [2] (lb/yr)			
	Benzene	Cadmium	Chromium, hexavalent (and compounds)	Lead compounds (inorganic)	1.15	Benzene	Cadmium	Chromium, hexavalent (and compounds)	Lead compounds (inorganic)
Solvent	0.00	-	-	-		0.0014	-	-	-
Coating	-	0.97	-	-		-	1.12	-	-
Pigment	-	-	0.02	0.02		-	-	0.02	0.02
TOTAL	**0.00**	**0.97**	**0.02**	**0.02**		**0.0014**	**1.12**	**0.02**	**0.02**

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1. Assigned a growth factor based on 'All land use areas' from the Vision Plan.

2. Future year TAC emissions have been calculated by multiplying the base year TAC emissions by the growth factor.

ENVIRON

Table B.3-4. Alternative 10 Emission Inventory Report
NBC Universal
Los Angeles, California

Mid-Alternative 10 Toxic Air Contaminant Emission Rate Calculations
Water Purification

Chloroform Emission Factor [1] ($\mu g/m^2$-min)	
Still	**Agitated**
12	390

Bodies of Water [2]	Area [3] (m^2)	Function of Bodies of Water [4]	Duration of Agitation (days/year)	Annual Duration [5] (%)		Chloroform Emissions (lbs/yr)		
				Still	Agitated	Still [7]	Agitated [8]	Total [9]
Jurassic Park Attraction	5,309	Water Ride - Theme Park hours [6]	153	58.09%	41.91%	43	1005	1048
Fountain at Theme Park	229	Theme Park hours [6]	153	58.09%	41.91%	2	43	45

\\206.128.211.14\Projects\N\NBCUniversal\AQ EIR\Emissions estimates\Midproject\Alt 10\[Alt 10 mid project 23_Water Purification_Future.xls]23_TAC

1. Chloroform emission factors were referenced from Science Applications International Corporation (SAIC) submittal to the California Air Resources Board (CARB), Sources and Concentrations of Chloroform Emissions in the South Coast Air Basin April 1988, page 1-8.
2. Bodies of water were identified by NBC Universal.
3. Area was measured with GIS tools in the ISC model file.
4. The duration of agitation was based on the function of the body of water.
5. Annual Duration of agitation was calculated as the ratio of the number of days still or agitated to the number of days in a year.
6. Theme Park hours are estimated to be 9.2 hours per day and 363 days per year based theme park hours during 2007 as referenced from Universal Studios Hollywood website, http://www.universalstudioshollywood.com/calendar.html. The duration of agitation in days per year was calculated by multiplying 9.2 hours per day by 363 days per year. The product was converted to days per year by dividing by 24 hours per day. Additionally, the activity at this source (duration of agitation) is expected to grow as a function of "Entertainment Use" land use category growth factor as referenced from the Vision Plan.
7. Chloroform emissions were calculated as the area multiplied by the emission factor for still bodies of water, multiplied by 525,600 minutes per year, multiplied by 2.20E-09 pounds per microgram, and multiplied by the percent of duration as still.
8. Chloroform emissions were calculated as the area multiplied by the emission factor for agitated bodies of water, multiplied by 525,600 minutes per year, multiplied by 2.20E-09 pounds per microgram, and multiplied by the percent of duration as agitated.
9. Total chloroform emissions were calculated as the sum of the emissions during agitation and stillness.

Table B.4-1. URBEMIS Model Input Parameters for Alternative 10 Mid-Project Offsite Operational Emissions
NBCUniversal
Los Angeles, CA

Project Phase		Size [1]	Unit	Trip Generation Rate
Demolition				
	Studio, Entertainment and Business Area - Office	-54,594	sf	--
	Entertainment Center	-108,100	sf	--
New Development				
	Studio, Entertainment and Business Area - Office	550,000	sf	--
	Entertainment Retail	70,000	sf	--
	Entertainment Center	185,000	sf	--
	Hotel	500	Rooms	--
Midproject Alt 10 = New Development - Demolition				
	Studio, Entertainment and Business Area - Office	495,406	sf	6.9
	Entertainment Center	76,900	sf	7.1
	Hotel	500	Rooms	6.4
	Entertainment Retail	70,000	sf	7.1

Land Use Assumptions [4]

	Land use	URBEMIS Assumptions
Alt 10	Studio, Entertainment and Business Area - Studio/Production Support	Blank
	Studio, Entertainment and Business Area - Office	General Office Building
	Entertainment Center	Blank
	Hotel	Hotel
	Entertainment Retail	Large Retail - Regional Shopping Center

1. Negative entries are not possible in URBEMIS therefore zeroes were entered.

2. Daily trips are based on information from the transportation study. Negative entries are not possible in URBEMIS therefore zeroes were entered.

3. Trip generation rate is equal to the full Alternative 10 build-out trip generation rate and land use area is specific to the scenario.
4. It is assumed that there are no transit credits or pass-by trips

P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\[Alt 10 URBEMIS Input Summary.xlsx]Inputs Alt 10 - mid

ENVIRON

B.4-2A: URBEMIS Model Output file (annual) for Mid Project Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

7/6/2012 03:39:05 PM

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\Midproject Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.88	11.78	100.09	0.13	1.24	0.79	13,271.38

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.88	11.78	100.09	0.13	1.24	0.79	13,271.38

ENVIRON

B.4-2B: URBEMIS Model Output file (summer) for Mid Project Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\Midproject Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.01	60.46	557.83	0.77	6.76	4.32	75,110.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.01	60.46	557.83	0.77	6.76	4.32	75,110.06

ENVIRON

B.4-2C: URBEMIS Model Output file (winter) for Mid Project Alternative 10 Offsite Operation Emissions
NBCUniversal
Los Angeles, CA

7/6/2012 03:41:14 PM

Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name: P:\N\NBCUniversal\AQ EIR\Emissions estimates\offsite\ENVIRON\Midproject Alt 10.urb924

Project Name: Universal Studios 2030 conditions

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	50.06	72.91	529.59	0.63	6.76	4.32	67,939.46

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	50.06	72.91	529.59	0.63	6.76	4.32	67,939.46

ENVIRON

Appendix C

Health Risk Assessment Methodology

Appendix C

1.0 Health Risk Assessment

This Appendix describes the human health risk assessment (HRA) approach used to evaluate TAC emissions from Alternative 10 in comparison to SCAQMD's health risk significance thresholds. The HRA is conducted in accordance with CARB's Air Toxics Hot Spots Program Risk Assessment Guidelines[1] and is consistent with risk assessment guidance documents by USEPA[2] and Cal/EPA's Department of Toxic Substances Control (DTSC).[3] Simplifying assumptions are also obtained from the South Coast Air Quality Management District risk assessment guidelines.[4]

1.1 Methodology

Health risks were calculated using the methodology referenced above and same methodology as Project described below. Air dispersion modeling was conducted with a stand-alone air dispersion software program (Trinity BREEZE), and the health risk analysis was conducted using manual calculations based on data from the Hotspots Analysis and Reporting Program (HARP). The detailed methodology for the health risk estimates is further described below.

1.1.1 Hazard Assessment

Identification of chemicals of potential concern and specification of their toxicities are described below.

1.1.1.1 Chemicals of Potential Concern

The Chemicals of Potential Concern (COPC) were identified based on the emission inventory for the construction phase and operational emissions due to Alternative 10. Details of the emission inventory are discussed in other Appendices for Construction and Operations. COPCs that are associated with construction and operation of the Project are included in these appendices.

1.1.1.2 Toxicities

Compounds were evaluated for their potential health effects in two categories, carcinogenic and non-carcinogenic. Almost all compounds produce non-carcinogenic effects at sufficiently high doses, but only some compounds are associated with carcinogenic effects. Most regulatory agencies consider carcinogens to pose a risk of cancer at all exposure levels (i.e., a "no-threshold" assumption); that is, any increase in dose is assumed to be associated with an increase in the probability of developing

[1] Cal/EPA. 2003. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. August.

[2] USEPA. 1989. Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A). USEPA 540/1-89-002, Office of Emergency and Remedial Response, Washington, DC. December.

[3] Cal/EPA. 1994. Preliminary Endangerment Assessment Guidance Manual. Department of Toxic Substances Control. January.

[4] SCAQMD. 2005. Risk Assessment Procedures for Rules 1401 and 212. Version 7.0. July.

cancer. In contrast, non-carcinogens generally are thought to produce adverse health effects only when some minimum exposure level is reached (i.e., a threshold).

Toxicity studies with laboratory animals or epidemiological studies of human populations are relied upon to develop toxicity criteria. The toxicities of many of the volatile COPCs emitted from Alternative 10 are relatively well-known and their toxicity criteria have been well established. Toxicological values used in this assessment, which are taken from Cal/EPA OEHHA and CARB's Consolidated Table of Approved Risk Assessment Health Values[5], are listed in Table D-1.

The toxicity values typically are assigned for each compound by CARB. However, CARB currently allows the use of Diesel Exhaust Particulate Matter (DPM) as a surrogate to calculate the cancer and chronic non-cancer impacts associated with diesel exhaust. This health risk analysis uses these toxicity values for DPM.

CARB also periodically revises toxicity values for compounds. OEHHA is in the process of modifying the acute REL for Acrolein.[6] The SCAQMD currently excludes the acute health effect caused by Acrolein when evaluating health risk analyses as part of their AB2588 program.[7] Although there is uncertainty in regards to the health risk of Acrolein, this health risk analysis evaluates the impacts "with" Acrolein and the newer proposed acute REL value proposed by OEHHA.

1.1.2 Exposure Assessment

The health risk posed by the identified COPCs requires an assessment of the fate and transport of potential emissions to receptors and an estimation of exposure at a receptor(s). The fate and transport of COPCs are estimated using air dispersion modeling tools. Exposure is characterized by pathways. Primary and secondary exposure pathways include inhalation, non-inhalation primary, and non-inhalation secondary exposure pathways. The primary non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), and soil ingestion. The secondary non-inhalation pathways include ingestion of mother's milk, fish, dairy products, all types of meat and eggs, and crop ingestion (root uptake). All of these exposure pathways are conservatively included and evaluated per the SCAQMD multipathway factors.

The water ingestion pathway is not likely to be a significant factor considered since the drinking water supply in the vicinity of the project site is not derived from local surface water. Exposure pathways for ingestion of fish, dairy, animal, and agricultural produce are also not likely to be significant factors because recreational fishing areas, animal and dairy farms, and commercial agricultural areas are beyond the Alternative 10's likely zone of impact (ZOI). Inhalation, dermal absorption, and soil ingestion pathways are the most likely pathways for residential and sensitive receptors.

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[5] Cal/EPA. 2004. *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*. Office of Environmental Health Hazard Assessment and Air Resources Board. April 4, 2005.
[6] http://www.oehha.org/air/hot_spots/crnr110207.html
[7] Email communication with Tom Chico of SCAQMD on April 18, 2008.

Additional assumptions are also made to estimate cancer risk exposure. Per SCAQMD HRA guidance, continuous exposure of 24-hours per day for a 70-year lifetime is assumed for residents. This is a highly conservative assumption, since most people do not remain at home all day nor are home every day, and residents typically change residences every 7 to 9 years. For off-site workers, SCAQMD guidance suggests that the exposure be based on a 40 year working lifetime and 250 days per year. This is a highly conservative assumption, since most people do not remain at the same job for 40 years nor are they at work every day. The SCAQMD also suggests specific daily breathing rates and exposure value factors for estimating cancer risks. These exposure assumptions can be adjusted for specific situations.

Based on this approach, the potential excess cancer risk associated with exposure to a carcinogen is estimated to be the product of the annual average concentration and the cancer potency (CP) for that carcinogen, the daily breathing rate (DBR), the exposure value factor (EVF), and the multipathway factor (for chemicals having impacts due to multiple pathways). The equation used to calculate the potential excess cancer risk is:

$$Risk_i = C_i \text{ X } CP_i \text{ X DBR X EVF X MP}$$

Where:

$Risk_i$	=	Lifetime Excess Cancer Risk from exposure to $chemical_i$
C_i	=	Representative Air Concentration for $chemical_i$ ($\mu g/m^3$)
CP_i	=	Cancer $Potency_i$ $(mg/kg\text{-}day)^{-1}$
DBR	=	Daily Breathing Rate (L/kg body weight-day)
EVF	=	Exposure Value Factor (unitless)
MP	=	MultiPathway Factor (unitless)

An estimate of an individual's incremental excess cancer risk from exposure to Project emissions is calculated by summing the chemical-specific excess cancer risks. To obtain an estimate of total risk from all carcinogens emitted from the Project, cancer risks were summed across all exposure pathways for potential carcinogens of concern. Cancer risks are calculated for long-term exposures.

The potential for chronic non-carcinogenic health effects is evaluated by calculating the total hazard index (HI) for the Alternative 10 emissions. This HI represents the sum of the hazard quotients (HQs) developed for each individual Alternative 10-related chemical, where a HQ is the ratio of the representative air concentration of the chemical to the chemical-specific non-cancer reference exposure level (REL). The non-cancer RELs represent the daily average exposure concentration at (or below) which no adverse health effects are anticipated.

The equations used to calculate the chemical-specific HQs and HIs are:

$$HQ_i = C_i \text{ X MP } / REL_i$$

$$HI = \Sigma\, HQ_i$$

Where:

HQ_i	=	Hazard Quotient for $chemical_i$
C_i	=	Average Daily Air Concentration for $chemical_i$ ($\mu g/m^3$)
REL_i	=	Noncancer Reference Exposure Level for $chemical_i$ ($\mu g/m^3$)
HI	=	Hazard Index
MP	=	MultiPathway Factor (unitless)

SCAQMD has developed adjustment factors (AF) for chemicals that have an acute REL developed for an averaging time other than 1-hr. Therefore, the equations used to calculate the acute HQs and HI are:

$$HQ_i = C_i \text{ X } AF/REL_i$$

$$HI = \Sigma\, HQ_i$$

Where:

HQ_i	=	Hazard Quotient for $chemical_i$
C_i	=	Maximum 1-hr concentration for $chemical_i$ ($\mu g/m^3$)
REL_i	=	Noncancer Reference Exposure Level for $chemical_i$ ($\mu g/m^3$)
AF	=	Adjustment Factor
HI	=	Hazard Index

1.1.3 Risk Characterization

The results from the health risk calculations provide an estimate of the potential risks and hazards to individuals through inhalation of ambient air and other selected pathways as discussed above. The estimated risks and hazards include: lifetime excess cancer risk estimates, cumulative chronic HI estimates, and cumulative acute HI estimates for the receptor locations of concern.

The cancer risks from exposure to multiple carcinogens and multiple pathways are summed across all exposure pathways for all sources contributing to the overall exposure that may potentially impact the receptor.[8] Incremental cancer risks are compared to the risk significance threshold of ten in a million (1×10^{-5}) pursuant to the SCAQMD CEQA Significance Thresholds, which is also consistent with the California Air Toxics “Hotspots” Assessment and Information Act (AB2588).

Chronic and Acute hazard quotients are compared to an acceptable hazard benchmark of one (1.0) pursuant to the SCAQMD CEQA Significance Thresholds. An HQ greater than one indicates that exposure to that contaminant may cause adverse health effects

[8] USEPA. 1989. *Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A)*. USEPA 540/1-89-002, Office of Emergency and Remedial Response, Washington, DC. December.

in exposed populations. It is important to note, however, that the level of concern associated with exposure to non-carcinogenic compounds does not increase linearly as the HQ exceeds one. Typically, compound-specific HQs are summed to calculate pathway HI values. This approach can result in a situation where HI values exceed unity even when no compound-specific HQs exceed unity (i.e., adverse systemic health effects would be expected to occur only if the receptor were exposed to several contaminants simultaneously).

1.1.4 Uncertainty Characterization

In any risk evaluation, a number of assumptions are made in order to estimate human exposure and to calculate potential risks. These assumptions may, however, introduce uncertainty in risk calculations. Regulatory guidance requires that conservative assumptions be used to provide an upper-bound estimate of the risk and to avoid underestimating the potential exposures and associated health risks. The key sources of uncertainty in this health risk evaluation include:

- Identification of Project-related chemicals
- Estimation of exposure concentrations
- Identification of exposure pathways
- Exposure assumptions
- Chemical toxicity.

In all of these cases, conservative assumptions are made in this assessment. Thus, estimated excess cancer risks are upper-bound estimates and the actual incidence of cancer is likely to be lower.

Table C-1. List of all Toxic Air Contaminants in the NBC-Universal Alternative 10 Emissions Inventory and associated Health Impact Data
NBCUniversal
Los Angeles, California

TAC names	CAS	Cancer Potency Factor (mg/kg-day)$^{-1}$	Cancer Risk Resident Multi-Pathway Adjustment	Cancer Risk Worker Multi-Pathway Adjustment	Chronic Hazard Index Reference Exposure Level	Chronic Hazard Index Resident Multi-Pathway Adjustment	Chronic Hazard Index Worker Multi-Pathway Adjustment	Acute Hazard Index Reference Exposure Level	Acute Hazard Index Adjustment Factor
1,1,2,2-Tetrachloroethane	79345	2.00E-01	1	1	0.00E+00	0	0	0	1
1,1,2-Trichloroethane	79005	0.057	1	1	0	0	0	0	1
1,2,4-Trimethylbenzene	95636	0	1	1	0	1	1	0	1
1,2-Dichloropropane	78875	0.063	1	1	0	1	1	0	1
1,3-Butadiene	106990	0.6	1	1	20	1	1	0	1
1,3-Dichloropropene	542756	0.055	1	1	0	1	1	0	1
1,4-Dioxane	123911	0.027	1	1	3000	1	1	3000	1
2,2,4-Trimethylpentane	540841	0	1	1	0	1	1	0	1
2-Methyl naphthalene	91576	0	1	1	0	1	1	0	1
Acenaphthene	83329	0	1	1	0	1	1	0	1
Acenaphthylene	208968	0	1	1	0	1	1	0	1
Acetaldehyde	75070	0.01	1	1	140	1	1	470	1
Acrolein	107028	0	0	0	0.35	1	1	2.5	1
Aluminum	7429905	0	1	1	0	1	1	0	1
Ammonia	7664417	0	0	0	200	1	1	3200	1
Anthracene	120127	0	1	1	0	1	1	0	1
Antimony	7440360	0	1	1	0	1	1	0	1
Arsenic	7440382	12	4.78	4.57	0.15	40.06	37.85	0.2	1
Barium	7440393	0	1	1	0	1	1	0	1
Benz[a]anthracene	56553	0.39	29.76	14.62	0	0	0	0	1
Benzene	71432	0.1	1	1	60	1	1	1300	0.88
Benzo[a]pyrene	50328	3.9	29.76	14.62	0	0	0	0	1
Benzo[b]fluoranthene	205992	0.39	29.76	14.62	0	0	0	0	1
Benzo[e]pyrene	192972	0	1	1	0	1	1	0	1
Benzo[g,h,i]perylene	191242	0	1	1	0	1	1	0	1
Benzo[k]fluoranthene	207089	0.39	29.76	14.62	0	0	0	0	1
Benzyl chloride	100447	0.17	1	1	0	0	0	240	1
Bromine	7726956	0	1	1	0	1	1	0	1
Butyraldehyde	123728	0	1	1	0	1	1	0	1
Cadmium	7440439	15	1	1	0.02	1.5	1.12	0	1
Carbon tetrachloride	56235	0.15	1	1	40	1	1	1900	0.88
Chlorine	7782505	0	0	0	0.2	1	1	210	1
Chloroform	67663	0.019	1	1	300	1	1	150	0.88
Chromium	7440473	0	1	1	0	1	1	0	1
Chromium, hexavalent (& compounds)	18540299	510	1	1	0.2	1	1	0	1
Chrysene	218019	0.039	29.76	14.62	0	0	0	0	1
Cobalt	7440484	0	1	1	0	1	1	0	1
Copper	7440508	0	0	0	0	0	0	100	1
Crotonaldehyde	4170303	0	1	1	0	1	1	0	1
Cumene	98828	0	1	1	0	1	1	0	1
Cyclohexane	110827	0	1	1	0	1	1	0	1
Diesel engine exhaust, particulate matter	9901	1.1	1	1	5	1	1	0	1
Ethyl benzene	100414	0.0087	1	1	2000	1	1	0	1
Ethylene	74851	0	1	1	0	1	1	0	1
Ethylene dibromide {EDB}	106934	0.25	1	1	0.8	1	1	0	1
Ethylene dichloride {EDC}	107062	0.072	1	1	400	1	1	0	1
Ethylene oxide	75218	0.31	1	1	30	1	1	0	1
Fluoranthene	206440	0	1	1	0	1	1	0	1
Fluorene	86737	0	1	1	0	1	1	0	1
Formaldehyde	50000	0.021	1	1	9	1	1	55	1
Hexane	110543	0	0	0	7000	1	1	0	1
Hydrochloric acid	7647010	0	0	0	9	1	1	2100	1
Indeno[1,2,3-cd]pyrene	193395	0.39	29.76	14.62	0	0	0	0	1
Isoprene, except from vegetative emission sources	78795	0	1	1	0	1	1	0	1
Lead	7439921	0.042	4.19	2.94	0	0	0	0	1
Manganese	7439965	0	0	0	0.09	1	1	0	1
Mercury	7439976	0	0	0	0.03	6.66	4.24	1.8	1
Methane	74828	0	1	1	0	1	1	0	1
Methanol	67561	0	0	0	4000	1	1	28000	1
Methyl ethyl ketone {2-Butanone}	78933	0	0	0	0	0	0	13000	1
Methyl tert-butyl ether	1634044	0.0018	1	1	8000	1	1	0	1
Methylene chloride {Dichloromethane}	75092	0.0035	1	1	400	1	1	14000	1
m-Xylene	108383	0	0	0	700	1	1	22000	1
Naphthalene	91203	0.12	1	1	9	1	1	0	1
Nickel	7440020	0.91	1	1	0.05	1	1	6	1
o-Xylene	95476	0	0	0	700	1	1	22000	1
PAHs, total, w/o individ. components reported [Treated as B(a)P for HRA]	1151	3.9	29.76	14.62	0	0	0	0	1
Perchloroethylene {Tetrachloroethene}	127184	0.021	1	1	35	1	1	20000	1
Perylene	198550	0	1	1	0	1	1	0	1
Phenanthrene	85018	0	1	1	0	1	1	0	1
Phosphorus	7723140	0	1	1	0	1	1	0	1
Propionaldehyde	123386	0	1	1	0	1	1	0	1
Propylene	115071	0	0	0	3000	1	1	0	1
p-Xylene	106423	0	0	0	700	1	1	22000	1
Pyrene	129000	0	1	1	0	1	1	0	1
Selenium	7782492	0	0	0	20	1	1	0	1
Silver	7440224	0	1	1	0	1	1	0	1
Styrene	100425	0	0	0	900	1	1	21000	1
Thallium	7440280	0	1	1	0	1	1	0	1
Toluene	108883	0	0	0	300	1	1	37000	1
Toluene-2,4-diisocyanate	584849	0.039	1	1	0.07	1	1	0	1
Toluene-2,6-diisocyanate	91087	0.039	1	1	0.07	1	1	0	1
Trichloroethylene	79016	0.007	1	1	600	1	1	0	1
Vanadium (fume or dust)	7440622	0	1	1	0	1	1	0	1
Vinyl chloride	75014	0.27	1	1	0	0	0	180000	1
XYLENES (mixed xylenes)	1330207	0	0	0	700	1	1	22000	1
Zinc	7440666	0	1	1	0	1	1	0	1

P:\N\NBCUniversal\AQ EIR\Post Processing\Alt10\Operation\[Inputs to database_OP.xlsx]tbl\Toxicity

Source: South Coast Air Quality Management District. 2010. Permit Application Package "L". Available at http://www.aqmd.gov/prdas/pdf/1401AttL2Sep2010.pdf

Appendix D

Construction Calculations for Modeling

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix Zone A

CO

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Studio Office	Studio Office	S-3	24.6	37.8	37.8	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7	3.7	3.7	3.7		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	37.9	37.9													8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
	Parking Structure (Small)	Parking	P-7				8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7									
TOTALS																												
	Module 1 (lb/day)			24.6	37.8	37.8	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7	3.7	3.7	3.7	0.0	0.0
	Module 2 (lb/day)			0.0	37.9	37.9	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	12.4	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
	Max Daily Emission Rate (lbs/day)			24.6	37.9	37.9	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	12.4	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7

	Annual Emissions (lbs)	Year 1	3,434
5	years	Year 2	2,727
		Year 3	2,298
		Year 4	2,379
		Year 5	1,640

NO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	62.4	77.1	77.1	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3	8.3	8.3	8.3		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	77.3	77.3													20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
	Parking Structure (Small)	Parking	P-7				20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3									
TOTALS																												
	Module 1 (lb/day)			62.4	77.1	77.1	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3	8.3	8.3	8.3	0.0	0.0
	Module 2 (lb/day)			0.0	77.3	77.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	28.5	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
	Max Daily Emission Rate by Month (lbs/day)			62.4	77.3	77.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	28.5	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3

	Annual Emissions (lbs)	Year 1	7,688
5	years	Year 2	5,953
		Year 3	5,349
		Year 4	5,531
		Year 5	3,768

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	3.4	3.9	3.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	3.9	3.9													1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Parking Structure (Small)	Parking	P-7				1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5									
TOTALS																												
	Module 1 (lb/day)			3.4	3.9	3.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.0	0.0
	Module 2 (lb/day)[2]			0.0	3.9	3.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Max Daily Emission Rate by Month (lbs/day)			3.4	3.9	3.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

	Annual Emissions (lbs)	Year 1	399
5	years	Year 2	309
		Year 3	279
		Year 4	289
		Year 5	199

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	3.9	3.9													0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-7				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
TOTALS																												
	Module 1 (lb/day)			0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Annual Emissions (lbs)	Year 1	129
5	years	Year 2	128
		Year 3	0
		Year 4	0
		Year 5	0

SO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	0.1	0.1													0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-7				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
TOTALS																												
	Module 1 (lb/day)			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Annual Emissions (lbs)	Year 1	8
5	years	Year 2	5.9
		Year 3	5.4
		Year 4	5.7
		Year 5	4.0

VOC

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	5.6	9.4	9.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1	1.1	1.1	1.1		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	9.4	9.4													2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	Parking Structure (Small)	Parking	P-7				2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1									
TOTALS																												
	Module 1 (lb/day)			5.6	9.4	9.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1	1.1	1.1	1.1	0.0	0.0
	Module 2 (lb/day)[2]			0.0	9.4	9.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	Max Daily Emission Rate by Month (lbs/day)			5.6	9.4	9.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6

	Annual Emissions (lbs)	Year 1	940
5	years	Year 2	749
		Year 3	681
		Year 4	705
		Year 5	486

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	3.1	3.6	3.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	3.6	3.6													1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Parking Structure (Small)	Parking	P-7				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4									
TOTALS																												
	Module 1 (lb/day)			3.1	3.6	3.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.0	0.0
	Module 2 (lb/day)[2]			0.0	3.6	3.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Max Daily Emission Rate by Month (lbs/day)			3.1	3.6	3.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

	Annual Emissions (lbs)	Year 1	367
5	years	Year 2	284
		Year 3	257
		Year 4	266
		Year 5	183

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone A

Fugitive $PM_{2.5}$ — **Construction Months**

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	0.8	0.8													0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-7				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
TOTALS																												
	Module 1 (lb/day)			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Annual Emissions (lbs)	Year 1	27
5	years	Year 2	27
		Year 3	0
		Year 4	0
		Year 5	0

CO_2 — **Construction Months**

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	Entertainment (Small)	Studio	S-3	5,900.8	6,813.7	6,813.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9		
2	Studio Office/Office (Tower)	Studio Office	S-17	NA	6,833.1	6,833.1													1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Parking Structure (Small)	Parking	P-7				1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9									
TOTALS																												
	Module 1 (lb/day)			5,900.8	6,813.7	6,813.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9	0.0	0.0
	Module 2 (lb/day)[2]			0.0	6,833.1	6,833.1	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	2,742.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Max Daily Emission Rate by Month (lbs/day)			5,900.8	6,833.1	6,833.1	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	2,742.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7

	Annual Emissions (lbs)	Year 1	701,103
5	years	Year 2	549,109
		Year 3	493,609
		Year 4	512,812
		Year 5	362,022

Universal Evolution Plan EIR - Alterna

Front Lot Construction Assumptions - Scheduling and Equipment Mix Zone A

CO

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Studio Office	Studio Office	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7	3.7	3.7	3.7	3.7	3.7		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)			8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0
	Max Daily Emission Rate (lbs/day)			8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

NO_x

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3	8.3	8.3	8.3	8.3	8.3		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)			20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3	8.3	8.3	8.3	8.3	8.3	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8.3	8.3	8.3	8.3	8.3	8.3	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

SO_x

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

VOC

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1	1.1	1.1	1.1	1.1	1.1		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

Universal Evolution Plan EIR - Alterna

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone A

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

CO_2

	Construction Prototype	Land Use	Activity ID	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	Entertainment (Small)	Studio	S-3																	
2	Studio Office/Office (Tower)	Studio Office	S-17	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9	872.9	872.9		
	Parking Structure (Small)	Parking	P-7																	
TOTALS																				
	Module 1 (lb/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2 (lb/day)[2]			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9	872.9	872.9	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9	872.9	872.9	0.0	0.0
	Annual Emissions (lbs)	Year 1																		
5	years	Year 2																		
		Year 3																		
		Year 4																		
		Year 5																		

Universal Evolution Plan EIR - Alternative 10
Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

CO

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	24.6	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2	Studio Office/Office (Tower)	Office	O-2	24.6	19.8	19.8										
	Parking Structure (Medium)	Parking	P-8				9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
3	Entertainment (Large)	Studio Office	S-2	24.6	39.7	39.7	39.7									
	Parking Structure (Medium)	Parking	P-1					9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Large)	Studio	S-14		19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS																
	Module 1			24.6	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 2			24.6	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 3			24.6	59.5	59.5	88.4	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Max Daily Emission Rate by Month (lbs/day)			24.6	59.5	59.5	88.4	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Annual Emissions (lbs)	Year 1		2,904.9												
8	years	Year 2		1,919.5												
		Year 3		2,676.1												
		Year 4		2,460.0												
		Year 5		2,148.1												
		Year 6		6,494.5												
		Year 7		3,502.8												
		Year 8		562.9												

NO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	62.4	0.1	0.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
2	Studio Office/Office (Tower)	Office	O-2	62.3	0.2	0.2										
	Parking Structure (Medium)	Parking	P-8				21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
3	Entertainment (Large)	Studio Office	S-2	62.4	40.8	40.8	40.8									
	Parking Structure (Medium)	Parking	P-1					21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Large)	Studio	S-14		40.8	40.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS																
	Module 1			62.4	0.1	0.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 2			62.3	0.2	0.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 3			62.4	81.7	81.7	62.2	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Max Daily Emission Rate by Month (lbs/day)			62.4	81.7	81.7	62.2	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Annual Emissions (lbs)	Year 1		5,397.8												
		Year 2		4,554.9												
		Year 3		4,849.8												
		Year 4		5,844.7												
		Year 5		5,102.0												
		Year 6		10,245.3												
		Year 7		8,317.3												
		Year 8		1,333.7												

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2	Studio Office/Office (Tower)	Office	O-2	3.4	2.1	2.1										
	Parking Structure (Medium)	Parking	P-8				1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
3	Entertainment (Large)	Studio Office	S-2	3.4	2.1	2.1	2.1									
	Parking Structure (Medium)	Parking	P-1					1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Large)	Studio	S-14		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS																
	Module 1			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 2			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 3			3.4	4.2	4.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Max Daily Emission Rate by Month (lbs/day)			3.4	4.2	4.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Annual Emissions (lbs)	Year 1		351.3												
		Year 2		239.3												
		Year 3		323.5												
		Year 4		305.4												
		Year 5		267.0												
		Year 6		532.9												
		Year 7		435.7												
		Year 8		58.5												

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2	0.1	2.0	2.0										
	Parking Structure (Medium)	Parking	P-8				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-2	0.1	2.0	2.0	2.0									
	Parking Structure (Medium)	Parking	P-1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-14		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.1	3.9	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	3.9	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		66.0												
		Year 2		0.0												
		Year 3		65.8												
		Year 4		0.0												
		Year 5		0.0												
		Year 6		173.7												
		Year 7		0.0												
		Year 8		0.0												

SO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2	0.1	0.0	0.0										
	Parking Structure (Medium)	Parking	P-8				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-2	0.1	0.1	0.1	0.1									
	Parking Structure (Medium)	Parking	P-1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-14		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		6.6												
		Year 2		4.5												
		Year 3		6.1												
		Year 4		5.7												
		Year 5		5.0												
		Year 6		10.5												
		Year 7		5.2												
		Year 8		1.1												

VOC

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	Studio Office/Office (Tower)	Office	O-2	5.6	5.0	5.0										
	Parking Structure (Medium)	Parking	P-8				2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
3	Entertainment (Large)	Studio Office	S-2	5.6	10.0	10.0	10.0									
	Parking Structure (Medium)	Parking	P-1					2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Large)	Studio	S-14		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS																
	Module 1			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 2			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 3			5.6	14.9	14.9	12.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Max Daily Emission Rate by Month (lbs/day)			5.6	14.9	14.9	12.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Annual Emissions (lbs)	Year 1		828.7												
		Year 2		586.9												
		Year 3		760.5												
		Year 4		749.2												
		Year 5		655.0												
		Year 6		1,541.4												
		Year 7		1,068.6												
		Year 8		172.7												

D.1-1B Summary of Daily and Annual Onsite Mass Emissions - Module B
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	Studio Office/Office (Tower)	Office	O-2	3.1	1.9	1.9										
	Parking Structure (Medium)	Parking	P-8				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	Entertainment (Large)	Studio Office	S-2	3.1	3.8	3.8	3.8									
	Parking Structure (Medium)	Parking	P-1					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Large)	Studio	S-14		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS																
	Module 1			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 2			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 3			3.1	5.7	5.7	4.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Max Daily Emission Rate by Month (lbs/day)			3.1	5.7	5.7	4.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Annual Emissions (lbs)	Year 1		323.5												
		Year 2		220.2												
		Year 3		297.9												
		Year 4		281.0												
		Year 5		245.7												
		Year 6		596.6												
		Year 7		400.9												
		Year 8		53.8												

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2	0.0	0.4	0.4										
	Parking Structure (Medium)	Parking	P-8				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-2	0.0	0.8	0.8	0.8									
	Parking Structure (Medium)	Parking	P-1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-14		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	1.2	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	1.2	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		13.9												
		Year 2		0.0												
		Year 3		13.8												
		Year 4		0.0												
		Year 5		0.0												
		Year 6		58.9												
		Year 7		0.0												
		Year 8		0.0												

CO_2

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Studio Office/Office (Tower)	Office	O-1	5,898.4	3,475.5	3,475.5	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6
2	Studio Office/Office (Tower)	Office	O-2	5,888.6	3,502.5	3,502.5										
	Parking Structure (Medium)	Parking	P-8				1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
3	Entertainment (Large)	Studio Office	S-2	5,904.8	6,860.9	6,860.9										
	Parking Structure (Medium)	Parking	P-1				0.0	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Entertainment (Large)	Studio	S-14		3,425.0	3,425.0	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
TOTALS																
	Module 1			5,898.4	3,475.5	3,475.5	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6
	Module 2			5,888.6	3,502.5	3,502.5	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Module 3			5,904.8	10,285.9	10,285.9	1,869.7	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5
	Max Daily Emission Rate by Month (lbs/day)			5,904.8	10,285.9	10,285.9	1,870.6	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5	3,739.5
	Annual Emissions (lbs)	Year 1		591,099.6												
		Year 2		406,403												
		Year 3		548,019												
		Year 4		512,960												
		Year 5		450,117												
		Year 6		934,044												
		Year 7		735,253												
		Year 8		120,674												

Universal Evolution Plan EIR - Alternative 10
Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
2	Studio Office/Office (Tower)	Office	O-2			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Parking Structure (Medium)	Parking	P-8	9.0	9.0	3.8									
3	Entertainment (Large)	Studio Office	S-2											9.0	9.0
	Parking Structure (Medium)	Parking	P-1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	
	Entertainment (Large)	Studio	S-14	3.8	3.8	3.8	3.8								
TOTALS															
	Module 1			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Module 2			9.0	9.0	12.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 3			12.8	12.8	12.8	12.8	9.0	9.0	9.0	9.0	9.0	3.8	12.8	9.0
	Max Daily Emission Rate by Month (lbs/day)			12.8	12.8	12.8	12.8	9.0	9.0	9.0	9.0	9.0	9.0	12.8	9.0
	Annual Emissions (lbs)	Year 1													
8	years	Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0
2	Studio Office/Office (Tower)	Office	O-2			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Parking Structure (Medium)	Parking	P-8	21.4	21.4	8.9									
3	Entertainment (Large)	Studio Office	S-2											21.4	21.4
	Parking Structure (Medium)	Parking	P-1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	
	Entertainment (Large)	Studio	S-14	9.0	9.0	9.0	9.0								
TOTALS															
	Module 1			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0
	Module 2			21.4	21.4	30.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 3			30.3	30.3	30.3	30.3	21.4	21.4	21.4	21.4	21.4	8.9	30.3	21.4
	Max Daily Emission Rate by Month (lbs/day)			30.3	30.3	30.3	30.3	21.4	21.4	21.4	21.4	21.4	21.4	30.3	21.4
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
2	Studio Office/Office (Tower)	Office	O-2			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Parking Structure (Medium)	Parking	P-8	1.1	1.1	0.5									
3	Entertainment (Large)	Studio Office	S-2											0.6	0.6
	Parking Structure (Medium)	Parking	P-1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	
	Entertainment (Large)	Studio	S-14	0.5	0.5	0.5	0.5								
TOTALS															
	Module 1			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Module 2			1.1	1.1	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 3			1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	0.5	1.1	0.6
	Max Daily Emission Rate by Month (lbs/day)			1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8	0.0	0.0	0.0									
3	Entertainment (Large)	Studio Office	S-2											0.0	0.0
	Parking Structure (Medium)	Parking	P-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Entertainment (Large)	Studio	S-14	0.0	0.0	0.0	0.0								
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

SO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8	0.0	0.0	0.0									
3	Entertainment (Large)	Studio Office	S-2											0.0	0.0
	Parking Structure (Medium)	Parking	P-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Entertainment (Large)	Studio	S-14	0.0	0.0	0.0	0.0								
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

VOC

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
2	Studio Office/Office (Tower)	Office	O-2			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Parking Structure (Medium)	Parking	P-8	2.7	2.7	1.2									
3	Entertainment (Large)	Studio Office	S-2											2.7	2.7
	Parking Structure (Medium)	Parking	P-1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	
	Entertainment (Large)	Studio	S-14	1.2	1.2	1.2	1.2								
TOTALS															
	Module 1			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Module 2			2.7	2.7	3.9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 3			3.9	3.9	3.9	3.9	2.7	2.7	2.7	2.7	2.7	1.2	3.9	2.7
	Max Daily Emission Rate by Month (lbs/day)			3.9	3.9	3.9	3.9	2.7	2.7	2.7	2.7	2.7	2.7	3.9	2.7
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

D.1-1B Summary of Daily and Annual Onsite Mass Emissions - Module B
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
2	Studio Office/Office (Tower)	Office	O-2			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Parking Structure (Medium)	Parking	P-8	1.0	1.0	0.4									
3	Entertainment (Large)	Studio Office	S-2											0.5	0.5
	Parking Structure (Medium)	Parking	P-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	
	Entertainment (Large)	Studio	S-14	0.4	0.4	0.4	0.4								
TOTALS															
	Module 1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Module 2			1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 3			1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	0.4	1.0	0.5
	Max Daily Emission Rate by Month (lbs/day)			1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio Office/Office (Tower)	Office	O-2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8	0.0	0.0	0.0									
3	Entertainment (Large)	Studio Office	S-2											0.0	0.0
	Parking Structure (Medium)	Parking	P-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Entertainment (Large)	Studio	S-14	0.0	0.0	0.0	0.0								
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

CO_2

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24
1	Studio Office/Office (Tower)	Office	O-1	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	877.1	877.1	877.1	877.1
2	Studio Office/Office (Tower)	Office	O-2			1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6
	Parking Structure (Medium)	Parking	P-8	1,869.7	1,869.7	872.9									
3	Entertainment (Large)	Studio Office	S-2											1,869.7	1,869.7
	Parking Structure (Medium)	Parking	P-1	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	
	Entertainment (Large)	Studio	S-14	876.2	876.2	876.2	876.2								
TOTALS															
	Module 1			1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	877.1	877.1	877.1	877.1
	Module 2			1,869.7	1,869.7	2,743.4	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6
	Module 3			2,746.0	2,746.0	2,746.0	2,746.0	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	2,742.6	1,869.7
	Max Daily Emission Rate by Month (lbs/day)			2,746.0	2,746.0	2,746.0	2,746.0	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	2,742.6	1,870.6
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

CO

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	3.8	3.8													
2	Studio Office/Office (Tower)	Office	O-2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	3.8	3.8
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	3.8	3.8
	Module 3			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Max Daily Emission Rate by Month (lbs/day)			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Annual Emissions (lbs)	Year 1																
8	years	Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

NO_x

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	9.0	9.0													
2	Studio Office/Office (Tower)	Office	O-2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0	9.0	9.0
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0	9.0	9.0
	Module 3			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
	Max Daily Emission Rate by Month (lbs/day)			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	0.5	0.5													
2	Studio Office/Office (Tower)	Office	O-2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5
	Module 3			0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5
	Max Daily Emission Rate by Month (lbs/day)			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6	0.6	0.5	0.5
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0													
2	Studio Office/Office (Tower)	Office	O-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

SO_x

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0													
2	Studio Office/Office (Tower)	Office	O-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

VOC

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	1.2	1.2													
2	Studio Office/Office (Tower)	Office	O-2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2	1.2	1.2
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2	1.2	1.2
	Module 3			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Max Daily Emission Rate by Month (lbs/day)			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

D.1-1B Summary of Daily and Annual Onsite Mass Emissions - Module B
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone B

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	0.4	0.4													
2	Studio Office/Office (Tower)	Office	O-2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4
	Module 3			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
	Max Daily Emission Rate by Month (lbs/day)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.4	0.4
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	0.0	0.0													
2	Studio Office/Office (Tower)	Office	O-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

CO_2

	Construction Prototype	Land Use	Activity ID	25	26	27		28	29	30	31	32	33	34	35	36	37	38
1	Studio Office/Office (Tower)	Office	O-1	877.1	877.1													
2	Studio Office/Office (Tower)	Office	O-2	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	877.1	877.1	877.1	877.1	877.1	877.1
	Parking Structure (Medium)	Parking	P-8															
3	Entertainment (Large)	Studio Office	S-2	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	876.2	876.2
	Parking Structure (Medium)	Parking	P-1															
	Entertainment (Large)	Studio	S-14															
TOTALS																		
	Module 1			877.1	877.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	877.1	877.1	877.1	877.1	877.1	877.1
	Module 3			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	876.2	876.2
	Max Daily Emission Rate by Month (lbs/day)			1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,869.7	1,869.7	1,869.7	1,869.7	877.1	877.1
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
		Year 7																
		Year 8																

D.1-1C Summary of Daily and Annual Onsite Mass Emissions - Module C
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone C

CO

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	24.5	39.7	39.7													9.0	9.0	9.0	9.0
	Parking Structure (Small)	Parking	P-6				9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8			
2	Entertainment (Large)	Studio	S-7	24.6	19.9	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Large)	Studio	S-8		19.8	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS																						
	Module 1			24.5	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12.8	9.0	9.0	9.0
	Module 2			24.6	39.7	39.7	39.7	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Max Daily Emission Rate by Month (lbs/day)			24.6	39.7	39.7	39.7	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Annual Emissions (lbs)	Year 1		3,559.2																		
		Year 2		2,459.5																		
		Year 3		4,370.8																		
		Year 4		4,748.1																		
		Year 5		1,854.7																		

NO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	62.1	81.8	81.8													21.4	21.4	21.4	21.4
	Parking Structure (Small)	Parking	P-6				21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9			
2	Entertainment (Large)	Studio	S-7	62.3	40.9	40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Large)	Studio	S-8		40.9	40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS																						
	Module 1			62.1	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	30.3	21.4	21.4	21.4
	Module 2			62.3	81.9	81.9	81.9	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7
	Max Daily Emission Rate by Month (lbs/day)			62.3	81.9	81.9	81.9	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7
	Annual Emissions (lbs)	Year 1		8,086.9																		
		Year 2		5,843.2																		
		Year 3		9,733.9																		
		Year 4		11,280.6																		
		Year 5		4,390.3																		

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	3.4	4.2	4.2													1.1	1.1	1.1	1.1
	Parking Structure (Small)	Parking	P-6				1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5			
2	Entertainment (Large)	Studio	S-7	3.4	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Large)	Studio	S-8		2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS																						
	Module 1			3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.6	1.1	1.1	1.1
	Module 2			3.4	4.2	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Max Daily Emission Rate by Month (lbs/day)			3.4	4.2	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Annual Emissions (lbs)	Year 1		420.1																		
		Year 2		305.3																		
		Year 3		505.3																		
		Year 4		588.6																		
		Year 5		232.5																		

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	0.0	3.9	3.9													0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	Entertainment (Large)	Studio	S-7	0.1	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-8		2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																						
	Module 1			0.0	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		129.1																		
		Year 2		0.0																		
		Year 3		216.2																		
		Year 4		0.0																		
		Year 5		0.0																		

SO_x

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	0.1	0.1	0.1													0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	Entertainment (Large)	Studio	S-7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-8		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																						
	Module 1			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		7.5																		
		Year 2		5.7																		
		Year 3		9.6																		
		Year 4		10.9																		
		Year 5		4.4																		

VOC

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	5.6	10.0	10.0													2.7	2.7	2.7	2.7
	Parking Structure (Small)	Parking	P-6				2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2			
2	Entertainment (Large)	Studio	S-7	5.6	5.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Large)	Studio	S-8		5.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS																						
	Module 1			5.6	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.9	2.7	2.7	2.7
	Module 2			5.6	10.0	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Max Daily Emission Rate by Month (lbs/day)			5.6	10.0	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Annual Emissions (lbs)	Year 1		992.7																		
		Year 2		749.1																		
		Year 3		1,196.3																		
		Year 4		1,444.8																		
		Year 5		570.2																		

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	3.1	3.8	3.8													1.0	1.0	1.0	1.0
	Parking Structure (Small)	Parking	P-6				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4			
2	Entertainment (Large)	Studio	S-7	3.1	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Large)	Studio	S-8		1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS																						
	Module 1			3.1	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0
	Module 2			3.1	3.8	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Max Daily Emission Rate by Month (lbs/day)			3.1	3.8	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Annual Emissions (lbs)	Year 1		386.6																		
		Year 2		280.9																		
		Year 3		465.2																		
		Year 4		541.6																		
		Year 5		213.9																		

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	0.0	0.8	0.8													0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	Entertainment (Large)	Studio	S-7	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Studio	S-8		0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																						
	Module 1			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		27.1																		
		Year 2		0.0																		
		Year 3		45.4																		
		Year 4		0.0																		
		Year 5		0.0																		

CO_2

	Construction Prototype	Land Use	Activity ID	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Studio Office/Office	Studio Office	S-6	5,870.7	6,852.5	6,852.5													1,869.7	1,869.7	1,869.7	1,869.7
	Parking Structure (Small)	Parking	P-6				1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9			
2	Entertainment (Large)	Studio	S-7	5,891.0	3,432.6	3,432.6	3,432.6	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
	Entertainment (Large)	Studio	S-8		3,430.0	3,430.0	3,430.0	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
TOTALS																						
	Module 1			5,870.7	6,852.5	6,852.5	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	2,742.6	1,869.7	1,869.7	1,869.7
	Module 2			5,891.0	6,862.6	6,862.6	6,862.6	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4
	Max Daily Emission Rate by Month (lbs/day)			5,891.0	6,862.6	6,862.6	6,862.6	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4	3,734.4
	Annual Emissions (lbs)	Year 1		702,051																		
		Year 2		512,812																		
		Year 3		847,794																		
		Year 4		985,883																		
		Year 5		400,094																		

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone C

CO

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	9.0	9.0	9.0	3.8	3.8	3.8	3.8					
	Entertainment (Large)	Studio	S-8	9.0	9.0	9.0	3.8	3.8	3.8	3.8					
TOTALS															
	Module 1			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Module 2			18.0	18.0	18.0	7.6	7.6	7.6	7.6	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			18.0	18.0	18.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

NO_x

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	21.4	21.4	21.4	8.9	8.9	8.9	8.9					
	Entertainment (Large)	Studio	S-8	21.4	21.4	21.4	8.9	8.9	8.9	8.9					
TOTALS															
	Module 1			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Module 2			42.7	42.7	42.7	17.8	17.8	17.8	17.8	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			42.7	42.7	42.7	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	1.1	1.1	1.1	0.5	0.5	0.5	0.5					
	Entertainment (Large)	Studio	S-8	1.1	1.1	1.1	0.5	0.5	0.5	0.5					
TOTALS															
	Module 1			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Module 2			2.2	2.2	2.2	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Entertainment (Large)	Studio	S-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

SO_x

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Entertainment (Large)	Studio	S-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

VOC

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	2.7	2.7	2.7	1.2	1.2	1.2	1.2					
	Entertainment (Large)	Studio	S-8	2.7	2.7	2.7	1.2	1.2	1.2	1.2					
TOTALS															
	Module 1			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Module 2			5.5	5.5	5.5	2.4	2.4	2.4	2.4	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			5.5	5.5	5.5	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	1.0	1.0	1.0	0.4	0.4	0.4	0.4					
	Entertainment (Large)	Studio	S-8	1.0	1.0	1.0	0.4	0.4	0.4	0.4					
TOTALS															
	Module 1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Module 2			2.1	2.1	2.1	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.1	2.1	2.1	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Entertainment (Large)	Studio	S-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

CO_2

	Construction Prototype	Land Use	Activity ID	19	20	21	22	23	24	25	26	27	28	29	30
1	Studio Office/Office	Studio Office	S-6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9
	Parking Structure (Small)	Parking	P-6												
2	Entertainment (Large)	Studio	S-7	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9					
	Entertainment (Large)	Studio	S-8	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9					
TOTALS															
	Module 1			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9
	Module 2			3,734.4	3,734.4	3,734.4	1,745.7	1,745.7	1,745.7	1,745.7	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			3,734.4	3,734.4	3,734.4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													

D.1-1D Summary of Daily and Annual Onsite Mass Emissions - Module D
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone D

CO

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	24.6	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Small)	Studio	S-12		19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2	Studio	Studio	S-13	NA	NA	20.1	20.1	20.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Studio	Studio	S-21		19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Studio	Studio	S-24		19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Studio	Studio	S-25		19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
3	Entertainment (Large)	Studio Office	S-5	24.8	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Studio	Studio	S-9		19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
4	Parking Structure (Medium)	Parking	P-2/S-20	24.9	39.8	39.8	39.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS																
	Module 1			24.6	39.7	39.7	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Module 2			0.0	59.5	79.6	47.1	47.1	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
	Module 3			24.8	39.8	39.8	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Module 4			24.9	39.8	39.8	39.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Max Daily Emission Rate by Month (lbs/day)			24.9	59.5	79.6	47.1	47.1	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
	Annual Emissions (lbs)	Year 1		5,539.7												
		Year 2		4,322.2												
		Year 3		10,943.9												
		Year 4		8,127.5												
		Year 5		4,750.8												
		Year 6		3,839.3												
		Year 7		3,053.6												
		Year 8		2,758.3												
		Year 9		2,373.4												
		Year 10		1,072.4												

NO_x

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	62.4	41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Small)	Studio	S-12		40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
2	Studio	Studio	S-13	NA	NA	41.8	41.8	41.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Studio	Studio	S-21		40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Studio	Studio	S-24		40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Studio	Studio	S-25		40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
3	Entertainment (Large)	Studio Office	S-5	63.1	41.3	41.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Studio	Studio	S-9		41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
4	Parking Structure (Medium)	Parking	P-2	63.3	82.2	82.2	82.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS																
	Module 1			62.4	81.9	81.9	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Module 2			0.0	122.7	164.5	105.9	105.9	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4
	Module 3			63.1	82.3	82.3	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Module 4			63.3	82.2	82.2	82.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Max Daily Emission Rate by Month (lbs/day)			63.3	122.7	164.5	105.9	105.9	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4
	Annual Emissions (lbs)	Year 1		12,795.1												
		Year 2		10,051.8												
		Year 3		25,190.6												
		Year 4		18,921.7												
		Year 5		11,289.4												
		Year 6		8,743.8												
		Year 7		6,983.7												
		Year 8		4,779.1												
		Year 9		2,373.4												
		Year 10		1,072.4												

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Small)	Studio	S-12		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2	Studio	Studio	S-13	NA	NA	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Studio	Studio	S-21		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Studio	Studio	S-24		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Studio	Studio	S-25		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
3	Entertainment (Large)	Studio Office	S-5	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Studio	Studio	S-9		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
4	Parking Structure (Medium)	Parking	P-2	3.4	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS																
	Module 1			3.4	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Module 2			0.0	6.2	8.4	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Module 3			3.4	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Module 4			3.4	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Max Daily Emission Rate by Month (lbs/day)			3.4	6.2	8.4	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Annual Emissions (lbs)	Year 1		665.5												
		Year 2		525.3												
		Year 3		1,307.5												
		Year 4		990.5												
		Year 5		589.1												
		Year 6		457.6												
		Year 7		362.1												
		Year 8		321.4												
		Year 9		294.2												
		Year 10		133.3												

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Studio	S-12		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio	Studio	S-13	NA	NA	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-21		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-24		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-25		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-5	0.3	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-9		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.3	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	5.9	7.8	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.3	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.3	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.3	5.9	7.8	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		130.4												
		Year 2		64.6												
		Year 3		258.5												
		Year 4		132.7												
		Year 5		0.0												
		Year 6		131.8												
		Year 7		85.4												
		Year 8		107.3												
		Year 9		0.0												
		Year 10		0.0												

SO_x

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Studio	S-12		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio	Studio	S-13	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-21		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-24		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-25		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

D.1-1D Summary of Daily and Annual Onsite Mass Emissions - Module D
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone D

TOTALS															
Module 1			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 2			0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Module 3			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Annual Emissions (lbs)	Year 1		12.4												
	Year 2		9.9												
	Year 3		24.3												
	Year 4		18.6												
	Year 5		10.9												
	Year 6		8.4												
	Year 7		6.5												
	Year 8		6.1												
	Year 9		5.4												
	Year 10		2.5												

VOC

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Small)	Studio	S-12		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	Studio	Studio	S-13	NA	NA	5.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Studio	Studio	S-21		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Studio	Studio	S-24		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Studio	Studio	S-25		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
3	Entertainment (Large)	Studio Office	S-5	5.7	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Studio	Studio	S-9		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
4	Parking Structure (Medium)	Parking	P-2	5.7	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS																
Module 1				5.6	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Module 2				0.0	14.9	20.0	13.3	13.3	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
Module 3				5.7	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Module 4				5.7	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Max Daily Emission Rate by Month (lbs/day)				5.7	14.9	20.0	13.3	13.3	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
Annual Emissions (lbs)	Year 1			1,595.4												
	Year 2			1,284.6												
	Year 3			3,189.4												
	Year 4			2,391.4												
	Year 5			1,445.5												
	Year 6			1,083.6												
	Year 7			882.5												
	Year 8			781.6												
	Year 9			722.2												
	Year 10			327.1												

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Small)	Studio	S-12		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	Studio	Studio	S-13	NA	NA	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Studio	Studio	S-21		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Studio	Studio	S-24		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Studio	Studio	S-25		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	Entertainment (Large)	Studio Office	S-5	3.2	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Studio	Studio	S-9		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4	Parking Structure (Medium)	Parking	P-2	3.2	3.8	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS																
Module 1				3.1	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Module 2				0.0	5.7	7.7	5.0	5.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Module 3				3.2	3.9	3.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Module 4				3.2	3.8	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max Daily Emission Rate by Month (lbs/day)				3.2	5.7	7.7	5.0	5.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Annual Emissions (lbs)	Year 1			612.6												
	Year 2			483.3												
	Year 3			1,203.2												
	Year 4			912.0												
	Year 5			542.0												
	Year 6			421.8												
	Year 7			333.2												
	Year 8			295.7												
	Year 9			270.7												
	Year 10			122.6												

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Studio	S-12		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Studio	Studio	S-13	NA	NA	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-21		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-24		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-25		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment (Large)	Studio Office	S-5	0.1	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Studio	Studio	S-9		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
Module 1				0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 2				0.0	1.2	1.6	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 3				0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4				0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)				0.1	1.2	1.6	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1			27.4												
	Year 2			13.6												
	Year 3			54.3												
	Year 4			27.9												
	Year 5			0.0												
	Year 6			27.7												
	Year 7			17.9												
	Year 8			22.5												
	Year 9			0.0												
	Year 10			0.0												

CO_2

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Large)	Studio	S-1	5,902.4	3,438.7	3,438.7	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6
	Entertainment (Small)	Studio	S-12		3,427.3	3,427.3	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
2	Studio	Studio	S-13	NA	NA	3,518.3	3,518.3	3,518.3	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
	Studio	Studio	S-21		3,429.9	3,429.9	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
	Studio	Studio	S-24		3,426.5	3,426.5	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
	Studio	Studio	S-25		3,426.5	3,426.5	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
3	Entertainment (Large)	Studio Office	S-5	5,974.7	3,465.1	3,465.1	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
	Studio	Studio	S-9		3,442.9	3,442.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
4	Parking Structure (Medium)	Parking	P-2	5,992.6	6,892.8	6,892.8	6,892.8	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
TOTALS																
Module 1				5,902.4	6,866.0	6,866.0	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9
Module 2				0.0	10,282.9	13,801.1	9,117.4	9,117.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4
Module 3				5,974.7	6,908.0	6,908.0	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8
Module 4				5,992.6	6,892.8	6,892.8	6,892.8	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Max Daily Emission Rate by Month (lbs/day)				5,992.6	10,282.9	13,801.1	9,117.4	9,117.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4
Annual Emissions (lbs)	Year 1			1,113,631												
	Year 2			886,029												
	Year 3			2,182,948												
	Year 4			1,673,799												
	Year 5			986,773												
	Year 6			776,226												
	Year 7			604,117												
	Year 8			536,612												
	Year 9			492,719												
	Year 10			224,503												

D.1-1D Summary of Daily and Annual Onsite Mass Emissions - Module D
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone D

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
1	Entertainment (Large)	Studio	S-1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
	Entertainment (Small)	Studio	S-12	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
2	Studio	Studio	S-13	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
	Studio	Studio	S-21	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
	Studio	Studio	S-24	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
	Studio	Studio	S-25	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
3	Entertainment (Large)	Studio Office	S-5	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8					
	Studio	Studio	S-9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	3.8
4	Parking Structure (Medium)	Parking	P-2/S-20	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8			
TOTALS																
	Module 1			18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	7.6	7.6	7.6	0.0	0.0
	Module 2			36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	15.2	15.2	15.2	0.0	0.0
	Module 3			18.0	18.0	18.0	18.0	12.8	12.8	12.8	12.8	3.8	3.8	3.8	3.8	3.8
	Module 4			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	15.2	15.2	15.2	3.8	3.8
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
1	Entertainment (Large)	Studio	S-1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
	Entertainment (Small)	Studio	S-12	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
2	Studio	Studio	S-13	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
	Studio	Studio	S-21	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
	Studio	Studio	S-24	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
	Studio	Studio	S-25	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
3	Entertainment (Large)	Studio Office	S-5	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0					
	Studio	Studio	S-9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9	8.9
4	Parking Structure (Medium)	Parking	P-2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9			
TOTALS																
	Module 1			42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	17.8	17.8	17.8	0.0	0.0
	Module 2			85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4	35.7	35.7	35.7	0.0	0.0
	Module 3			42.8	42.8	42.8	42.8	30.3	30.3	30.3	30.3	8.9	8.9	8.9	8.9	8.9
	Module 4			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4	35.7	35.7	35.7	8.9	8.9
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
1	Entertainment (Large)	Studio	S-1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
	Entertainment (Small)	Studio	S-12	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
2	Studio	Studio	S-13	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
	Studio	Studio	S-21	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
	Studio	Studio	S-24	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
	Studio	Studio	S-25	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
3	Entertainment (Large)	Studio Office	S-5	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5					
	Studio	Studio	S-9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.5
4	Parking Structure (Medium)	Parking	P-2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5			
TOTALS																
	Module 1			2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.0	1.0	1.0	0.0	0.0
	Module 2			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	1.9	1.9	1.9	0.0	0.0
	Module 3			2.2	2.2	2.2	2.2	1.6	1.6	1.6	1.6	0.5	0.5	0.5	0.5	0.5
	Module 4			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	1.9	1.9	1.9	0.5	0.5
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
1	Entertainment (Large)	Studio	S-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Entertainment (Small)	Studio	S-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio	Studio	S-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3	Entertainment (Large)	Studio Office	S-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Studio	Studio	S-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
TOTALS																
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														

SO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
1	Entertainment (Large)	Studio	S-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Entertainment (Small)	Studio	S-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio	Studio	S-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3	Entertainment (Large)	Studio Office	S-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Studio	Studio	S-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

D.1-1D Summary of Daily and Annual Onsite Mass Emissions - Module D
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone D

TOTALS																
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														
	VOC															
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
1	Entertainment (Large)	Studio	S-1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
	Entertainment (Small)	Studio	S-12	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
2	Studio	Studio	S-13	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
	Studio	Studio	S-21	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
	Studio	Studio	S-24	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
	Studio	Studio	S-25	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
3	Entertainment (Large)	Studio Office	S-5	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2					
	Studio	Studio	S-9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2	1.2
4	Parking Structure (Medium)	Parking	P-2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2			
TOTALS																
	Module 1			5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	2.4	2.4	2.4	0.0	0.0
	Module 2			10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	4.7	4.7	4.7	0.0	0.0
	Module 3			5.5	5.5	5.5	5.5	3.9	3.9	3.9	3.9	1.2	1.2	1.2	1.2	1.2
	Module 4			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	4.7	4.7	4.7	1.2	1.2
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														
	Combustion $PM_{2.5}$															
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
1	Entertainment (Large)	Studio	S-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
	Entertainment (Small)	Studio	S-12	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
2	Studio	Studio	S-13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
	Studio	Studio	S-21	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
	Studio	Studio	S-24	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
	Studio	Studio	S-25	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
3	Entertainment (Large)	Studio Office	S-5	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4					
	Studio	Studio	S-9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4
4	Parking Structure (Medium)	Parking	P-2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4			
TOTALS																
	Module 1			2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	0.9	0.9	0.9	0.0	0.0
	Module 2			4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	1.8	1.8	1.8	0.0	0.0
	Module 3			2.1	2.1	2.1	2.1	1.5	1.5	1.5	1.5	0.4	0.4	0.4	0.4	0.4
	Module 4			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	1.8	1.8	1.8	0.4	0.4
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														
	Fugitive $PM_{2.5}$															
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
1	Entertainment (Large)	Studio	S-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Entertainment (Small)	Studio	S-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	Studio	Studio	S-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Studio	Studio	S-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3	Entertainment (Large)	Studio Office	S-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Studio	Studio	S-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Medium)	Parking	P-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
TOTALS																
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														
	CO_2															
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
1	Entertainment (Large)	Studio	S-1	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	1,870.6	872.9	872.9	872.9		
	Entertainment (Small)	Studio	S-12	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
2	Studio	Studio	S-13	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
	Studio	Studio	S-21	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
	Studio	Studio	S-24	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
	Studio	Studio	S-25	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
3	Entertainment (Large)	Studio Office	S-5	1,868.9	1,868.9	1,868.9	1,868.9	876.2	876.2	876.2	876.2					
	Studio	Studio	S-9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9	872.9
4	Parking Structure (Medium)	Parking	P-2	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9			
TOTALS																
	Module 1			3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	3,736.9	1,745.7	1,745.7	1,745.7	0.0	0.0
	Module 2			7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	3,491.4	3,491.4	3,491.4	0.0	0.0
	Module 3			3,737.8	3,737.8	3,737.8	3,737.8	2,745.1	2,745.1	2,745.1	2,745.1	872.9	872.9	872.9	872.9	872.9
	Module 4			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	7,465.4	3,491.4	3,491.4	3,491.4	872.9	872.9
	Annual Emissions (lbs)	Year 1														
		Year 2														
		Year 3														
		Year 4														
		Year 5														
		Year 6														
		Year 7														
		Year 8														
		Year 9														
		Year 10														

D.1-1E Summary of Daily and Annual Onsite Mass Emissions - Module E
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone E

CO			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	24.6	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2	Parking Structure	Parking	P-9	NA	39.9	39.9	39.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
3	Parking Structure	Parking	P-13	NA	39.9	39.9	39.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
4	Parking Structure (Large)	Parking	P-3	24.5	40.0	40.0	40.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
5	Parking Structure (Medium)	Parking	P-5	24.9	39.8	39.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
6	Entertainment Use	Entertainment	T-8	NA	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS															
	Module 1			24.6	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 2			0.0	39.9	39.9	39.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 3			0.0	39.9	39.9	39.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 4			24.5	40.0	40.0	40.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 5			24.9	39.8	39.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 6			0.0	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Max Daily Emission Rate by Month (lbs/day)			24.9	40.0	40.0	40.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Annual Emissions (lbs)	Year 1		3,558											
		Year 2		3,634											
		Year 3		2,376											
		Year 4		3,861											
		Year 5		2,376											
		Year 6		4,139											
		Year 7		2,376											
		Year 8		3,454											
		Year 9		2,262											
		Year 10		3,288											
		Year 11		1,833											

NO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	62.2	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
2	Parking Structure	Parking	P-9	NA	82.7	82.7	82.7	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
3	Parking Structure	Parking	P-13	NA	82.5	82.5	82.5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
4	Parking Structure (Large)	Parking	P-3	61.9	83.0	83.0	83.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
5	Parking Structure (Medium)	Parking	P-5	63.3	82.3	82.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
6	Entertainment Use	Entertainment	T-8	NA	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS															
	Module 1			62.2	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 2			0.0	82.7	82.7	82.7	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 3			0.0	82.5	82.5	82.5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 4			61.9	83.0	83.0	83.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 5			63.3	82.3	82.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 6			0.0	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Max Daily Emission Rate by Month (lbs/day)			63.3	83.0	83.0	83.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Annual Emissions (lbs)	Year 1		8,082											
		Year 2		7,954											
		Year 3		5,647											
		Year 4		8,496											
		Year 5		5,647											
		Year 6		9,205											
		Year 7		5,647											
		Year 8		7,844											
		Year 9		5,373											
		Year 10		7,398											
		Year 11		4,349											

Combustion PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2	Parking Structure	Parking	P-9	NA	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
3	Parking Structure	Parking	P-13	NA	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
4	Parking Structure (Large)	Parking	P-3	3.4	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
5	Parking Structure (Medium)	Parking	P-5	3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
6	Entertainment Use	Entertainment	T-8	NA	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS															
	Module 1			3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 2			0.0	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 3			0.0	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 4			3.4	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 5			3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 6			0.0	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Max Daily Emission Rate by Month (lbs/day)			3.4	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Annual Emissions (lbs)	Year 1		420											
		Year 2		410											
		Year 3		295											
		Year 4		438											
		Year 5		295											
		Year 6		476											
		Year 7		295											
		Year 8		408											
		Year 9		281											
		Year 10		382											
		Year 11		228											

Fugitive PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-9	NA	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Parking Structure	Parking	P-13	NA	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Large)	Parking	P-3	0.0	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Parking Structure (Medium)	Parking	P-5	0.3	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment Use	Entertainment	T-8	NA	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
	Module 1			0.1	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.3	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.3	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		129											
		Year 2		217											
		Year 3		0											
		Year 4		213											
		Year 5		0											
		Year 6		215											
		Year 7		0											
		Year 8		132											
		Year 9		0											
		Year 10		128											
		Year 11		0											

SO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-9	NA	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Parking Structure	Parking	P-13	NA	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Large)	Parking	P-3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Parking Structure (Medium)	Parking	P-5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment Use	Entertainment	T-8	NA	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
	Module 1			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

D.1-1E Summary of Daily and Annual Onsite Mass Emissions - Module E
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Module 3			0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 5			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 6			0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1		7.5												
	Year 2		7.3												
	Year 3		5.4												
	Year 4		7.7												
	Year 5		5.4												
	Year 6		8.4												
	Year 7		5.4												
	Year 8		7.3												
	Year 9		5.2												
	Year 10		6.9												
	Year 11		4.3												
VOC			**Construction Months**												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	5.6	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	Parking Structure	Parking	P-9	NA	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
3	Parking Structure	Parking	P-13	NA	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
4	Parking Structure (Large)	Parking	P-3	5.6	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
5	Parking Structure (Medium)	Parking	P-5	5.7	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
6	Entertainment Use	Entertainment	T-8	NA	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS																
Module 1			5.6	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Module 2			0.0	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Module 3			0.0	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Module 4			5.6	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Module 5			5.7	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Module 6			0.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Max Daily Emission Rate by Month (lbs/day)			5.7	10.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Annual Emissions (lbs)	Year 1		992												
	Year 2		991												
	Year 3		723												
	Year 4		1,059												
	Year 5		723												
	Year 6		1,122												
	Year 7		723												
	Year 8		961												
	Year 9		689												
	Year 10		931												
	Year 11		560												
Combustion $PM_{2.5}$			**Construction Months**												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	3.1	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	Parking Structure	Parking	P-9	NA	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	Parking Structure	Parking	P-13	NA	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4	Parking Structure (Large)	Parking	P-3	3.1	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5	Parking Structure (Medium)	Parking	P-5	3.2	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
6	Entertainment Use	Entertainment	T-8	NA	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS																
Module 1			3.1	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Module 2			0.0	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Module 3			0.0	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Module 4			3.1	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Module 5			3.2	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Module 6			0.0	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max Daily Emission Rate by Month (lbs/day)			3.2	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Annual Emissions (lbs)	Year 1		387												
	Year 2		378												
	Year 3		271												
	Year 4		403												
	Year 5		271												
	Year 6		438												
	Year 7		271												
	Year 8		376												
	Year 9		258												
	Year 10		352												
	Year 11		210												
Fugitive $PM_{2.5}$			**Construction Months**												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-9	NA	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Parking Structure	Parking	P-13	NA	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Parking Structure (Large)	Parking	P-3	0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Parking Structure (Medium)	Parking	P-5	0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment Use	Entertainment	T-8	NA	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
Module 1			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 2			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 3			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 5			0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 6			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1		27.0												
	Year 2		45.5												
	Year 3		0.0												
	Year 4		44.8												
	Year 5		0.0												
	Year 6		45.0												
	Year 7		0.0												
	Year 8		27.8												
	Year 9		0.0												
	Year 10		26.9												
	Year 11		0.0												
CO_2			**Construction Months**												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Large)	Amphitheatre	C-3	5,877.2	6,859.7	6,859.7	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
2	Parking Structure	Parking	P-9	NA	6,943.6	6,943.6	6,943.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
3	Parking Structure	Parking	P-13	NA	6,922.6	6,922.6	6,922.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
4	Parking Structure (Large)	Parking	P-3	5,852.0	6,973.3	6,973.3	6,973.3	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
5	Parking Structure (Medium)	Parking	P-5	5,993.4	6,909.1	6,909.1	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
6	Entertainment Use	Entertainment	T-8	NA	6,853.0	6,853.0	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
TOTALS																
Module 1			5,877.2	6,859.7	6,859.7	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
Module 2			0.0	6,943.6	6,943.6	6,943.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Module 3			0.0	6,922.6	6,922.6	6,922.6	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Module 4			5,852.0	6,973.3	6,973.3	6,973.3	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Module 5			5,993.4	6,909.1	6,909.1	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Module 6			0.0	6,853.0	6,853.0	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
Max Daily Emission Rate by Month (lbs/day)			5,993.4	6,973.3	6,973.3	6,973.3	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
Annual Emissions (lbs)	Year 1		701,620												
	Year 2		685,867												
	Year 3		493,609												
	Year 4		729,016												
	Year 5		493,609												
	Year 6		796,177												
	Year 7		493,609												
	Year 8		683,337												
	Year 9		471,678												
	Year 10		636,933												
	Year 11		386,236												

D.1-1E Summary of Daily and Annual Onsite Mass Emissions - Module E
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone E

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22		23
1	Entertainment (Large)	Amphitheatre	C-3	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8			
2	Parking Structure	Parking	P-9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	
3	Parking Structure	Parking	P-13	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	
4	Parking Structure (Large)	Parking	P-3	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	
5	Parking Structure (Medium)	Parking	P-5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8			
6	Entertainment Use	Entertainment	T-8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
TOTALS															
	Module 1			9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	0.0	0.0	0.0
	Module 2			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	0.0
	Module 3			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	0.0
	Module 4			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	0.0
	Module 5			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	0.0	0.0	0.0
	Module 6			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Max Daily Emission Rate by Month (lbs/day)			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													
		Year 9													
		Year 10													
		Year 11													

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22		23
1	Entertainment (Large)	Amphitheatre	C-3	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9			
2	Parking Structure	Parking	P-9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	
3	Parking Structure	Parking	P-13	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	
4	Parking Structure (Large)	Parking	P-3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	
5	Parking Structure (Medium)	Parking	P-5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9			
6	Entertainment Use	Entertainment	T-8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
TOTALS															
	Module 1			21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	0.0	0.0	0.0
	Module 2			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	0.0
	Module 3			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	0.0
	Module 4			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	0.0
	Module 5			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	0.0	0.0	0.0
	Module 6			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Max Daily Emission Rate by Month (lbs/day)			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													
		Year 9													
		Year 10													
		Year 11													

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22		23
1	Entertainment (Large)	Amphitheatre	C-3	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5			
2	Parking Structure	Parking	P-9	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	
3	Parking Structure	Parking	P-13	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	
4	Parking Structure (Large)	Parking	P-3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	
5	Parking Structure (Medium)	Parking	P-5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5			
6	Entertainment Use	Entertainment	T-8	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
TOTALS															
	Module 1			1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.0	0.0	0.0
	Module 2			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.0
	Module 3			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.0
	Module 4			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.0
	Module 5			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.0	0.0	0.0
	Module 6			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Max Daily Emission Rate by Month (lbs/day)			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													
		Year 9													
		Year 10													
		Year 11													

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22		23
1	Entertainment (Large)	Amphitheatre	C-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	Parking Structure	Parking	P-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	Parking Structure	Parking	P-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	Parking Structure (Large)	Parking	P-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	Parking Structure (Medium)	Parking	P-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
6	Entertainment Use	Entertainment	T-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1													
		Year 2													
		Year 3													
		Year 4													
		Year 5													
		Year 6													
		Year 7													
		Year 8													
		Year 9													
		Year 10													
		Year 11													

SO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22		23
1	Entertainment (Large)	Amphitheatre	C-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	Parking Structure	Parking	P-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	Parking Structure	Parking	P-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	Parking Structure (Large)	Parking	P-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	Parking Structure (Medium)	Parking	P-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
6	Entertainment Use	Entertainment	T-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

D.1-1E Summary of Daily and Annual Onsite Mass Emissions - Module E
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone E

Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1													
	Year 2													
	Year 3													
	Year 4													
	Year 5													
	Year 6													
	Year 7													
	Year 8													
	Year 9													
	Year 10													
	Year 11													
VOC														
Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**		**23**
1 Entertainment (Large)	Amphitheatre	C-3	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2			
2 Parking Structure	Parking	P-9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	
3 Parking Structure	Parking	P-13	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	
4 Parking Structure (Large)	Parking	P-3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	
5 Parking Structure (Medium)	Parking	P-5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2			
6 Entertainment Use	Entertainment	T-8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
TOTALS														
Module 1			2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	0.0	0.0	0.0
Module 2			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	0.0
Module 3			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	0.0
Module 4			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	0.0
Module 5			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	0.0	0.0	0.0
Module 6			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
Max Daily Emission Rate by Month (lbs/day)			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2
Annual Emissions (lbs)	Year 1													
	Year 2													
	Year 3													
	Year 4													
	Year 5													
	Year 6													
	Year 7													
	Year 8													
	Year 9													
	Year 10													
	Year 11													
Combustion $PM_{2.5}$														
Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**		**23**
1 Entertainment (Large)	Amphitheatre	C-3	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4			
2 Parking Structure	Parking	P-9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	
3 Parking Structure	Parking	P-13	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	
4 Parking Structure (Large)	Parking	P-3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	
5 Parking Structure (Medium)	Parking	P-5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4			
6 Entertainment Use	Entertainment	T-8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
TOTALS														
Module 1			1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.0	0.0	0.0
Module 2			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.0
Module 3			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.0
Module 4			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.0
Module 5			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.0	0.0	0.0
Module 6			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
Max Daily Emission Rate by Month (lbs/day)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4
Annual Emissions (lbs)	Year 1													
	Year 2													
	Year 3													
	Year 4													
	Year 5													
	Year 6													
	Year 7													
	Year 8													
	Year 9													
	Year 10													
	Year 11													
Fugitive $PM_{2.5}$														
Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**		**23**
1 Entertainment (Large)	Amphitheatre	C-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2 Parking Structure	Parking	P-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3 Parking Structure	Parking	P-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4 Parking Structure (Large)	Parking	P-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5 Parking Structure (Medium)	Parking	P-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
6 Entertainment Use	Entertainment	T-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS														
Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1													
	Year 2													
	Year 3													
	Year 4													
	Year 5													
	Year 6													
	Year 7													
	Year 8													
	Year 9													
	Year 10													
	Year 11													
CO_2														
Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**		**23**
1 Entertainment (Large)	Amphitheatre	C-3	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9			
2 Parking Structure	Parking	P-9	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	
3 Parking Structure	Parking	P-13	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	
4 Parking Structure (Large)	Parking	P-3	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	
5 Parking Structure (Medium)	Parking	P-5	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9			
6 Entertainment Use	Entertainment	T-8	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9
TOTALS														
Module 1			1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9	0.0	0.0	0.0
Module 2			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	0.0
Module 3			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	0.0
Module 4			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	0.0
Module 5			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	0.0	0.0	0.0
Module 6			1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9
Max Daily Emission Rate by Month (lbs/day)			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9
Annual Emissions (lbs)	Year 1													
	Year 2													
	Year 3													
	Year 4													
	Year 5													
	Year 6													
	Year 7													
	Year 8													
	Year 9													
	Year 10													
	Year 11													

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone F

	CO			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2	Entertainment (Large)	Entertainment Retail	C-1					9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Small)	Entertainment Retail	C-4	25.0	40.1	40.1	40.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Hotel	Hotel	H-1/P-12					13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
3	Amphitheatre	Amphitheatre	S-16	24.6	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS																
	Module 1			24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 2			25.0	40.1	40.1	40.1	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4
	Module 3			24.6	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Max Daily Emission Rate by Month (lbs/day)			25.0	40.1	40.1	40.1	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4
	Total Monthly Emissions (lbs/month)			716.6		882.3	882.3	690.8	690.8	690.8	690.8	690.8	690.8	690.8	690.8	690.8
	Annual Emissions (lbs)	Year 1		2,906.7												
		Year 2		4,148.7												
		Year 3		8,289.2												
		Year 4		4,384.9												
		Year 5		2,373.4												
		Year 6		1,125.8												

	NO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	62.1	41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
2	Entertainment (Large)	Entertainment Retail	C-1					21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Small)	Entertainment Retail	C-4	63.8	83.2	83.2	83.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Hotel	Hotel	H-1/P-12					30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
3	Amphitheatre	Amphitheatre	S-16	62.3	41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS																
	Module 1			62.1	41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 2			63.8	83.2	83.2	83.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2
	Module 3			62.3	41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Max Daily Emission Rate by Month (lbs/day)			63.8	83.2	83.2	83.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2
	Total Monthly Emissions (lbs/month)			1,616.5		1,829.8	1,829.8	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4
	Annual Emissions (lbs)	Year 1		6,745.5												
		Year 2		9,237.0												
		Year 3		19,324.6												
		Year 4		10,058.5												
		Year 5		5,638.1												
		Year 6		2,667.4												

	Combustion PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2	Entertainment (Large)	Entertainment Retail	C-1					1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Small)	Entertainment Retail	C-4	3.5	4.2	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Hotel	Hotel	H-1/P-12					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
3	Amphitheatre	Amphitheatre	S-16	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS																
	Module 1			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 2			3.5	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	Module 3			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Max Daily Emission Rate by Month (lbs/day)			3.5	4.2	4.2	4.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	Total Monthly Emissions (lbs/month)			84.5		93.0	93.0	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1
	Annual Emissions (lbs)	Year 1		351.7												
		Year 2		477.7												
		Year 3		1,033.8												
		Year 4		539.7												
		Year 5		294.2												
		Year 6		140.9												

	Fugitive PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment Retail	C-1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment Retail	C-4	0.5	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hotel	Hotel	H-1/P-12					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Amphitheatre	Amphitheatre	S-16	0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.5	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.5	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Monthly Emissions (lbs/month)			48.2		86.2	86.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		67.3												
		Year 2		220.7												
		Year 3		0.0												
		Year 4		65.6												
		Year 5		0.0												
		Year 6		0.0												

	SO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment Retail	C-1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment Retail	C-4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hotel	Hotel	H-1/P-12					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Amphitheatre	Amphitheatre	S-16	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS																
	Module 1			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Module 3			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Total Monthly Emissions (lbs/month)			1.5		1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	Annual Emissions (lbs)	Year 1		6.6												
		Year 2		8.5												
		Year 3		18.9												
		Year 4		10.0												
		Year 5		5.4												
		Year 6		2.7												

	VOC			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Parking Structure (Medium)	Parking	P-4	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	Entertainment (Large)	Entertainment Retail	C-1					2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Small)	Entertainment Retail	C-4	5.7	10.1	10.1	10.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Hotel	Hotel	H-1/P-12					4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
3	Amphitheatre	Amphitheatre	S-16	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS																
	Module 1			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 2			5.7	10.1	10.1	10.1	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
	Module 3			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Max Daily Emission Rate by Month (lbs/day)			5.7	10.1	10.1	10.1	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone F

Annual Emissions (lbs)	Year 1	829
	Year 2	1,124.7
	Year 3	2,533.6
	Year 4	1,289.0
	Year 5	722.2
	Year 6	345.5

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12
1	Parking Structure (Medium)	Parking	P-4	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	Entertainment (Large)	Entertainment Retail	C-1	3.3	3.9	3.9	3.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Small)	Entertainment Retail	C-4					1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Hotel	Hotel	H-1/P-12					1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
3	Amphitheatre	Amphitheatre	S-16	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS															
	Module 1			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 2			3.3	3.9	3.9	3.9	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
	Module 3			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Max Daily Emission Rate by Month (lbs/day)			3.3	3.9	3.9	3.9	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6

Annual Emissions (lbs)	Year 1	324
	Year 2	440.6
	Year 3	951.2
	Year 4	496.8
	Year 5	270.7
	Year 6	129.6

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12
1	Parking Structure (Medium)	Parking	P-4	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment Retail	C-1	0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment Retail	C-4					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hotel	Hotel	H-1/P-12					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Amphitheatre	Amphitheatre	S-16	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
	Module 1			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Annual Emissions (lbs)	Year 1	14
	Year 2	46.3
	Year 3	0.0
	Year 4	13.8
	Year 5	0.0
	Year 6	0.0

CO_2

	Construction Prototype	Land Use	Activity ID	Construction Months 1	2	3	4	5	6	7	8	9	10	11	12
1	Parking Structure (Medium)	Parking	P-4	5,874.8	3,448.4	3,448.4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
2	Entertainment (Large)	Entertainment Retail	C-1	6,039.8	6,994.6	6,994.6	6,994.6	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0
	Entertainment (Small)	Entertainment Retail	C-4					1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
	Hotel	Hotel	H-1/P-12					2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6
3	Amphitheatre	Amphitheatre	S-16	5,886.1	3,437.1	3,437.1	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
TOTALS															
	Module 1			5,874.8	3,448.4	3,448.4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Module 2			6,039.8	6,994.6	6,994.6	6,994.6	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0
	Module 3			5,886.1	3,437.1	3,437.1	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
	Max Daily Emission Rate by Month (lbs/day)			6,039.8	6,994.6	6,994.6	6,994.6	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0

Annual Emissions (lbs)	Year 1	589,760
	Year 2	799,418
	Year 3	1,699,368
	Year 4	896,751
	Year 5	492,719
	Year 6	241,348

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone F

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8					
2	Entertainment (Large)	Entertainment Retail	C-1	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8					
	Entertainment (Small)	Entertainment Retail	C-4	9.0	9.0	9.0	9.0	9.0	9.0								
	Hotel	Hotel	H-1/P-12	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	3.8	3.8	3.8	3.8	3.8
3	Amphitheatre	Amphitheatre	S-16	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8				
TOTALS																	
	Module 1			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	0.0	0.0	0.0	0.0	0.0
	Module 2			31.4	31.4	31.4	31.4	31.4	31.4	13.4	17.2	17.2	3.8	3.8	3.8	3.8	3.8
	Module 3			9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			31.4	31.4	31.4	31.4	31.4	31.4	13.4	17.2	17.2	3.8	3.8	3.8	3.8	3.8
	Total Monthly Emissions (lbs/month)			690.8	690.8	690.8	690.8	690.8	690.8	295.1	378.5	378.5	83.7	83.6	83.6	83.6	
	Annual Emissions (lbs)	Year 1															
		Year 2															
		Year 3															
		Year 4															
		Year 5															
		Year 6															

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9					
2	Entertainment (Large)	Entertainment Retail	C-1	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9					
	Entertainment (Small)	Entertainment Retail	C-4	21.4	21.4	21.4	21.4	21.4	21.4								
	Hotel	Hotel	H-1/P-12	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	8.9	8.9	8.9	8.9	8.9
3	Amphitheatre	Amphitheatre	S-16	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0				
TOTALS																	
	Module 1			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	0.0	0.0	0.0	0.0	0.0
	Module 2			73.2	73.2	73.2	73.2	73.2	73.2	30.5	39.4	39.4	8.9	8.9	8.9	8.9	8.9
	Module 3			21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0	9.0	9.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			73.2	73.2	73.2	73.2	73.2	73.2	30.5	39.4	39.4	9.0	8.9	8.9	8.9	8.9
	Total Monthly Emissions (lbs/month)			1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	1,610.4	670.3	866.6	866.6	197.0	196.6	196.6	196.6	
	Annual Emissions (lbs)	Year 1															
		Year 2															
		Year 3															
		Year 4															
		Year 5															
		Year 6															

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5					
2	Entertainment (Large)	Entertainment Retail	C-1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5					
	Entertainment (Small)	Entertainment Retail	C-4	1.1	1.1	1.1	1.1	1.1	1.1								
	Hotel	Hotel	H-1/P-12	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.5	0.5	0.5	0.5	0.5
3	Amphitheatre	Amphitheatre	S-16	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5				
TOTALS																	
	Module 1			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.0	0.0	0.0	0.0	0.0
	Module 2			3.9	3.9	3.9	3.9	3.9	3.9	1.7	2.2	2.2	0.5	0.5	0.5	0.5	0.5
	Module 3			1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			3.9	3.9	3.9	3.9	3.9	3.9	1.7	2.2	2.2	0.5	0.5	0.5	0.5	0.5
	Total Monthly Emissions (lbs/month)			86.1	86.1	86.1	86.1	86.1	86.1	37.1	47.8	47.8	10.7	10.7	10.7	10.7	
	Annual Emissions (lbs)	Year 1															
		Year 2															
		Year 3															
		Year 4															
		Year 5															
		Year 6															

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
2	Entertainment (Large)	Entertainment Retail	C-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Entertainment (Small)	Entertainment Retail	C-4	0.0	0.0	0.0	0.0	0.0	0.0								
	Hotel	Hotel	H-1/P-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Amphitheatre	Amphitheatre	S-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
TOTALS																	
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Monthly Emissions (lbs/month)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Annual Emissions (lbs)	Year 1															
		Year 2															
		Year 3															
		Year 4															
		Year 5															
		Year 6															

SO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
2	Entertainment (Large)	Entertainment Retail	C-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Entertainment (Small)	Entertainment Retail	C-4	0.0	0.0	0.0	0.0	0.0	0.0								
	Hotel	Hotel	H-1/P-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Amphitheatre	Amphitheatre	S-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
TOTALS																	
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Monthly Emissions (lbs/month)			1.6	1.6	1.6	1.6	1.6	1.6	0.7	0.9	0.9	0.2	0.2	0.2	0.2	
	Annual Emissions (lbs)	Year 1															
		Year 2															
		Year 3															
		Year 4															
		Year 5															
		Year 6															

VOC

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	Parking Structure (Medium)	Parking	P-4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2					
2	Entertainment (Large)	Entertainment Retail	C-1	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2					
	Entertainment (Small)	Entertainment Retail	C-4	2.7	2.7	2.7	2.7	2.7	2.7								
	Hotel	Hotel	H-1/P-12	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	1.2	1.2	1.2	1.2	1.2
3	Amphitheatre	Amphitheatre	S-16	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2				
TOTALS																	
	Module 1			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	0.0	0.0	0.0	0.0	0.0
	Module 2			9.6	9.6	9.6	9.6	9.6	9.6	4.1	5.3	5.3	1.2	1.2	1.2	1.2	1.2
	Module 3			2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			9.6	9.6	9.6	9.6	9.6	9.6	4.1	5.3	5.3	1.2	1.2	1.2	1.2	1.2

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone F

	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
	Combustion $PM_{2.5}$																	
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**		
1	Parking Structure (Medium)	Parking	P-4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4						
2	Entertainment (Large)	Entertainment Retail	C-1	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4						
	Entertainment (Small)	Entertainment Retail	C-4	1.0	1.0	1.0	1.0	1.0	1.0									
	Hotel	Hotel	H-1/P-12	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.4	0.4	0.4	0.4	0.4	
3	Amphitheatre	Amphitheatre	S-16	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4					
TOTALS																		
	Module 1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.0	0.0	0.0	0.0	0.0	
	Module 2			3.6	3.6	3.6	3.6	3.6	3.6	1.6	2.0	2.0	0.4	0.4	0.4	0.4	0.4	
	Module 3			1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	
	Max Daily Emission Rate by Month (lbs/day)			3.6	3.6	3.6	3.6	3.6	3.6	1.6	2.0	2.0	0.4	0.4	0.4	0.4	0.4	
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
	Fugitive $PM_{2.5}$																	
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**		
1	Parking Structure (Medium)	Parking	P-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	Entertainment (Large)	Entertainment Retail	C-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment (Small)	Entertainment Retail	C-4	0.0	0.0	0.0	0.0	0.0	0.0									
	Hotel	Hotel	H-1/P-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	Amphitheatre	Amphitheatre	S-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
TOTALS																		
	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																
	CO_2																	
	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**		
1	Parking Structure (Medium)	Parking	P-4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9						
2	Entertainment (Large)	Entertainment Retail	C-1	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	872.9	872.9	872.9						
	Entertainment (Small)	Entertainment Retail	C-4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4									
	Hotel	Hotel	H-1/P-12	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	874.5	874.5	874.5	874.5	874.5	
3	Amphitheatre	Amphitheatre	S-16	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	876.2	876.2	876.2	876.2					
TOTALS																		
	Module 1			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	0.0	0.0	0.0	0.0	0.0	
	Module 2			6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	2,702.6	3,575.4	3,575.4	874.5	874.5	874.5	874.5	874.5	
	Module 3			1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	876.2	876.2	876.2	876.2	0.0	0.0	0.0	0.0	
	Max Daily Emission Rate by Month (lbs/day)			6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	6,437.0	2,702.6	3,575.4	3,575.4	876.2	874.5	874.5	874.5	874.5	
	Annual Emissions (lbs)	Year 1														19,239.9		
		Year 2																
		Year 3																
		Year 4																
		Year 5																
		Year 6																

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone G

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	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Small)	Entertainment	T-2	24.6	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
2	Entertainment (Large)	Entertainment	T-4	24.7	39.8	39.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Large)	Entertainment	T-5				9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment	Entertainment	T-9		39.5	39.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Entertainment (Small)	Entertainment	T-1	19.9	19.9	19.9	3.8	3.8	3.8	3.8						
3	Entertainment (Small)	Entertainment	T-6	NA	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
4	Entertainment (Small)	Entertainment	T-7	24.5	20.0	20.0	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
5	Entertainment (Large)	Entertainment	T-3/3b	24.7	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
6	Entertainment (Large)	Entertainment	T-11	NA	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
7	Hotel	Hotel	H-2/P-14	NA	40.0	40.0	40.0	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
TOTALS	Module 1			24.6	19.8	19.8	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 2			44.6	99.2	99.2	30.8	30.8	30.8	30.8	27.0	27.0	27.0	27.0	27.0	27.0
	Module 3			0.0	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 4			24.5	20.0	20.0	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 5			24.7	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 6			0.0	39.7	39.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 7			0.0	40.0	40.0	40.0	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
	Max Daily Emission Rate by Month (lbs/day)			44.6	99.2	99.2	40.0	30.8	30.8	30.8	27.0	27.0	27.0	27.0	27.0	27.0
	Annual Emissions (lbs)	Year 1		2,904.2												
		Year 2		2,031.9												
		Year 3		9,525.6												
		Year 4		5,814.7												
		Year 5		2,574.2												
		Year 6		2,145.3												
		Year 7		3,276.1												
		Year 8		2,374.1												
		Year 9		3,104.2												
		Year 10		2,374.1												
		Year 11		2,830.9												
		Year 12		2,375.4												
		Year 13		3,425.1												
		Year 14		3,541.1												
		Year 15		1809.7365												

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	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Small)	Entertainment	T-2	62.2	40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
2	Entertainment (Large)	Entertainment	T-4	62.7	82.1	82.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Large)	Entertainment	T-5				21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment	Entertainment	T-9		81.3	81.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Entertainment (Small)	Entertainment	T-1	40.9	40.9	40.9	8.9	8.9	8.9	8.9						
3	Entertainment (Small)	Entertainment	T-6	NA	41.2	41.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
4	Entertainment (Small)	Entertainment	T-7	62.0	41.4	41.4	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
5	Entertainment (Large)	Entertainment	T-3/3b	62.7	82.0	82.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
6	Entertainment (Large)	Entertainment	T-11	NA	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
7	Hotel	Hotel	H-2/P-14	NA	83.0	83.0	83.0	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
TOTALS	Module 1			62.2	40.9	40.9	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 2			103.7	204.4	204.4	73.1	73.1	73.1	73.1	64.2	64.2	64.2	64.2	64.2	64.2
	Module 3			0.0	41.2	41.2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 4			62.0	41.4	41.4	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 5			62.7	82.0	82.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 6			0.0	81.8	81.8	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 7			0.0	83.0	83.0	83.0	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
	Max Daily Emission Rate by Month (lbs/day)			103.7	204.4	204.4	83.0	73.1	73.1	73.1	64.2	64.2	64.2	64.2	64.2	64.2
	Annual Emissions (lbs)	Year 1		6,737.5												
		Year 2		4,822.3												
		Year 3		21,568.6												
		Year 4		13,801.5												
		Year 5		5,904.7												
		Year 6		5,092.8												
		Year 7		7,352.4												
		Year 8		5,640.3												
		Year 9		7,000.4												
		Year 10		5,640.3												
		Year 11		6,306.1												
		Year 12		5,644.7												
		Year 13		7,430.0												
		Year 14		8,044.0												
		Year 15		4138.2145												

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Small)	Entertainment	T-2	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2	Entertainment (Large)	Entertainment	T-4	3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Large)	Entertainment	T-5				1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment	Entertainment	T-9		4.1	4.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Entertainment (Small)	Entertainment	T-1	2.1	2.1	2.1	0.5	0.5	0.5	0.5						
3	Entertainment (Small)	Entertainment	T-6	NA	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
4	Entertainment (Small)	Entertainment	T-7	3.4	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
5	Entertainment (Large)	Entertainment	T-3/3b	3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
6	Entertainment (Large)	Entertainment	T-11	NA	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
7	Hotel	Hotel	H-2/P-14	NA	4.2	4.2	4.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
TOTALS	Module 1			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 2			5.5	10.4	10.4	3.8	3.8	3.8	3.8	3.3	3.3	3.3	3.3	3.3	3.3
	Module 3			0.0	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 4			3.4	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 5			3.4	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 6			0.0	4.2	4.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 7			0.0	4.2	4.2	4.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	Max Daily Emission Rate by Month (lbs/day)			5.5	10.4	10.4	4.2	3.8	3.8	3.8	3.3	3.3	3.3	3.3	3.3	3.3
	Annual Emissions (lbs)	Year 1		351.2												
		Year 2		252.9												
		Year 3		1,120.0												
		Year 4		723.6												
		Year 5		308.2												
		Year 6		266.6												
		Year 7		381.2												
		Year 8		294.3												
		Year 9		365.1												
		Year 10		294.3												
		Year 11		327.4												
		Year 12		294.5												
		Year 13		385.4												
		Year 14		445.1												
		Year 15		228.22146												

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Small)	Entertainment	T-2	0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment	T-4	0.2	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Entertainment	T-5				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment	Entertainment	T-9		3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment	T-1	2.0	2.0	2.0	0.0	0.0	0.0	0.0						
3	Entertainment (Small)	Entertainment	T-6	NA	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Entertainment (Small)	Entertainment	T-7	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.2	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment (Large)	Entertainment	T-11	NA	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Hotel	Hotel	H-2/P-14	NA	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.1	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			2.2	9.7	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.2	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.2	9.7	9.7	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		65.6												
		Year 2		0.0												
		Year 3		344.5												
		Year 4		0.0												
		Year 5		64.7												
		Year 6		0.0												
		Year 7		150.9												
		Year 8		0.0												
		Year 9		130.6												
		Year 10		0.0												
		Year 11		128.0												
		Year 12		0.0												
		Year 13		214.5												
		Year 14		0.0												
		Year 15		0												

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	Construction Prototype	Land Use	Activity ID	Construction Months 1		2	3	4	5	6	7	8	9	10	11	12
1	Entertainment (Small)	Entertainment	T-2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment	T-4	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Entertainment	T-5				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment	Entertainment	T-9		0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment	T-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
3	Entertainment (Small)	Entertainment	T-6	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Entertainment (Small)	Entertainment	T-7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment (Large)	Entertainment	T-11	NA	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Hotel	Hotel	H-2/P-14	NA	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

D.1-1G Summary of Daily and Annual Onsite Mass Emissions - Module G
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone G

TOTALS	Module 1			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Annual Emissions (lbs)	Year 1		6.6													
		Year 2		4.1													
		Year 3		19.4													
		Year 4		12.7													
		Year 5		5.0													
		Year 6		5.0													
		Year 7		7.2													
		Year 8		5.4													
		Year 9		6.6													
		Year 10		5.4													
		Year 11		5.9													
		Year 12		5.4													
		Year 13		6.0													
		Year 14		8.0													
		Year 15		4.174129													

VOC

				Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Small)	Entertainment	T-2	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2	Entertainment (Large)	Entertainment	T-4	5.7	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Large)	Entertainment	T-5				2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment	Entertainment	T-9		9.9	9.9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Entertainment (Small)	Entertainment	T-1	5.0	5.0	5.0	0.0	0.0	0.0	0.0						
3	Entertainment (Small)	Entertainment	T-6	NA	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
4	Entertainment (Small)	Entertainment	T-7	5.6	5.0	5.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
5	Entertainment (Large)	Entertainment	T-3/3b	5.7	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
6	Entertainment (Large)	Entertainment	T-11	NA	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
7	Hotel	Hotel	H-2/P-14	NA	10.1	10.1	10.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
TOTALS	Module 1			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 2			10.6	24.9	24.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
	Module 3			0.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 4			5.6	5.0	5.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 5			5.7	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 6			0.0	10.0	10.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 7			0.0	10.1	10.1	10.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	Max Daily Emission Rate by Month (lbs/day)			10.6	24.9	24.9	10.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
	Annual Emissions (lbs)	Year 1		828.6												
		Year 2		542.2												
		Year 3		2,564.8												
		Year 4		1,670.7												
		Year 5		646.9												
		Year 6		654.3												
		Year 7		895.2												
		Year 8		722.4												
		Year 9		857.2												
		Year 10		722.4												
		Year 11		794.4												
		Year 12		722.8												
		Year 13		824.5												
		Year 14		1,088.8												
		Year 15		558.27958												

Combustion $PM_{2.5}$

				Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Small)	Entertainment	T-2	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	Entertainment (Large)	Entertainment	T-4	3.2	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Large)	Entertainment	T-5				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment	Entertainment	T-9		3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Entertainment (Small)	Entertainment	T-1	1.9	1.9	1.9	0.4	0.4	0.4	0.4						
3	Entertainment (Small)	Entertainment	T-6	NA	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4	Entertainment (Small)	Entertainment	T-7	3.1	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5	Entertainment (Large)	Entertainment	T-3/3b	3.2	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
6	Entertainment (Large)	Entertainment	T-11	NA	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7	Hotel	Hotel	H-2/P-14	NA	3.9	3.9	3.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
TOTALS	Module 1			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 2			5.1	9.6	9.6	3.5	3.5	3.5	3.5	3.1	3.1	3.1	3.1	3.1	3.1
	Module 3			0.0	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 4			3.1	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 5			3.2	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 6			0.0	3.8	3.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 7			0.0	3.9	3.9	3.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	Max Daily Emission Rate by Month (lbs/day)			5.1	9.6	9.6	3.9	3.5	3.5	3.5	3.1	3.1	3.1	3.1	3.1	3.1
	Annual Emissions (lbs)	Year 1		323.3												
		Year 2		232.7												
		Year 3		1,030.9												
		Year 4		665.8												
		Year 5		283.6												
		Year 6		245.3												
		Year 7		350.8												
		Year 8		270.8												
		Year 9		336.4												
		Year 10		270.8												
		Year 11		301.3												
		Year 12		271.0												
		Year 13		354.8												
		Year 14		409.6												
		Year 15		209.99272												

Fugitive $PM_{2.5}$

				Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Small)	Entertainment	T-2	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment (Large)	Entertainment	T-4	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Large)	Entertainment	T-5				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment	Entertainment	T-9		0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Entertainment (Small)	Entertainment	T-1	0.4	0.4	0.4	0.0	0.0	0.0	0.0						
3	Entertainment (Small)	Entertainment	T-6	NA	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Entertainment (Small)	Entertainment	T-7	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Entertainment (Large)	Entertainment	T-11	NA	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Hotel	Hotel	H-2/P-14	NA	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.5	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.5	2.0	2.0	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		13.8												
		Year 2		0.0												
		Year 3		72.3												
		Year 4		0.0												
		Year 5		13.6												
		Year 6		0.0												
		Year 7		31.7												
		Year 8		0.0												
		Year 9		27.4												
		Year 10		0.0												
		Year 11		26.9												
		Year 12		0.0												
		Year 13		45.0												
		Year 14		0.0												
		Year 15		0												

CO_2

				Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Entertainment (Small)	Entertainment	T-2	5,882.1	3,426.3	3,426.3	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
2	Entertainment (Large)	Entertainment	T-4	5,933.3	6,888.7	6,888.7	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
	Entertainment (Large)	Entertainment	T-5				1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
	Entertainment	Entertainment	T-9		6,811.2	6,811.2	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Entertainment (Small)	Entertainment	T-1	3,430.5	3,430.5	3,430.5	872.9	872.9	872.9	872.9						
3	Entertainment (Small)	Entertainment	T-6	NA	3,458.1	3,458.1	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
4	Entertainment (Small)	Entertainment	T-7	5,856.1	3,474.1	3,474.1	3,474.1	3,474.1	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
5	Entertainment (Large)	Entertainment	T-3/3b	5,930.9	6,875.2	6,875.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
6	Entertainment (Large)	Entertainment	T-11	NA	6,857.5	6,857.5	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
7	Hotel	Hotel	H-2/P-14	NA	6,975.3	6,975.3	6,975.3	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6
TOTALS	Module 1			5,882.1	3,426.3	3,426.3	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
	Module 2			9,363.8	17,130.5	17,130.5	6,480.4	6,480.4	6,480.4	6,480.4	5,607.5	5,607.5	5,607.5	5,607.5	5,607.5	5,607.5
	Module 3			0.0	3,458.1	3,458.1	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
	Module 4			5,856.1	3,474.1	3,474.1	3,474.1	3,474.1	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
	Module 5			5,930.9	6,875.2	6,875.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2
	Module 6			0.0	6,857.5	6,857.5	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9
	Module 7			0.0	6,975.3	6,975.3	6,975.3	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6
	Max Daily Emission Rate by Month (lbs/day)			9,363.8	17,130.5	17,130.5	6,975.3	6,480.4	6,480.4	6,480.4	5,607.5	5,607.5	5,607.5	5,607.5	5,607.5	5,607.5
	Annual Emissions (lbs)	Year 1		588,927												
		Year 2		427,648												
		Year 3		1,874,608												
		Year 4		1,222,738												
		Year 5		519,556												
		Year 6		449,191												
		Year 7		638,673												
		Year 8		492,942												
		Year 9		615,404												
		Year 10		492,942												
		Year 11		549,692												
		Year 12		493,386												
		Year 13		643,255												
		Year 14		713,484												
		Year 15		374,245												

D.1-1G Summary of Daily and Annual Onsite Mass Emissions - Module G
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10
Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone G

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	26		27	28	29	30
1	Entertainment (Small)	Entertainment	T-2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8						
2	Entertainment (Large)	Entertainment	T-4	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8						
	Entertainment (Large)	Entertainment	T-5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8						
	Entertainment	Entertainment	T-9	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8								
4	Entertainment (Small)	Entertainment	T-7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
5	Entertainment (Large)	Entertainment	T-3/3b	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8							
6	Entertainment (Large)	Entertainment	T-11	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8						
7	Hotel	Hotel	H-2/P-14	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	3.8	3.8	3.8	3.8						
TOTALS	Module 1			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			27.0	27.0	27.0	27.0	27.0	21.8	21.8	21.8	21.8	7.6	7.6	7.6	7.6	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Module 5			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			27.0	27.0	27.0	27.0	27.0	21.8	21.8	21.8	21.8	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	3.8
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	26		27	28	29	30
1	Entertainment (Small)	Entertainment	T-2	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9						
2	Entertainment (Large)	Entertainment	T-4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9						
	Entertainment (Large)	Entertainment	T-5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9						
	Entertainment	Entertainment	T-9	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9								
4	Entertainment (Small)	Entertainment	T-7	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
5	Entertainment (Large)	Entertainment	T-3/3b	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9							
6	Entertainment (Large)	Entertainment	T-11	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9						
7	Hotel	Hotel	H-2/P-14	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	8.9	8.9	8.9	8.9						
TOTALS	Module 1			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			64.2	64.2	64.2	64.2	64.2	51.7	51.7	51.7	51.7	17.8	17.8	17.8	17.8	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Module 5			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	8.9	8.9	8.9	8.9	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			64.2	64.2	64.2	64.2	64.2	51.7	51.7	51.7	51.7	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	8.9
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	26		27	28	29	30
1	Entertainment (Small)	Entertainment	T-2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5						
2	Entertainment (Large)	Entertainment	T-4	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5						
	Entertainment (Large)	Entertainment	T-5	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5						
	Entertainment	Entertainment	T-9	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5								
4	Entertainment (Small)	Entertainment	T-7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
5	Entertainment (Large)	Entertainment	T-3/3b	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5							
6	Entertainment (Large)	Entertainment	T-11	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5						
7	Hotel	Hotel	H-2/P-14	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.5	0.5	0.5	0.5						
TOTALS	Module 1			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Module 5			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
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		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	26		27	28	29	30
1	Entertainment (Small)	Entertainment	T-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	Entertainment (Large)	Entertainment	T-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment (Large)	Entertainment	T-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment	Entertainment	T-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
4	Entertainment (Small)	Entertainment	T-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
6	Entertainment (Large)	Entertainment	T-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
7	Hotel	Hotel	H-2/P-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

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	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25	26		27	28	29	30
1	Entertainment (Small)	Entertainment	T-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	Entertainment (Large)	Entertainment	T-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment (Large)	Entertainment	T-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment	Entertainment	T-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
4	Entertainment (Small)	Entertainment	T-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
6	Entertainment (Large)	Entertainment	T-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
7	Hotel	Hotel	H-2/P-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone G

TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																						
		Year 2																						
		Year 3																						
		Year 4																						
		Year 5																						
		Year 6																						
		Year 7																						
		Year 8																						
		Year 9																						
		Year 10																						
		Year 11																						
		Year 12																						
		Year 13																						
		Year 14																						
		Year 15																						

VOC

	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**		**27**	**28**	**29**	**30**
1	Entertainment (Small)	Entertainment	T-2	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0						
2	Entertainment (Large)	Entertainment	T-4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0						
	Entertainment (Large)	Entertainment	T-5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0						
	Entertainment	Entertainment	T-9	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2								
4	Entertainment (Small)	Entertainment	T-7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
5	Entertainment (Large)	Entertainment	T-3/3b	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2							
6	Entertainment (Large)	Entertainment	T-11	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0						
7	Hotel	Hotel	H-2/P-14	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	1.2	1.2	1.2	1.2						
TOTALS	Module 1			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			8.2	8.2	8.2	8.2	8.2	6.7	6.7	6.7	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Module 5			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			8.2	8.2	8.2	8.2	8.2	6.7	6.7	6.7	6.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	1.2
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

Combustion $PM_{2.5}$

	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**		**27**	**28**	**29**	**30**
1	Entertainment (Small)	Entertainment	T-2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4						
2	Entertainment (Large)	Entertainment	T-4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4						
	Entertainment (Large)	Entertainment	T-5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4						
	Entertainment	Entertainment	T-9	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4								
4	Entertainment (Small)	Entertainment	T-7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
5	Entertainment (Large)	Entertainment	T-3/3b	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4							
6	Entertainment (Large)	Entertainment	T-11	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4						
7	Hotel	Hotel	H-2/P-14	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.4	0.4	0.4	0.4						
TOTALS	Module 1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			3.1	3.1	3.1	3.1	3.1	2.5	2.5	2.5	2.5	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Module 5			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			3.1	3.1	3.1	3.1	3.1	2.5	2.5	2.5	2.5	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.4
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

Fugitive $PM_{2.5}$

	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**		**27**	**28**	**29**	**30**
1	Entertainment (Small)	Entertainment	T-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	Entertainment (Large)	Entertainment	T-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment (Large)	Entertainment	T-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
	Entertainment	Entertainment	T-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
4	Entertainment (Small)	Entertainment	T-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Entertainment (Large)	Entertainment	T-3/3b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
6	Entertainment (Large)	Entertainment	T-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
7	Hotel	Hotel	H-2/P-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

CO_2

	Construction Prototype	**Land Use**	**Activity ID**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**		**27**	**28**	**29**	**30**
1	Entertainment (Small)	Entertainment	T-2	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9						
2	Entertainment (Large)	Entertainment	T-4	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9						
	Entertainment (Large)	Entertainment	T-5	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9						
	Entertainment	Entertainment	T-9	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	872.9	872.9	872.9										
	Entertainment (Small)	Entertainment	T-1																			
3	Entertainment (Small)	Entertainment	T-6	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9								
4	Entertainment (Small)	Entertainment	T-7	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9
5	Entertainment (Large)	Entertainment	T-3/3b	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9							
6	Entertainment (Large)	Entertainment	T-11	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9						
7	Hotel	Hotel	H-2/P-14	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	874.5	874.5	874.5	874.5						
TOTALS	Module 1			1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			5,607.5	5,607.5	5,607.5	5,607.5	5,607.5	4,610.6	4,610.6	4,610.6	4,610.6	1,745.7	1,745.7	1,745.7	1,745.7	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 4			1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9
	Module 5			1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 6			1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	872.9	872.9	872.9	872.9	0.0	0.0	0.0	0.0	0.0	0.0
	Module 7			2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	2,702.6	874.5	874.5	874.5	874.5	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			5,607.5	5,607.5	5,607.5	5,607.5	5,607.5	4,610.6	4,610.6	4,610.6	4,610.6	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9	872.9	872.9
	Annual Emissions (lbs)	Year 1																				
		Year 2																				
		Year 3																				
		Year 4																				
		Year 5																				
		Year 6																				
		Year 7																				
		Year 8																				
		Year 9																				
		Year 10																				
		Year 11																				
		Year 12																				
		Year 13																				
		Year 14																				
		Year 15																				

D.1-1H Summary of Daily and Annual Onsite Mass Emissions - Module H
NBCUniversal
Los Angeles, California

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone H

	CO			Construction Months[1]	Construction Months											
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	24.5	39.8	39.8	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
2	Parking Structure	Parking	P-11	24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
3	Entertainment Use	Child Care and Studio Office	S-15	24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
TOTALS	Module 1			24.5	39.8	39.8	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Module 2			24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	Module 3			24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Max Daily Emission Rate by Month (lbs/day)			24.5	39.8	39.8	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
	Annual Emissions (lbs)	Year 1		5,540												
		Year 2		3,501												
		Year 3		2,677												
		Year 4		2,790												
		Year 5		1,354												

	NO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	62.0	82.0	82.0	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
2	Parking Structure	Parking	P-11	61.9	41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
3	Entertainment Use	Child Care and Studio Office	S-15	61.9	41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9
TOTALS	Module 1			62.0	82.0	82.0	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Module 2			61.9	41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
	Module 3			61.9	41.0	41.0	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9
	Max Daily Emission Rate by Month (lbs/day)			62.0	82.0	82.0	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
	Annual Emissions (lbs)	Year 1		12,797												
		Year 2		8,311												
		Year 3		6,196												
		Year 4		6,464												
		Year 5		3,214												

	Combustion PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	3.4	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
2	Parking Structure	Parking	P-11	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
3	Entertainment Use	Child Care and Studio Office	S-15	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
TOTALS	Module 1			3.4	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Module 2			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Module 3			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
	Max Daily Emission Rate by Month (lbs/day)			3.4	4.2	4.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	Annual Emissions (lbs)	Year 1		666												
		Year 2		435												
		Year 3		324												
		Year 4		337												
		Year 5		169												

	Fugitive PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment Use	Child Care and Studio Office	S-15	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Monthly Emissions (lbs/month)			44.0		87.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		132												
		Year 2		0												
		Year 3		65												
		Year 4		64												
		Year 5		0												

	SO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment Use	Child Care and Studio Office	S-15	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		12												
		Year 2		8												
		Year 3		6												
		Year 4		6												
		Year 5		3												

	VOC			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	5.6	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2	Parking Structure	Parking	P-11	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
3	Entertainment Use	Child Care and Studio Office	S-15	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
TOTALS	Module 1			5.6	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Module 2			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	Module 3			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Max Daily Emission Rate by Month (lbs/day)			5.6	10.0	10.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Annual Emissions (lbs)	Year 1		1,595												
		Year 2		1,068												
		Year 3		761												
		Year 4		795												
		Year 5		414												

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone H

	Combustion $PM_{2.5}$			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	3.1	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
2	Parking Structure	Parking	P-11	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	Entertainment Use	Child Care	S-15	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
TOTALS	Module 1			3.1	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Module 2			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Module 3			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
	Max Daily Emission Rate by Month (lbs/day)			3.1	3.8	3.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Annual Emissions (lbs)	Year 1		613												
		Year 2		401												
		Year 3		298												
		Year 4		310												
		Year 5		155												

	Fugitive $PM_{2.5}$			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entertainment Use	Child Care and Studio Office	S-15	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		28												
		Year 2		0												
		Year 3		14												
		Year 4		14												
		Year 5		0												

	CO_2			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio Office	Studio Office	S-27/P-10	5,861.0	6,877.9	6,877.9	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8
2	Parking Structure	Parking	P-11	5,851.2	3,453.4	3,453.4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
3	Entertainment Use	Child Care and Studio Office	S-15	5,851.2	3,435.4	3,435.4	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	872.9	872.9
TOTALS	Module 1			5,861.0	6,877.9	6,877.9	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8
	Module 2			5,851.2	3,453.4	3,453.4	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7
	Module 3			5,851.2	3,435.4	3,435.4	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	1,868.0	872.9	872.9
	Max Daily Emission Rate by Month (lbs/day)			5,861.0	6,877.9	6,877.9	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8
	Annual Emissions (lbs)	Year 1		1,113,753												
		Year 2		734,660												
		Year 3		545,805												
		Year 4		567,067												
		Year 5		284,988												

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone H

CO

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
2	Parking Structure	Parking	P-11	9.0	9.0	9.0	9.0	9.0	3.8									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	Module 2			9.0	9.0	9.0	9.0	9.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

NO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9
2	Parking Structure	Parking	P-11	21.4	21.4	21.4	21.4	21.4	8.9									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9
	Module 2			21.4	21.4	21.4	21.4	21.4	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

Combustion PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2	Parking Structure	Parking	P-11	1.1	1.1	1.1	1.1	1.1	0.5									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Module 2			1.1	1.1	1.1	1.1	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

Fugitive PM_{10}

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.0	0.0	0.0	0.0	0.0	0.0									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Monthly Emissions (lbs/month)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

SO_x

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.0	0.0	0.0	0.0	0.0	0.0									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

VOC

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2	Parking Structure	Parking	P-11	2.7	2.7	2.7	2.7	2.7	1.2									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Module 2			2.7	2.7	2.7	2.7	2.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix

Zone H

Combustion $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4
2	Parking Structure	Parking	P-11	1.0	1.0	1.0	1.0	1.0	0.4									
3	Entertainment Use	Child Care	S-15															
TOTALS	Module 1			2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Module 2			1.0	1.0	1.0	1.0	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

Fugitive $PM_{2.5}$

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Parking Structure	Parking	P-11	0.0	0.0	0.0	0.0	0.0	0.0									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

CO_2

	Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	25		26
1	Studio Office	Studio Office	S-27/P-10	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	872.9	872.9	872.9	872.9	872.9	872.9	872.9
2	Parking Structure	Parking	P-11	1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9									
3	Entertainment Use	Child Care and Studio Office	S-15															
TOTALS	Module 1			3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	872.9	872.9	872.9	872.9	872.9	872.9	872.9
	Module 2			1,869.7	1,869.7	1,869.7	1,869.7	1,869.7	872.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 3			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	3,737.8	872.9	872.9	872.9	872.9	872.9	872.9	872.9
	Annual Emissions (lbs)	Year 1																
		Year 2																
		Year 3																
		Year 4																
		Year 5																

Universal Evolution Plan EIR - Alternative 10

Front Lot Construction Assumptions - Scheduling and Equipment Mix
Zone I

	CO			Construction Months[1]	Construction Months											
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
2	Entertainment	Entertainment	T-10	24.5	19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
TOTALS	Module 1			24.5	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Module 2				19.9	19.9	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Max Daily Emission Rate by Month (lbs/day)			24.5	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8
	Annual Emissions (lbs)	Year 1		3,167.6												
		Year 2		2,626.8												

	NO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9
2	Entertainment	Entertainment	T-10	62.0	41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
TOTALS	Module 1			62.0	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9
	Module 2				41.1	41.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
	Max Daily Emission Rate by Month (lbs/day)			62.0	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	9.0	9.0
	Annual Emissions (lbs)	Year 1		7,335.8												
		Year 2		5,966.3												

	Combustion PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
2	Entertainment	Entertainment	T-10	3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
TOTALS	Module 1			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
	Module 2				2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
	Max Daily Emission Rate by Month (lbs/day)			3.4	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
	Annual Emissions (lbs)	Year 1		384.4												
		Year 2		309.6												

	Fugitive PM_{10}			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment	Entertainment	T-10	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2				2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		86.7												
		Year 2		86.2												

	SO_x			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment	Entertainment	T-10	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		7.2												
		Year 2		5.8												

D.1-1I Summary of Daily and Annual Onsite Mass Emissions - Module I
NBCUniversal
Los Angeles, California

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Zone I

	VOC			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
2	Entertainment	Entertainment	T-10	5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
TOTALS	Module 1			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Module 2				5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Max Daily Emission Rate by Month (lbs/day)			5.6	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2
	Annual Emissions (lbs)	Year 1		877.6												
		Year 2		754.2												

	Combustion $PM_{2.5}$			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
2	Entertainment	Entertainment	T-10	3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
TOTALS	Module 1			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
	Module 2				1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
	Max Daily Emission Rate by Month (lbs/day)			3.1	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4
	Annual Emissions (lbs)	Year 1		353.8												
		Year 2		284.9												

	Fugitive $PM_{2.5}$			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entertainment	Entertainment	T-10	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	Module 1			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Module 2				0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Daily Emission Rate by Month (lbs/day)			0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Annual Emissions (lbs)	Year 1		18.2												
		Year 2		18.1												

	CO_2			Construction Months												
	Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Studio	Studio	S-22/S-23		3,474.7	3,474.7	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9
2	Entertainment	Entertainment	T-10	5,856.9	3,449.9	3,449.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	876.2	876.2
TOTALS	Module 1			5,856.9	3,474.7	3,474.7	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	1,867.2	872.9	872.9
	Module 2				3,449.9	3,449.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	876.2	876.2
	Max Daily Emission Rate by Month (lbs/day)			5,856.9	3,474.7	3,474.7	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	1,868.9	876.2	876.2
	Annual Emissions (lbs)	Year 1		648,771.3												
		Year 2		519,274.2												

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Zone J

CO			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TOTALS															
Module 1			0.0	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Max Daily Emission Rate by Month (lbs/day)			0.0	20.0	20.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Annual Emissions (lbs)	Year 1		2,637.7												
	Year 2		1832.6124												

NO_x			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
TOTALS															
Module 1			0.0	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
Max Daily Emission Rate by Month (lbs/day)			0.0	41.4	41.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
Annual Emissions (lbs)	Year 1		6,064.8												
	Year 2		4347.53361												

Combustion PM_{10}			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
TOTALS															
Module 1			0.0	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Max Daily Emission Rate by Month (lbs/day)			0.0	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Annual Emissions (lbs)	Year 1		314.8												
	Year 2		228.152156												

Fugitive PM_{10}			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
Module 1			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1		64.4												
	Year 2		0												

SO_x			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS															
Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1		5.9												
	Year 2		4.26583731												

VOC			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTALS															
Module 1			0.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Max Daily Emission Rate by Month (lbs/day)			0.0	5.0	5.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Annual Emissions (lbs)	Year 1		767.4												
	Year 2		559.86095												

Combustion $PM_{2.5}$			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTALS															
Module 1			0.0	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max Daily Emission Rate by Month (lbs/day)			0.0	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Annual Emissions (lbs)	Year 1		289.7												
	Year 2		209.922006												

Fugitive $PM_{2.5}$			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
TOTALS															
Module 1			0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Max Daily Emission Rate by Month (lbs/day)			0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Annual Emissions (lbs)	Year 1		103.6												
	Year 2		72.072												

CO_2			Construction Months												
Construction Prototype	**Land Use**	**Activity ID**	**1**		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Studio	Support and Studio	PF-1	NA	3,479.6	3,479.6	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
TOTALS															
Module 1			0.0	3,479.6	3,479.6	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
Max Daily Emission Rate by Month (lbs/day)			0.0	3,479.6	3,479.6	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4
Annual Emissions (lbs)	Year 1		525,424.7												
	Year 2		386,088.26												

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Zone J

CO

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8		
TOTALS															
Module 1			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	3.8	3.8	3.8	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

NO_x

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9		
TOTALS															
Module 1			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	8.9	8.9	8.9	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

Combustion PM_{10}

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5		
TOTALS															
Module 1			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

Fugitive PM_{10}

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTALS															
Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

SO_x

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTALS															
Module 1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

VOC

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2		
TOTALS															
Module 1			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.2	1.2	1.2	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

Combustion $PM_{2.5}$

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4		
TOTALS															
Module 1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.4	0.4	0.4	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

Fugitive $PM_{2.5}$

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0		
TOTALS															
Module 1			0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

CO_2

Construction Prototype	Land Use	Activity ID	13	14	15	16	17	18	19	20	21	22	23	24	
Studio	Support and Studio	PF-1	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9		
TOTALS															
Module 1			1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9	0.0	0.0
Max Daily Emission Rate by Month (lbs/day)			1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	1,866.4	872.9	872.9	872.9	0.0	0.0
Annual Emissions (lbs)	Year 1														
	Year 2														

Table D.1-2 Studio, Entertainment and Business Area onsite Mass Emission Rate for Modeling - Alternative 10
NBCUniversal
Los Angeles, California

Construction Zone	Volume Source Group	Daily Maximum Emission (g/s/volume)						Maximum Annual Emission (g/s/volume)		Average Annual Emissions (g/s/volume)	Number of Volume Sources
		NOx	CO	SOx	Controlled PM10 Combustion[1]	PM25 Combustion	VOC	NOx	Controlled PM10 Combustion[1]	Controlled PM10 Combustion[1]	
A	VA	1.25E-02	6.12E-03	1.13E-05	2.03E-04	5.83E-04	1.52E-03	3.40E-03	5.65E-05	4.18E-05	78
B	VB	9.62E-03	1.04E-02	1.30E-05	1.56E-04	6.77E-04	1.76E-03	3.31E-03	5.50E-05	3.24E-05	107
C	VC	1.56E-02	7.58E-03	1.53E-05	2.54E-04	7.32E-04	1.90E-03	5.90E-03	9.85E-05	6.87E-05	66
D	VD	5.40E-03	2.61E-03	5.27E-06	8.78E-05	2.53E-04	6.56E-04	2.26E-03	3.76E-05	1.62E-05	384
E	VE	3.72E-03	1.80E-03	3.19E-06	6.05E-05	1.74E-04	4.50E-04	1.13E-03	1.87E-05	1.29E-05	281
F	VF	9.27E-03	4.47E-03	7.97E-06	1.51E-04	4.34E-04	1.12E-03	5.90E-03	1.01E-04	4.62E-05	113
G	VG	6.07E-03	2.95E-03	5.36E-06	9.90E-05	2.85E-04	7.39E-04	1.76E-03	2.92E-05	1.05E-05	424
H	VH	8.47E-03	4.11E-03	8.31E-06	1.38E-04	3.97E-04	1.03E-03	3.62E-03	6.03E-05	3.50E-05	122
I	VI	1.39E-02	5.51E-03	1.40E-05	2.43E-04	6.98E-04	1.26E-03	4.52E-03	7.58E-05	6.85E-05	56
J	VJ	1.24E-02	6.00E-03	1.21E-05	2.02E-04	5.83E-04	1.50E-03	4.98E-03	8.28E-05	5.29E-05	42

Construction Zone	Area Source Group	Daily Maximum Emission (g/s/m2)		Maximum Annual Emission (g/s/m2)
		PM10 Fugitive	PM25 Fugitive	PM10 Fugitive
A	AA	4.89E-02	1.03E-02	4.45E-03
B	AB	4.93E-02	1.55E-02	6.00E-03
C	AC	4.93E-02	1.03E-02	7.46E-03
D	AD	9.87E-02	2.07E-02	8.92E-03
E	AE	4.96E-02	1.04E-02	7.48E-03
F	AF	4.94E-02	1.04E-02	7.62E-03
G	AG	1.22E-01	2.57E-02	1.19E-02
H	AH	5.01E-02	1.05E-02	4.54E-03
I	AI	2.47E-02	5.19E-03	2.99E-03
J	AJ	2.46E-02	5.16E-03	2.22E-03

Table D.1-3. Speciation Profile for Diesel Vehicle Exhaust and other Factors Used in Acute Non-Cancer Assessment
NBCUniversal
Los Angeles, California

TAC Name	CAS	Fraction[1]	Type	REL[2]	AF[3]
Benzene	71432	2.001E-02	VOC	1300	0.88
Formaldehyde	50000	1.471E-01	VOC	94	1
Methanol	67561	3.000E-04	VOC	28000	1
Methyl ethyl ketone {2-Butanone}	78933	1.477E-02	VOC	13000	1
m-Xylene	108383	6.110E-03	VOC	22000	1
o-Xylene	95476	3.350E-03	VOC	22000	1
p-Xylene	106423	9.500E-04	VOC	22000	1
Styrene	100425	5.800E-04	VOC	21000	1
Toluene	108883	1.473E-02	VOC	37000	1
Arsenic	7440382	5.000E-06	PM	0.19	0.96
Nickel	7440020	1.900E-05	PM	6	1
Chlorine	7782505	3.440E-04	PM	210	1
Copper	7440508	2.500E-05	PM	100	1
Vanadium (fume or dust)	7440622	2.900E-05	PM	30	1
Mercury	7439976	3.000E-05	PM	1.8	1

1. The weight fraction for TACs emitted as VOC is from CARB speciation profile 818 (Farm equipment - diesel - light & heavy) and for TACs emitted as PM is from CARB speciation profile 425 for diesel vehicle exhaust.
2.The Reference Exposure Level (REL) is from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values (Last updated April 25, 2005).
3. The adjustment factor (AF) is from SCAQMD;Permit Application Package “L” Used In Conjunction With The Risk Assessment Procedures For Rules 1401 And 212, Version 7.0 Effective For Applications Deemed Complete On Or After July 1, 2005, Table 8C.

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Table D.1-4. Health Risk Assessment Parameters Used to Evaluate Construction Cancer and Chronic Risks
NBCUniversal
Los Angeles, California

Receptor Type	Annual Concentration Adjustment Factor [3]	Daily breathing Rate (L/kg body weight-day) [3]	Exposure Value Factor [4]	DPM Cancer Potency [4] (mg/kg-day)$^{-1}$	DPM Multipathway Factor [5]	DPM Chronic Non-Cancer REL [5] ($\mu g/m^3$)	Multipathway Factor [5] (Chronic REL for DPM)
Residential	1	302	0.1018	1.1	1	5	1
Worker	4.2	149	0.0098	1.1	1	5	1
Recreational	1	302	0.0002	1.1	1	5	1

1. Cancer risk in a million is calculated using the following equation:
Cancer Risk = Cancer Potency x Dose Inhaled x Multipathway Factor; Dose Inhaled = C(air) x Daily Breathing Rate x Exposure Value Factor; C(air) = Average DPM Concentration x Annual Concentration Adjustment Factor

2. Chronic Risk = Average DPM Concentration / REL

3. SCAQMD Risk Assessment Procedures for Rules 1401 and 212, Version 7.0 July 1, 2005.

4. EVF was determined based on the following assumptions:
Residential receptors were assumed to have 10 yrs of exposure at 260 days per year (EVF = 10/70 * 260/365)
Worker receptors were assumed to have 10 yrs of exposure at 250 days per year (EVF = 10/70 * 250/365)
Recreational receptors were were assumed to have 10 yrs of exposure, 1 hr per day for 104 days per year (EVF = 10/70 * 4.3/365)

5. The Cancer Potency Factor (CPF) and the Chronic Reference Exposure Level (REL) is from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values (Last updated April 25, 2005) for Diesel Particulate Matter. A multi pathway factor of 1 was used as only "inhalation" pathway is the only applicable pathway for DPM.

Appendix E

Operation Calculations for Modeling

Table E.1-1. Future Year Criteria Polluntant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	**Model ID**	**Growth Factor or Demolition Factor for calculation in this Table**	**Future Emission Estimation Notes**	**CO**	**NO_X**	**SO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**		
Architectural Paint	SRC5	1.53	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	14,237	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	522,796	1.91E-06
Architectural Paint	SRC29	1.34	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	7,853	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	486,222	2.06E-06
Cooling Towers	CT1360R1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	5	0.05	0.00E+00	0.00E+00	0.00E+00	7.43E-05	7.32E-07	1	1.00E+00
Cooling Towers	CT1360R2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	5	0.05	0.00E+00	0.00E+00	0.00E+00	7.43E-05	7.32E-07	1	1.00E+00
Cooling Towers	CT2313R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	5	0.05	0.00E+00	0.00E+00	0.00E+00	7.43E-05	7.32E-07	1	1.00E+00
Cooling Towers	CT5511R1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	6	0.06	0.00E+00	0.00E+00	0.00E+00	8.33E-05	8.19E-07	1	1.00E+00
Cooling Towers	CT5511R2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	6	0.06	0.00E+00	0.00E+00	0.00E+00	8.33E-05	8.19E-07	1	1.00E+00
Cooling Towers	CT5146G1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	13	0.13	0.00E+00	0.00E+00	0.00E+00	1.91E-04	1.88E-06	1	1.00E+00
Cooling Towers	CT5146G2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	13	0.13	0.00E+00	0.00E+00	0.00E+00	1.91E-04	1.88E-06	1	1.00E+00
Cooling Towers	CT5146G3	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	8	0.08	0.00E+00	0.00E+00	0.00E+00	1.12E-04	1.10E-06	1	1.00E+00
Cooling Towers	CT2311R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	8	0.08	0.00E+00	0.00E+00	0.00E+00	1.19E-04	1.17E-06	1	1.00E+00
Cooling Towers	CT2315R1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	2	0.02	0.00E+00	0.00E+00	0.00E+00	2.55E-05	2.51E-07	1	1.00E+00
Cooling Towers	CT1360R3	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	10	0.10	0.00E+00	0.00E+00	0.00E+00	1.49E-04	1.46E-06	1	1.00E+00
Cooling Towers	CT3153G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	18	0.17	0.00E+00	0.00E+00	0.00E+00	2.55E-04	2.51E-06	1	1.00E+00
Cooling Towers	CT4115G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	2	0.02	0.00E+00	0.00E+00	0.00E+00	3.19E-05	3.14E-07	1	1.00E+00
Cooling Towers	CT4250R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	13	0.13	0.00E+00	0.00E+00	0.00E+00	1.86E-04	1.83E-06	1	1.00E+00
Cooling Towers	CT2160R1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	15	0.14	0.00E+00	0.00E+00	0.00E+00	2.10E-04	2.07E-06	1	1.00E+00
Cooling Towers	CT2160R2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	15	0.14	0.00E+00	0.00E+00	0.00E+00	2.10E-04	2.07E-06	1	1.00E+00
Cooling Towers	CT3385G2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	16	0.15	0.00E+00	0.00E+00	0.00E+00	2.23E-04	2.19E-06	1	1.00E+00
Cooling Towers	CT4407G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	16	0.15	0.00E+00	0.00E+00	0.00E+00	2.23E-04	2.19E-06	1	1.00E+00
Cooling Towers	CT6528R1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	16	0.15	0.00E+00	0.00E+00	0.00E+00	2.23E-04	2.19E-06	1	1.00E+00
Cooling Towers	CT6528R2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	0	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1	1.00E+00
Cooling Towers	CT6528R3	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	0	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1	1.00E+00
Cooling Towers	CT6528R4	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	0	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1	1.00E+00
Cooling Towers	CT2372R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	2	0.02	0.00E+00	0.00E+00	0.00E+00	2.97E-05	2.93E-07	1	1.00E+00
Cooling Towers	CT2315R2	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	4	0.04	0.00E+00	0.00E+00	0.00E+00	6.37E-05	6.27E-07	1	1.00E+00
Cooling Towers	CT1320R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	28	0.28	0.00E+00	0.00E+00	0.00E+00	4.09E-04	4.02E-06	1	1.00E+00
Cooling Towers	CT3228G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	31	0.31	0.00E+00	0.00E+00	0.00E+00	4.46E-04	4.39E-06	1	1.00E+00
Cooling Towers	CT3315G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	36	0.36	0.00E+00	0.00E+00	0.00E+00	5.20E-04	5.12E-06	1	1.00E+00
Cooling Towers	CT1280G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	4	0.04	0.00E+00	0.00E+00	0.00E+00	5.95E-05	5.85E-07	1	1.00E+00
Cooling Towers	CT1280R	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	41	0.41	0.00E+00	0.00E+00	0.00E+00	5.95E-04	5.85E-06	1	1.00E+00
Cooling Towers	CT3385G1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	41	0.41	0.00E+00	0.00E+00	0.00E+00	5.95E-04	5.85E-06	1	1.00E+00

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Table E.1-1. Future Year Criteria Polluntant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	**Model ID**	**Growth Factor or Demolition Factor for calculation in this Table**	**Future Emission Estimation Notes**	**CO**	**NO_X**	**SO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**		
Cooling Towers	CT3225G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	41	0.41	0.00E+00	0.00E+00	0.00E+00	5.95E-04	5.85E-06	1	1.00E+00
Cooling Towers	CT7227G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	15	0.15	0.00E+00	0.00E+00	0.00E+00	2.18E-04	2.14E-06	1	1.00E+00
Cooling Towers	CT3444G	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	13	0.13	0.00E+00	0.00E+00	0.00E+00	1.86E-04	1.83E-06	1	1.00E+00
Miscellaneous Materials	SRC38	-	Future Emissions Calculated Separately	0	0	0	9,934	136	85	0.00E+00	0.00E+00	0.00E+00	1.95E-03	1.22E-03	1,202,774	8.31E-07
Paint Booth	M40988_1	1.43	Scaled with growth factor from Vision Plan, modeled as existing source	0	0	0	185	41	40	0.00E+00	0.00E+00	0.00E+00	5.90E-04	5.69E-04	-	1.00E+00
Paint Booth	M40988_2	1.43	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	185	41	40	0.00E+00	0.00E+00	0.00E+00	5.90E-04	5.69E-04	-	1.00E+00
Paint Booth	M40990	1.43	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	229	25	24	0.00E+00	0.00E+00	0.00E+00	3.59E-04	3.46E-04	-	1.00E+00
Paint Booth	M40987	1.43	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	1,365	90	87	0.00E+00	0.00E+00	0.00E+00	1.29E-03	1.25E-03	-	1.00E+00
Paint Booth	F45441	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	0.03	0.03	0.03	0.00E+00	0.00E+00	0.00E+00	3.97E-07	3.82E-07	-	1.00E+00
Paint Booth	M31544	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	1.13	1.09	1.05	0.00E+00	0.00E+00	0.00E+00	1.57E-05	1.51E-05	-	1.00E+00
Fuel Storage Tank	N12575_1	1.25	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	277	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Fuel Storage Tank	N12575_2	1.25	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	277	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Fuel Storage Tank	SRC12	1.25	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	393	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Fuel Storage Tank	N15981	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	318	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Fuel Storage Tank	SRC14	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	451	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Fuel Storage Tank	SRC20	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	376	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Water Purification	WPSRC2	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Water Purification	WPSRC3	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Water Purification	WPSRC6	-	Future Emissions Calculated Separately, Scaled with growth factor	0	0	0	1,347	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5,278	1.89E-04
Water Purification	WPSRC7	0.00	Removed	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Water Purification	WPSRC12	-	Future Emissions Calculated Separately, Scaled with growth factor	0	0	0	58	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	230	4.35E-03
Welding	SRC56	1.43	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	0	97	94	0.00E+00	0.00E+00	0.00E+00	1.40E-03	1.35E-03	4,434	2.26E-04
Portable Generators - Diesel	PG_NW	-	Future Emissions Calculated Separately	76	21	0.46	5	0.72	0.70	1.10E-03	3.03E-04	6.61E-06	1.04E-05	1.01E-05	243,153	4.11E-06
Portable Generators - Diesel	PG_NE	0.00	Removed	0	0	0.00	0	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	244,727	4.09E-06
Portable Generators - Diesel	PG_S	0.00	Removed	0	0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Portable Generators, Third Party - Diesel	PG_NW3	-	Future Emissions Calculated Separately	27	37	0.17	2.11	0.25	0.24	3.82E-04	5.31E-04	2.48E-06	3.59E-06	3.50E-06	242,264	4.13E-06
Portable Generators, Third Party - Diesel	PG_NE3	-	Removed	0	0	0.00	0	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	244,727	4.09E-06
Portable Generators, Third Party - Diesel	PG_S3	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Emergency Generators - Unpermitted, NG	SRC2	1.00	Only activity is for testing. No change.	0.31	4	0.01	0.11	0.00	0.00	4.40E-06	5.72E-05	1.38E-07	0.00E+00	0.00E+00	-	1.00E+00
Emergency Generators - Unpermitted, NG	SRC3	1.00	Only activity is for testing. No change.	0.30	4	0.01	0.11	0.00	0.00	4.29E-06	5.58E-05	1.34E-07	0.00E+00	0.00E+00	-	1.00E+00
Emergency Generators - Unpermitted, NG	SRC4	1.00	Only activity is for testing. No change.	2	21	0.05	0.61	0.00	0.00	2.36E-05	3.06E-04	7.36E-07	0.00E+00	0.00E+00	-	1.00E+00
Boilers and Drying Oven - Permitted, NG	F48760	0.89	Incorporated into new buildings, existing source reduced with demolition factor	316	187	2	21	29	29	4.54E-03	2.69E-03	3.24E-05	4.11E-04	4.11E-04	-	1.00E+00
Boilers and Drying Oven - Permitted, NG	F48759	0.89	Incorporated into new buildings, existing source reduced with demolition factor	685	406	5	45	62	62	9.85E-03	5.84E-03	7.04E-05	8.91E-04	8.91E-04	-	1.00E+00
Boilers and Drying Oven - Permitted, NG	F48762	0.89	Incorporated into new buildings, existing source reduced with demolition factor	281	167	2	18	25	25	4.04E-03	2.40E-03	2.89E-05	3.66E-04	3.66E-04	-	1.00E+00
Boilers and Drying Oven - Permitted, NG	M40991	1.43	Scaled with growth factor from Evolution Plan, modeled as existing source	1	4	0.02	0.21	0.23	0.23	1.54E-05	5.71E-05	2.64E-07	3.30E-06	3.30E-06	-	1.00E+00

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Table E.1-1. Future Year Criteria Polluntant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	Model ID	Growth Factor or Demolition Factor for calculation in this Table	Future Emission Estimation Notes	CO	NO_X	SO_X	VOC	PM_{10}	$PM_{2.5}$	CO	NOx	SOx	PM_{10}	$PM_{2.5}$		
Emergency Generators - Permitted, Diesel	D59886	0.86	Incorporated into new buildings, existing source reduced with demolition factor	18	53	0.04	4	2	2	2.54E-04	7.68E-04	6.25E-07	3.44E-05	3.40E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	D80818	0.86	Incorporated into new buildings, existing source reduced with demolition factor	31	87	0.07	8	3	3	4.39E-04	1.25E-03	9.99E-07	4.90E-05	4.85E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	D88950	0.86	Incorporated into new buildings, existing source reduced with demolition factor	22	64	0.05	6	2	2	3.23E-04	9.21E-04	7.45E-07	3.58E-05	3.54E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	D92538	0.86	Incorporated into new buildings, existing source reduced with demolition factor	3	7	0.06	0.84	0.46	0.45	4.24E-05	1.00E-04	9.06E-07	6.57E-06	6.51E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F01255	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	6	0.03	0.55	0.24	0.24	3.14E-05	8.95E-05	4.75E-07	3.46E-06	3.43E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F01256	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	7	0.01	0.61	0.32	0.32	3.47E-05	1.05E-04	7.79E-08	4.59E-06	4.55E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F02630	0.86	Incorporated into new buildings, existing source reduced with demolition factor	5	13	0.01	1	0.96	0.95	7.35E-05	1.84E-04	1.17E-07	1.38E-05	1.36E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F12919	0.86	Incorporated into new buildings, existing source reduced with demolition factor	15	42	0.17	4	2	2	2.13E-04	6.08E-04	2.49E-06	2.37E-05	2.35E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F41128	0.86	Incorporated into new buildings, existing source reduced with demolition factor	3	6	0.00	0.73	0.40	0.39	3.68E-05	8.68E-05	6.31E-08	5.71E-06	5.65E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F41129	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	5	0.00	0.63	0.34	0.34	3.17E-05	7.49E-05	5.44E-08	4.92E-06	4.88E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F43473	0.86	Incorporated into new buildings, existing source reduced with demolition factor	13	38	0.03	3	1	1	1.90E-04	5.41E-04	4.50E-07	2.11E-05	2.09E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F46186	0.86	Incorporated into new buildings, existing source reduced with demolition factor	4	9	0.01	0.95	0.47	0.46	5.43E-05	1.31E-04	1.21E-07	6.70E-06	6.64E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F48763	0.86	Incorporated into new buildings, existing source reduced with demolition factor	21	64	0.12	5	3	3	3.07E-04	9.28E-04	1.66E-06	4.08E-05	4.04E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F48764	0.86	Incorporated into new buildings, existing source reduced with demolition factor	7	22	0.01	2	0.98	0.98	1.07E-04	3.24E-04	2.16E-07	1.42E-05	1.40E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F52607	0.86	Incorporated into new buildings, existing source reduced with demolition factor	3	9	0.07	0.83	0.37	0.36	4.76E-05	1.36E-04	1.05E-06	5.26E-06	5.21E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69244	0.86	Incorporated into new buildings, existing source reduced with demolition factor	3	9	0.01	0.83	0.36	0.36	4.71E-05	1.34E-04	1.05E-07	5.20E-06	5.15E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69290	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	4	0.003	0.48	0.26	0.26	2.44E-05	5.76E-05	4.21E-08	3.77E-06	3.74E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69291	0.86	Incorporated into new buildings, existing source reduced with demolition factor	6	40	0.04	2	0.89	0.88	8.99E-05	5.76E-04	5.58E-07	1.28E-05	1.27E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69292	0.86	Incorporated into new buildings, existing source reduced with demolition factor	53	167	0.07	15	9	9	7.59E-04	2.40E-03	1.03E-06	1.25E-04	1.24E-04	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69293	0.86	Incorporated into new buildings, existing source reduced with demolition factor	5	26	0.04	1	0.58	0.58	7.31E-05	3.70E-04	5.08E-07	8.36E-06	8.28E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69294	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	6	0.004	0.65	0.42	0.42	3.27E-05	8.21E-05	5.62E-08	6.11E-06	6.05E-06	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69295	0.86	Incorporated into new buildings, existing source reduced with demolition factor	48	145	0.11	12	6	6	6.91E-04	2.09E-03	1.61E-06	9.28E-05	9.19E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69296	0.86	Incorporated into new buildings, existing source reduced with demolition factor	34	97	0.08	9	4	4	4.90E-04	1.40E-03	1.20E-06	5.38E-05	5.33E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69297	0.86	Incorporated into new buildings, existing source reduced with demolition factor	8	54	0.05	3	1	1	1.20E-04	7.70E-04	7.00E-07	1.72E-05	1.70E-05	-	1.00E+00
Emergency Generators - Permitted, Diesel	F69307	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	6	0.04	0.51	0.22	0.22	2.91E-05	8.29E-05	6.40E-07	3.20E-06	3.17E-06	-	1.00E+00
Attraction Special Effects - Nonpermitted, LPG	SRC45	0.86	Incorporated into new buildings, existing source reduced with demolition factor	60	238	86	5	5	5	8.57E-04	3.43E-03	1.23E-03	7.32E-05	7.25E-05	188	5.32E-03
Attraction Special Effects - Nonpermitted, LPG	SRC46	0.00	Removed	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Attraction Special Effects - Nonpermitted, LPG	SRC44	0.86	Incorporated into new buildings, existing source reduced with demolition factor	148	592	213	12	13	13	2.13E-03	8.51E-03	3.06E-03	1.82E-04	1.80E-04	11,722	8.53E-05
Attraction Special Effects - Nonpermitted, LPG	SRC47	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Steam Cleaners and Pressure Washers - Permitted, Diesel	SRC48	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0.30	1.20	0.43	0.08	0.12	0.12	4.31E-06	1.72E-05	6.11E-06	1.68E-06	1.67E-06	887	1.13E-03
Steam Cleaners and Pressure Washers - Permitted, Diesel	SRC49	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	27	107	38	7	10	10	3.84E-04	1.54E-03	5.45E-04	1.50E-04	1.49E-04	770,601	1.30E-06
Steam Cleaners and Pressure Washers - Permitted, Diesel	SRC50	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	9	35	12	2	3	3	1.25E-04	5.01E-04	1.78E-04	4.89E-05	4.85E-05	167,198	5.98E-06

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Table E.1-1. Future Year Criteria Polluntant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	**Model ID**	**Growth Factor or Demolition Factor for calculation in this Table**	**Future Emission Estimation Notes**	**CO**	**NO_X**	**SO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**		
Steam Cleaners - Nonpermitted, LPG	SRC41	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	6	25	9	0.51	0.53	0.53	8.97E-05	3.59E-04	1.29E-04	7.66E-06	7.59E-06	770,625	1.30E-06
Steam Cleaners - Unpermitted, Gasoline	SRC40	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	4,611	119	6	241	8	8	6.63E-02	1.72E-03	8.92E-05	1.09E-04	1.09E-04	771,311	1.30E-06
Nonpermitted, NG Meters (waterboilers, etc.)	SRC21	0.86	Incorporated into new buildings, existing source reduced with demolition factor	87	124	1	17	19	19	1.26E-03	1.79E-03	2.15E-05	2.69E-04	2.69E-04	165,616	6.04E-06
Nonpermitted, NG Meters (waterboilers, etc.)	SRC22	0.86	Incorporated into new buildings, existing source reduced with demolition factor	11	16	0.19	2	2	2	1.63E-04	2.31E-04	2.79E-06	3.48E-05	3.48E-05	759,695	1.32E-06
Nonpermitted, NG Meters (waterboilers, etc.)	SRC1	0.86	Incorporated into new buildings, existing source reduced with demolition factor	3,020	4,297	52	604	647	647	4.34E-02	6.18E-02	7.45E-04	9.31E-03	9.31E-03	1,203,191	8.31E-07
Nonpermitted, NG Meters (waterboilers, etc.)	SRC7	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	550	783	9	110	118	118	7.92E-03	1.13E-02	1.36E-04	1.70E-03	1.70E-03	325	3.08E-03
Nonpermitted, NG Meters (waterboilers, etc.)	SRC23	0.86	Incorporated into new buildings, existing source reduced with demolition factor	6	8	0.10	1	1	1	8.15E-05	1.16E-04	1.40E-06	1.75E-05	1.75E-05	5,535	1.81E-04
Nonpermitted, NG Meters (waterboilers, etc.)	SRC32	0.86	Incorporated into new buildings, existing source reduced with demolition factor	13	18	0.22	3	3	3	1.81E-04	2.57E-04	3.10E-06	3.87E-05	3.87E-05	950	1.05E-03
Nonpermitted, NG Meters (waterboilers, etc.)	SRC33	0.86	Incorporated into new buildings, existing source reduced with demolition factor	2	3	0.03	0.35	0.38	0.38	2.54E-05	3.61E-05	4.35E-07	5.44E-06	5.44E-06	322	3.11E-03
Nonpermitted, NG Meters (waterboilers, etc.)	SRC34	0.86	Incorporated into new buildings, existing source reduced with demolition factor	69	98	1	14	15	15	9.92E-04	1.41E-03	1.70E-05	2.13E-04	2.13E-04	2,806	3.56E-04
Nonpermitted, NG Meters (waterboilers, etc.)	SRC25	0.86	Incorporated into new buildings, existing source reduced with demolition factor	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	325	3.08E-03
Nonpermitted, NG Meters (waterboilers, etc.)	SRC30	0.86	Incorporated into new buildings, existing source reduced with demolition factor	1	2	0.02	0.26	0.28	0.28	1.90E-05	2.71E-05	3.26E-07	4.08E-06	4.08E-06	0	2.74E+00
Nonpermitted, NG Meters (waterboilers, etc.)	SRC37	0.86	Incorporated into new buildings, existing source reduced with demolition factor	85	121	1	17	18	18	1.22E-03	1.74E-03	2.10E-05	2.62E-04	2.62E-04	1,039	9.63E-04
Nonpermitted, NG Meters (waterboilers, etc.)	SRC31	0.86	Incorporated into new buildings, existing source reduced with demolition factor	30	43	0.51	6	6	6	4.32E-04	6.14E-04	7.40E-06	9.25E-05	9.25E-05	1,279	7.82E-04
Nonpermitted, NG Meters (waterboilers, etc.)	SRC35	0.86	Incorporated into new buildings, existing source reduced with demolition factor	31	44	0.54	6	7	7	4.50E-04	6.40E-04	7.71E-06	9.64E-05	9.64E-05	153	6.55E-03
Nonpermitted, NG Meters (waterboilers, etc.)	SRC36	0.86	Incorporated into new buildings, existing source reduced with demolition factor	47	66	0.80	9	10	10	6.70E-04	9.53E-04	1.15E-05	1.44E-04	1.44E-04	103	9.67E-03
Heaters - Nonpermitted, LPG	SRC42	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	27	107	38.37	2	2	2	3.84E-04	1.54E-03	5.52E-04	3.28E-05	3.25E-05	1,976	5.06E-04
Heaters - Nonpermitted, LPG	SRC43	1.25	Scaled with growth factor from Evolution Plan, modeled as existing source	47	189	68	4	4	4	6.78E-04	2.71E-03	9.75E-04	5.79E-05	5.74E-05	3,423	2.92E-04
Emergency Generators and Various ICEs - Nonpermitted, Diesel	SRC28	1.06	Scaled with growth factor from Evolution Plan, modeled as existing source	0.52	2	0.04	0.19	0.17	0.16	7.41E-06	3.41E-05	5.16E-07	2.38E-06	2.35E-06	0	2.47E+00
Misc. Mobile Sources - Diesel	SRC16	-	Future Emissions Calculated Separately	50.05	48	0.13	2	11	0.15	7.20E-04	6.86E-04	1.82E-06	1.62E-04	2.21E-06	486,222	2.06E-06
Misc. Mobile Sources - Propane	SRC19	-	Future Emissions Calculated Separately	277	74	0.00	15	25	2	3.98E-03	1.06E-03	0.00E+00	3.61E-04	2.51E-05	486,222	2.06E-06
Misc. Mobile Sources - Gasoline	SRC18	-	Future Emissions Calculated Separately	60,247	659	5	2,206	713	48	8.67E-01	9.48E-03	6.70E-05	1.03E-02	6.96E-04	486,222	2.06E-06
Emergency Generators and Various ICEs - Nonpermitted, Diesel	SRC24	1.44	Scaled with growth factor from Evolution Plan, modeled as existing source	0.33	2	0.02	0.12	0.11	0.11	4.77E-06	2.19E-05	3.32E-07	1.53E-06	1.51E-06	761,730	1.31E-06
Emergency Generators and Various ICEs - Nonpermitted, Diesel	SRC9	1.75	Scaled with growth factor from Evolution Plan, modeled as existing source	165	758	11	61	53	52	2.37E-03	1.09E-02	1.65E-04	7.60E-04	7.53E-04	1,203,241	8.31E-07
Misc. Mobile Sources - Diesel	SRC8NW	-	Future Emissions Calculated Separately	150.16	143.18	0.38	6.56	29.49	0.46	2.16E-03	2.06E-03	5.46E-06	4.24E-04	6.63E-06	72,520	1.38E-05
Misc. Mobile Sources - Diesel	SRC8NE	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	124,966	8.00E-06
Misc. Mobile Sources - Diesel	SRC8S	0.00	Removed	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	REMOVED	#VALUE!
Misc. Mobile Sources - Gasoline/Propane	MSRC	-	Future Emissions Calculated Separately	121,092	1,494	9	4,351	937	83	7.27E-04	8.97E-06	5.61E-08	5.63E-06	4.96E-07	2,395	1.00E+00
Trams - Diesel	L00	-	Future Emissions Calculated Separately	11,184	2,811	19	2,627	812	128	2.31E-04	5.80E-05	3.90E-07	1.68E-05	2.64E-06	697	1.00E+00
Delivery Trucks - Route 1	DT1	-	Future Emissions Calculated Separately	506	218	0.51	95	65	9	2.60E-04	1.12E-04	2.61E-07	3.35E-05	4.53E-06	28	1.00E+00
Delivery Trucks - Route 2	DT2	-	Future Emissions Calculated Separately	715	283	0.66	137	76	10	3.67E-04	1.46E-04	3.39E-07	3.93E-05	5.10E-06	28	1.00E+00
Delivery Trucks - Route 3	DT3	-	Future Emissions Calculated Separately	214	83	0.36	41	54	6	3.31E-05	1.29E-05	5.63E-08	8.39E-06	9.46E-07	93	1.00E+00
Delivery Trucks - Route 4	DT4	-	Future Emissions Calculated Separately	95	42	0.09	18	14	2	4.13E-05	1.81E-05	4.05E-08	5.90E-06	8.53E-07	33	1.00E+00

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Table E.1-1. Future Year Criteria Polluntant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	**Model ID**	**Growth Factor or Demolition Factor for calculation in this Table**	**Future Emission Estimation Notes**	**CO**	**NO_X**	**SO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**		
Delivery Trucks - Route 5	DT5	-	Future Emissions Calculated Separately	39	14	0.04	8	6	0.76	1.10E-05	3.86E-06	1.22E-08	1.77E-06	2.15E-07	51	1.00E+00
Delivery Trucks - Route 6	DT6	-	Future Emissions Calculated Separately	26	12	0.04	5	7	0.90	6.17E-06	2.81E-06	8.32E-09	1.58E-06	2.12E-07	61	1.00E+00
Delivery Trucks - Route 7	DT7	-	Future Emissions Calculated Separately	313	118	0.42	60	59	7	3.20E-05	1.20E-05	4.29E-08	6.00E-06	7.11E-07	141	1.00E+00
Delivery Trucks - Route 13	DT13	-	Future Emissions Calculated Separately	58	20	0.07	11	9	1.01	1.38E-05	4.69E-06	1.60E-08	2.16E-06	2.43E-07	60	1.00E+00
Delivery Trucks - Route 14	DT14	-	Future Emissions Calculated Separately	122	52	0.23	23	38	5	9.23E-05	3.93E-05	1.73E-07	2.91E-05	3.61E-06	19	1.00E+00
Delivery Trucks - Route 15	DT15	-	Future Emissions Calculated Separately	186	76	0.38	36	60	7	1.57E-05	6.45E-06	3.19E-08	5.05E-06	5.59E-07	170	1.00E+00
Delivery Trucks - Route 16	DT16	-	Future Emissions Calculated Separately	305	127	0.59	58	96	11	2.94E-05	1.23E-05	5.66E-08	9.26E-06	1.09E-06	149	1.00E+00
Delivery Trucks - Route 18	DT18	-	Future Emissions Calculated Separately	212	85	0.37	40	57	7	3.39E-05	1.36E-05	5.84E-08	9.09E-06	1.07E-06	90	1.00E+00
Delivery Trucks - Route 19	DT19	-	Future Emissions Calculated Separately	158	63	0.24	30	35	4	1.86E-05	7.43E-06	2.81E-08	4.16E-06	4.88E-07	122	1.00E+00
Delivery Trucks - Route 20	DT20	-	Future Emissions Calculated Separately	136	52	0.17	26	23	3	1.37E-05	5.24E-06	1.69E-08	2.31E-06	2.78E-07	142	1.00E+00
Delivery Trucks - Route 8	DT8	-	Future Emissions Calculated Separately	5	2	0.01	1.00	11	2	1.21E-06	5.68E-07	2.87E-09	2.56E-06	3.58E-07	61	1.00E+00
Delivery Trucks - Route 9	DT9	-	Future Emissions Calculated Separately	5	2	0.01	0.87	4	0.58	6.89E-07	2.83E-07	1.58E-09	6.26E-07	8.66E-08	97	1.00E+00
Delivery Trucks - Route 10	DT10	-	Future Emissions Calculated Separately	6	2	0.01	1	3	0.40	6.24E-07	1.95E-07	1.13E-09	3.42E-07	4.21E-08	135	1.00E+00
Delivery Trucks - Route 11	DT11	-	Future Emissions Calculated Separately	3	1	0.005	0.62	2	0.29	3.91E-07	1.44E-07	6.45E-10	2.69E-07	3.57E-08	115	1.00E+00
Delivery Trucks - Route 12	DT12	-	Future Emissions Calculated Separately	3	1	0.01	0.56	5	0.68	4.53E-07	2.09E-07	9.10E-10	7.54E-07	1.06E-07	92	1.00E+00
Delivery Trucks - Route 17	DT17	-	Future Emissions Calculated Separately	74	30	0.14	14	26	3	8.63E-06	3.53E-06	1.66E-08	2.98E-06	3.47E-07	124	1.00E+00
Delivery Trucks - Route 21	DT21	-	Future Emissions Calculated Separately	69	28	0.13	13	22	3	7.43E-06	3.01E-06	1.41E-08	2.38E-06	2.75E-07	134	1.00E+00
Technicolor	SRC6	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC8	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC10	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC11	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC13	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC15	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC17	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC26	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC27	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC39	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC51	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC52	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	314	3.19E-03
Technicolor	SRC53	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-	1.00E+00
Technicolor	SRC54	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2,179	4.59E-04

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Table E.1-1. Future Year Criteria Pollutant Emission Rate - Alternative 10 Calculations
NBCUniversal
Los Angeles, California

				Future Year Emisisons (lbs/yr)						Criteria Pollutant Emission Rates (g/sec or g/sec/number of volume sources) [1]					Area (m^2) or Number of volume sources	XOQ model input [2]
Source Category	**Model ID**	**Growth Factor or Demolition Factor for calculation in this Table**	**Future Emission Estimation Notes**	**CO**	**NO_X**	**SO_X**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**		
Technicolor	SRC55	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1	1.00E+00
Technicolor	SRC1PB	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6,008	1.66E-04
Technicolor	N/A	0.00	Technicolor not operating in Alt 10; emissions calculated and modeled as an Office Building	0	0	0	0	0	0	-	-	-	-	-	-	-
Film Cleaners	N/A	1.25	Scaled with growth factor from Evolution Plan, modeled as existing source	0	0	0	1	0	0	-	-	-	-	-	-	-
Trams - Diesel	LB0	-	Removed - All tram emissions are in L00 (row 132)	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	538	1.00E+00
Water Purification at Pools	NEWDEVWP	-	Removed - Not present in Alt 10	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	338,754	2.95E-06
Natural Gas Combustion	NEWDEVNG	-	Removed - Not present in Alt 10	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	338,754	2.95E-06
Cooling Towers	NEWDEVCT	-	Removed - Not present in Alt 10	0	0	0	0	0	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	338,754	2.95E-06
Generators	NEWDEVGE	-	Removed - Not present in Alt 10	0	0	0	0	0	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	338,754	2.95E-06
New Building FL Modules	AA	-	Future Emissions Calculated Separately, New Building Configuations	521	567	6	71	110	78	7.49E-03	8.16E-03	8.72E-05	1.58E-03	1.13E-03	31,595	3.17E-05
New Building FL Modules	AB	-	Future Emissions Calculated Separately, New Building Configuations	1,261	1,373	15	172	267	190	1.81E-02	1.98E-02	2.11E-04	3.83E-03	2.73E-03	41,949	2.38E-05
New Building FL Modules	AC	-	Future Emissions Calculated Separately, New Building Configuations	320	402	4	51	81	55	4.60E-03	5.78E-03	6.05E-05	1.16E-03	7.85E-04	26,134	3.83E-05
New Building FL Modules	AD	-	Future Emissions Calculated Separately, New Building Configuations	309	460	5	60	95	61	4.45E-03	6.62E-03	6.79E-05	1.37E-03	8.84E-04	159,168	6.28E-06
New Building FL Modules	AE	-	Future Emissions Calculated Separately, New Building Configuations	86	155	13	17	26	17	1.24E-03	2.23E-03	1.89E-04	3.77E-04	2.43E-04	113,885	8.78E-06
New Building FL Modules	AF	-	Future Emissions Calculated Separately, New Building Configuations	650	3,348	18	165	46	31	9.35E-03	4.82E-02	2.55E-04	6.62E-04	4.48E-04	45,793	2.18E-05
New Building FL Modules	AG	-	Future Emissions Calculated Separately, New Building Configuations	1,350	5,143	436	273	206	142	1.94E-02	7.40E-02	6.27E-03	2.97E-03	2.04E-03	168,294	5.94E-06
New Building FL Modules	AH	-	Future Emissions Calculated Separately, New Building Configuations	29	41	4	4	6	4	4.10E-04	5.96E-04	6.15E-05	9.00E-05	6.32E-05	50,699	1.97E-05
New Building FL Modules	AI	-	Future Emissions Calculated Separately, New Building Configuations	73	141	17	14	21	14	1.05E-03	2.03E-03	2.42E-04	3.07E-04	2.00E-04	23,305	4.29E-05
New Building FL Modules	AJ	-	Future Emissions Calculated Separately, New Building Configuations	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	20,684	4.83E-05

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Future Emissions\Alt 10\[Alt10 Operational Input Summary.xlsx]Baseline Growth Summary

Notes:
1. Gram per second emission rates based on 8760 hrs per year and 24 hrs per day (used for annual average impact modeling). Note for rows that represent a group of volume sources, the mass emission used is for a single volume source
2. XOQ input is either the inverse of the area of an area or polygon area model source or 1 for a volume source

Numbers above each column indicates corresponding footnote.

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Table E.1-2. Model Parameters for New Sources in the Future Year - Alternative 10
NBCUniversal
Los Angeles, California

Source Type	Description	Model ID	Release Height (m)	Initial Vert Dim (m)	Initial Lat Dim (m)	Number of Sources	Notes
Volume Source	Delivery Trucks - New Routes for Alternative 10	DT7	1	1.86	6.98	141	Same parameters as original tram route
	Trams - New Routes for Alternative 10	L00	0.6	4.65	2.33	697	
Polygon Area	All sources combined - Studio, Entertainment and Business Area	AA	0	1	N/A	N/A	Locations of individual sources unknown, so represented by large area source with conservative parameters
		AB	0	1	N/A	N/A	
		AC	0	1	N/A	N/A	
		AD	0	1	N/A	N/A	
		AE	0	1	N/A	N/A	
		AF	0	1	N/A	N/A	
		AG	0	1	N/A	N/A	
		AH	0	1	N/A	N/A	
		AI	0	1	N/A	N/A	
		AJ	0	1	N/A	N/A	

P:\N\NBCUniversal\AQ EIR\Emissions estimates\Future Emissions\Alt 10\[Alt10 Operational Input Summary.xlsx]Future Model Parameters

Notes:
1. All sources from the base year that are not removed in the future have the same parameters as in the base year, including temporal characteristics.

Table E.1-3 Future Year Health Risk Modeling Emission Rates - Alternative 10
NBCUniversal
Los Angeles, California

Source ID	Resident Risk Weighted Emission Rates (g/s or g/s/volume)	Worker Risk Weighted Emission Rates (g/s or g/s/volume)	Resident: Chronic REL Weighted Emission Rates (g/s or g/s/volume)	Worker: Chronic REL Weighted Emission Rates (g/s or g/s/volume)	Acute REL Weighted Emission Rates (g/s)
D59886	1.09E-02	9.10E-03	6.87E-06	6.87E-06	2.04E-07
D80818	1.56E-02	1.30E-02	9.79E-06	9.79E-06	3.51E-07
D88950	1.14E-02	9.47E-03	7.15E-06	7.15E-06	2.57E-07
D92538	2.09E-03	1.74E-03	1.31E-06	1.31E-06	3.81E-08
DT1	5.94E-04	4.94E-04	1.16E-06	1.13E-06	5.21E-08
DT10	1.02E-06	8.42E-07	7.55E-09	7.23E-09	1.33E-10
DT11	7.98E-07	6.61E-07	5.69E-09	5.43E-09	9.40E-11
DT12	1.30E-06	1.07E-06	1.45E-08	1.38E-08	1.59E-10
DT13	2.39E-05	1.99E-05	6.70E-08	6.50E-08	2.54E-09
DT14	3.54E-04	2.94E-04	8.30E-07	8.03E-07	2.29E-08
DT15	5.08E-05	4.21E-05	1.41E-07	1.36E-07	3.76E-09
DT16	1.04E-04	8.66E-05	2.62E-07	2.53E-07	7.15E-09
DT17	2.68E-05	2.22E-05	7.98E-08	7.70E-08	2.06E-09
DT18	1.06E-04	8.81E-05	2.64E-07	2.55E-07	7.75E-09
DT19	5.06E-05	4.20E-05	1.24E-07	1.20E-07	4.03E-09
DT2	6.99E-04	5.81E-04	1.43E-06	1.39E-06	6.92E-08
DT20	3.15E-05	2.62E-05	7.34E-08	7.12E-08	2.75E-09
DT21	2.35E-05	1.95E-05	6.55E-08	6.33E-08	1.75E-09
DT3	9.31E-05	7.73E-05	2.44E-07	2.36E-07	7.30E-09
DT4	1.03E-04	8.59E-05	1.98E-07	1.93E-07	8.45E-09
DT5	2.06E-05	1.71E-05	5.45E-08	5.29E-08	2.06E-09
DT6	1.89E-05	1.57E-05	4.48E-08	4.33E-08	1.42E-09
DT7	7.70E-05	6.39E-05	1.86E-07	1.80E-07	6.50E-09
DT8	3.66E-06	3.02E-06	4.86E-08	4.61E-08	4.78E-10
DT9	3.25E-06	2.69E-06	1.38E-08	1.32E-08	2.13E-10
F01255	1.10E-03	9.17E-04	6.92E-07	6.92E-07	2.50E-08
F01256	1.46E-03	1.22E-03	9.19E-07	9.19E-07	2.76E-08
F02630	4.38E-03	3.64E-03	2.75E-06	2.75E-06	6.62E-08
F12919	7.54E-03	6.27E-03	4.74E-06	4.74E-06	1.70E-07
F41128	1.82E-03	1.51E-03	1.14E-06	1.14E-06	3.30E-08
F41129	1.57E-03	1.30E-03	9.84E-07	9.84E-07	2.85E-08
F43473	6.73E-03	5.60E-03	4.23E-06	4.23E-06	1.52E-07
F46186	2.14E-03	1.78E-03	1.34E-06	1.34E-06	4.32E-08
F48759	4.39E-04	1.98E-04	3.05E-06	3.05E-06	3.10E-07
F48760	2.02E-04	9.13E-05	1.40E-06	1.40E-06	1.43E-07
F48762	1.80E-04	8.13E-05	1.25E-06	1.25E-06	1.27E-07
F48763	1.30E-02	1.08E-02	8.15E-06	8.15E-06	2.45E-07
F48764	4.51E-03	3.75E-03	2.83E-06	2.83E-06	8.52E-08
F52607	1.67E-03	1.39E-03	1.05E-06	1.05E-06	3.79E-08
F69244	1.65E-03	1.38E-03	1.04E-06	1.04E-06	3.74E-08
F69290	1.20E-03	9.99E-04	7.55E-07	7.55E-07	2.19E-08
F69291	4.09E-03	3.40E-03	2.57E-06	2.57E-06	9.87E-08
F69292	3.99E-02	3.31E-02	2.50E-05	2.50E-05	6.87E-07
F69293	2.66E-03	2.21E-03	1.67E-06	1.67E-06	4.79E-08
F69294	1.95E-03	1.62E-03	1.22E-06	1.22E-06	2.95E-08
F69295	2.96E-02	2.46E-02	1.86E-05	1.86E-05	5.54E-07
F69296	1.71E-02	1.42E-02	1.08E-05	1.08E-05	3.89E-07
F69297	5.48E-03	4.56E-03	3.44E-06	3.44E-06	1.32E-07
F69307	1.02E-03	8.48E-04	6.41E-07	6.41E-07	2.31E-08
L00	9.17E-04	7.62E-04	8.17E-07	8.03E-07	1.71E-07
M31544	7.54E-06	6.26E-06	1.38E-07	1.38E-07	2.48E-08
M40991	1.64E-06	7.42E-07	1.14E-08	1.14E-08	1.16E-09
MSRC	3.54E-05	2.94E-05	4.12E-07	4.06E-07	1.61E-08
N12575_1	3.04E-03	2.53E-03	4.16E-06	4.16E-06	1.04E-07
N12575_2	3.04E-03	2.53E-03	4.16E-06	4.16E-06	1.04E-07
N15981	1.75E-03	1.45E-03	2.39E-06	2.39E-06	5.95E-08
PG_NE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PG_NE3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PG_NW	3.30E-03	2.74E-03	2.07E-06	2.07E-06	2.05E-07
PG_NW3	1.14E-03	9.49E-04	7.17E-07	7.17E-07	9.52E-08
SRC1	4.65E-03	2.10E-03	3.22E-05	3.22E-05	3.28E-06
SRC10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC12	3.16E-06	2.63E-06	3.06E-08	3.06E-08	9.07E-10
SRC13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC14	3.63E-06	3.01E-06	3.51E-08	3.51E-08	1.04E-09
SRC15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC16	8.03E-04	6.66E-04	3.27E-06	3.12E-06	1.12E-07
SRC17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC18	4.35E-02	3.61E-02	5.86E-04	5.77E-04	1.96E-05
SRC19	1.08E-04	7.53E-05	5.91E-06	5.58E-06	3.09E-08

Table E.1-3 Future Year Health Risk Modeling Emission Rates - Alternative 10
NBCUniversal
Los Angeles, California

Source ID	Resident Risk Weighted Emission Rates (g/s or g/s/volume)	Worker Risk Weighted Emission Rates (g/s or g/s/volume)	Resident: Chronic REL Weighted Emission Rates (g/s or g/s/volume)	Worker: Chronic REL Weighted Emission Rates (g/s or g/s/volume)	Acute REL Weighted Emission Rates (g/s)
SRC1PB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC2	8.13E-06	6.75E-06	4.02E-07	4.02E-07	6.39E-08
SRC20	3.02E-06	2.51E-06	2.92E-08	2.92E-08	8.67E-10
SRC21	1.34E-04	6.07E-05	9.32E-07	9.32E-07	9.50E-08
SRC22	1.74E-05	7.85E-06	1.21E-07	1.21E-07	1.23E-08
SRC23	8.71E-06	3.93E-06	6.05E-08	6.05E-08	6.16E-09
SRC24	4.87E-04	4.05E-04	3.06E-07	3.06E-07	5.57E-09
SRC25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC28	7.57E-04	6.29E-04	4.75E-07	4.75E-07	8.65E-09
SRC29	1.47E-01	6.80E-02	3.90E-03	3.90E-03	1.02E-05
SRC3	7.93E-06	6.58E-06	3.92E-07	3.92E-07	6.23E-08
SRC30	2.04E-06	9.19E-07	1.41E-08	1.41E-08	1.44E-09
SRC31	4.62E-05	2.08E-05	3.20E-07	3.20E-07	3.27E-08
SRC32	1.93E-05	8.73E-06	1.34E-07	1.34E-07	1.37E-08
SRC33	2.71E-06	1.23E-06	1.88E-08	1.88E-08	1.92E-09
SRC34	1.06E-04	4.79E-05	7.36E-07	7.36E-07	7.50E-08
SRC35	4.81E-05	2.17E-05	3.34E-07	3.34E-07	3.40E-08
SRC36	7.16E-05	3.23E-05	4.97E-07	4.97E-07	5.06E-08
SRC37	1.31E-04	5.91E-05	9.08E-07	9.08E-07	9.26E-08
SRC38	1.47E-01	1.22E-01	1.49E-03	1.12E-03	1.84E-11
SRC39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC4	4.35E-05	3.61E-05	2.15E-06	2.15E-06	3.42E-07
SRC40	5.12E-03	4.26E-03	5.89E-05	5.89E-05	2.78E-06
SRC41	1.04E-05	4.64E-06	6.69E-08	6.69E-08	6.74E-09
SRC42	4.44E-05	1.99E-05	2.86E-07	2.86E-07	2.89E-08
SRC43	7.84E-05	3.51E-05	5.06E-07	5.06E-07	5.10E-08
SRC44	2.46E-04	1.10E-04	1.59E-06	1.59E-06	1.60E-07
SRC45	9.91E-05	4.43E-05	6.39E-07	6.39E-07	6.44E-08
SRC48	1.34E-03	5.65E-04	1.87E-06	1.69E-06	1.50E-07
SRC49	1.19E-01	5.04E-02	1.67E-04	1.51E-04	1.34E-05
SRC5	5.06E-02	4.20E-02	1.46E-04	1.44E-04	4.01E-06
SRC50	3.89E-02	1.64E-02	5.45E-05	4.92E-05	4.36E-06
SRC51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC56	7.63E-03	6.34E-03	8.95E-04	8.95E-04	2.48E-07
SRC6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC7	8.47E-04	3.82E-04	5.87E-06	5.87E-06	5.99E-07
SRC8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC8NE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SRC8NW	2.40E-03	1.99E-03	8.73E-06	8.33E-06	3.31E-07
SRC9	2.42E-01	2.01E-01	1.52E-04	1.52E-04	2.77E-06
WPSRC12	4.59E-03	3.81E-03	2.78E-06	2.78E-06	5.38E-06
WPSRC6	1.07E-01	8.86E-02	6.46E-05	6.46E-05	1.25E-04
AA	1.41E-02	1.14E-02	1.82E-05	1.82E-05	4.76E-07
AB	3.43E-02	2.76E-02	4.41E-05	4.41E-05	1.15E-06
AC	1.15E-02	1.37E-05	1.37E-05	1.37E-05	3.47E-07
AD	1.50E-02	1.66E-05	1.66E-05	1.66E-05	4.09E-07
AE	4.11E-03	4.70E-06	4.70E-06	4.70E-06	1.17E-07
AF	6.55E-03	7.16E-06	7.17E-06	7.15E-06	1.75E-07
AG	2.89E-02	3.88E-05	3.88E-05	3.88E-05	1.03E-06
AH	8.30E-04	1.09E-06	1.09E-06	1.09E-06	2.86E-08
AI	3.29E-03	3.88E-06	3.88E-06	3.88E-06	9.80E-08
AJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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Appendix F

Localized CO Analysis

Table F.1-1. Intersection Screening Analysis - Future with Alternative 10
NBC Universal
Los Angeles, California

SUMMARY OF INTERSECTION LEVEL OF SERVICE ANALYSIS - ALTERNATIVE 10

No.	Intersection	Peak Hour	Future without Alt 10 (With Metro)		Future with Alt 10 with Funded Improvements (With Metro)		Increase in V/C due to Alt 10	% Increase	Require CO Hotspot Analysis?[1]
			V/C	LOS	V/C	LOS			
1.	Colfax Avenue &	A.M.	0.770	C	0.755	C	-0.015	-1.95	No
	Ventura Boulevard	P.M.	1.032	F	1.019	F	-0.013	-1.26	
2.	Kraft Avenue/SR 170 SB Off-Ramp &	A.M.	0.663	B	0.647	B	-0.016	-2.41	No
	Riverside Drive	P.M.	0.613	B	0.592	A	-0.021	-3.43	
3.	Tujunga Avenue &	A.M.	1.171	F	1.158	F	-0.013	-1.11	No
	Riverside Drive/Camarillo Street	P.M.	1.126	F	1.118	F	-0.008	-0.71	
4.	Tujunga Avenue &	A.M.	0.696	B	0.682	B	-0.014	-2.01	No
	Ventura Boulevard	P.M.	0.841	D	0.831	D	-0.010	-1.19	
5.	Eureka Drive &	A.M.	0.695	B	0.683	B	-0.012	-1.73	No
	Ventura Boulevard	P.M.	0.668	B	0.657	B	-0.011	-1.65	
6.	Lankershim Boulevard &	A.M.	1.197	F	1.196	F	-0.001	-0.08	No
	Magnolia Boulevard	P.M.	1.107	F	1.103	F	-0.004	-0.36	
7.	Studio City Place &	A.M.	0.617	B	0.606	B	-0.011	-1.78	No
	Ventura Boulevard	P.M.	0.683	B	0.673	B	-0.010	-1.46	
8.	Vineland Avenue &	A.M.	1.101	F	1.094	F	-0.007	-0.64	No
	Magnolia Boulevard	P.M.	1.402	F	1.396	F	-0.006	-0.43	
9.	Vineland Avenue/Lankershim Boulevard &	A.M.	1.351	F	1.324	F	-0.027	-2.00	No
	Camarillo Street	P.M.	1.205	F	1.206	F	0.001	0.08	
10.	Vineland Avenue &	A.M.	1.124	F	1.068	F	-0.056	-4.98	No
	Riverside Drive	P.M.	0.820	D	0.791	C	-0.029	-3.54	
11.	Vineland Avenue &	A.M.	1.127	F	1.051	F	-0.076	-6.74	No
	Moorpark Street	P.M.	1.056	F	1.037	F	-0.019	-1.80	
12.	Vineland Avenue &	A.M.	0.500	A	0.491	A	-0.009	-1.80	No
	Whipple Street	P.M.	0.446	A	0.437	A	-0.009	-2.02	
13.	Vineland Avenue &	A.M.	0.484	A	0.471	A	-0.013	-2.69	No
	US 101 NB Off-Ramp	P.M.	0.405	A	0.396	A	-0.009	-2.22	
14.	Vineland Avenue &	A.M.	1.027	F	0.909	E	-0.118	-11.49	No
	Ventura Boulevard	P.M.	1.049	F	0.987	E	-0.062	-5.91	
16.	Plaza Parkway &	A.M.	0.804	D	0.713	C	-0.091	-11.32	No
	Ventura Boulevard	P.M.	0.539	A	0.529	A	-0.010	-1.86	
17.	Riverton Avenue/Campo de Cahuenga Way &	A.M.	0.640	B	0.691	B	0.051	7.97	No
	Ventura Boulevard	P.M.	0.616	B	0.657	B	0.041	6.66	
18.	Lankershim Boulevard &	A.M.	0.935	E	0.916	E	-0.019	-2.03	No
	SR 134 WB Off-Ramp	P.M.	0.597	A	0.605	B	0.008	1.34	
19.	Lankershim Boulevard &	A.M.	1.259	F	1.192	F	-0.067	-5.32	No
	Riverside Drive	P.M.	1.060	F	0.995	E	-0.065	-6.13	
20.	Lankershim Boulevard &	A.M.	1.368	F	1.137	F	-0.231	-16.89	No
	Moorpark Street	P.M.	1.178	F	1.138	F	-0.040	-3.40	
21.	Lankershim Boulevard &	A.M.	0.951	E	0.889	D	-0.062	-6.52	No
	Whipple Street	P.M.	0.489	A	0.518	A	0.029	5.93	
22.	US 101 NB Ramps &	A.M.	0.235	A	0.362	A	0.127	54.04	No
	Campo de Cahuenga Way	P.M.	0.667	B	0.727	C	0.060	9.00	
23.	Metro Driveway &	A.M.	0.202	A	0.237	A	0.035	17.33	No
	Campo de Cahuenga Way	P.M.	0.607	B	0.697	B	0.090	14.83	
24.	Cahuenga Boulevard &	A.M.	1.828	F	1.809	F	-0.019	-1.04	No
	Magnolia Boulevard	P.M.	1.403	F	1.329	F	-0.074	-5.27	
25.	Cahuenga Boulevard &	A.M.	0.940	E	0.923	E	-0.017	-1.81	No
	Huston Street	P.M.	0.549	A	0.480	A	-0.069	-12.57	
26.	Cahuenga Boulevard &	A.M.	1.489	F	1.472	F	-0.017	-1.14	No
	Camarillo Street	P.M.	1.278	F	1.234	F	-0.044	-3.44	
27.	Cahuenga Boulevard &	A.M.	0.702	C	0.740	C	0.038	5.41	No
	SR 134 WB Off-Ramp	P.M.	0.555	A	0.554	A	-0.001	-0.18	
28.	Cahuenga Boulevard &	A.M.	0.924	E	0.678	B	-0.246	-26.62	No
	SR 134 EB Ramps	P.M.	0.969	E	0.899	D	-0.070	-7.22	
29.	Cahuenga Boulevard &	A.M.	1.158	F	1.019	F	-0.139	-12.00	No
	Riverside Drive	P.M.	1.291	F	1.215	F	-0.076	-5.89	
30.	Cahuenga Boulevard &	A.M.	1.047	F	0.987	E	-0.060	-5.73	Yes
	Moorpark Street	P.M.	1.117	F	1.148	F	0.031	2.78	
31.	Cahuenga Boulevard &	A.M.	0.658	B	0.578	A	-0.080	-12.16	No
	Whipple Street	P.M.	0.692	B	0.723	C	0.031	4.48	
33.	Lankershim Boulevard &	A.M.	0.837	D	0.745	C	-0.092	-10.99	No
	Cahuenga Boulevard	P.M.	0.636	B	0.602	B	-0.034	-5.35	
34.	Lankershim Boulevard &	A.M.	0.715	C	0.579	A	-0.136	-19.02	No
	Valleyheart Drive/James Stewart Avenue	P.M.	0.904	E	0.787	C	-0.117	-12.94	
35.	Lankershim Boulevard &	A.M.	0.880	D	0.726	C	-0.154	-17.50	No
	Main Street	P.M.	0.760	C	0.721	C	-0.039	-5.13	
36.	Lankershim Boulevard &	A.M.	1.034	F	1.121	F	0.087	8.41	Yes
	Campo de Cahuenga Way/Universal Hollywood Drive	P.M.	1.375	F	1.120	F	-0.255	-18.55	
37.	Lankershim Boulevard &	A.M.	0.937	E	0.730	C	-0.207	-22.09	No
	US 101 NB Off-Ramp	P.M.	0.877	D	0.647	B	-0.230	-26.23	
38.	Lankershim Boulevard &	A.M.	0.952	E	0.884	D	-0.068	-7.14	No
	Ventura Boulevard/Cahuenga Boulevard	P.M.	0.911	E	0.790	C	-0.121	-13.28	
39.	US 101 SB Ramps/Regal Place &	A.M.	0.846	D	0.817	D	-0.029	-3.43	No
	Cahuenga Boulevard	P.M.	0.810	D	0.657	B	-0.153	-18.89	
40.	Ledge Avenue/Moorpark Way &	A.M.	1.070	F	0.894	D	-0.176	-16.45	No
	Riverside Drive	P.M.	1.067	F	0.918	E	-0.149	-13.96	

Table F.1-1. Intersection Screening Analysis - Future with Alternative 10
NBC Universal
Los Angeles, California

No.	Intersection	Peak Hour	Future without Alt 10 (With Metro)		Future with Alt 10 with Funded Improvements (With Metro)		Increase in V/C due to Alt 10	% Increase	Require CO Hotspot Analysis?[1]
			V/C	LOS	V/C	LOS			
41.	Forman Avenue &	A.M.	0.798	C	0.759	C	-0.039	-4.89	No
	Riverside Drive	P.M.	0.901	E	0.855	D	-0.046	-5.11	
42.	Broadlawn Drive &	A.M.	0.661	B	0.656	B	-0.005	-0.76	No
	Cahuenga Boulevard	P.M.	0.447	A	0.490	A	0.043	9.62	
43.	Universal Center Drive/Universal Studios Boulevard &	A.M.	0.397	A	0.403	A	0.006	1.51	No
	Buddy Holly Drive	P.M.	0.892	D	0.866	D	-0.026	-2.91	
44.	Universal Studios Boulevard &	A.M.	0.668	B	0.591	A	-0.077	-11.53	No
	Cahuenga Boulevard	P.M.	0.724	C	0.658	B	-0.066	-9.12	
45.	Oakshire Drive &	A.M.	0.718	C	0.649	B	-0.069	-9.61	No
	Cahuenga Boulevard	P.M.	0.776	C	0.637	B	-0.139	-17.91	
46.	US 101 SB Ramps w/o Barham Boulevard &	A.M.	1.225	F	1.171	F	-0.054	-4.41	No
	Cahuenga Boulevard	P.M.	1.368	F	1.222	F	-0.146	-10.67	
47.	Barham Boulevard &	A.M.	1.072	F	1.079	F	0.007	0.65	No
	Cahuenga Boulevard	P.M.	1.356	F	1.322	F	-0.034	-2.51	
48.	Barham Boulevard &	A.M.	1.109	F	1.103	F	-0.006	-0.54	No
	Buddy Holly Drive/Cahuenga Boulevard	P.M.	1.323	F	0.980	E	-0.343	-25.93	
49.	Oakcrest Drive &	A.M.	0.973	E	0.962	E	-0.011	-1.13	No
	Cahuenga Boulevard	P.M.	0.723	C	0.721	C	-0.002	-0.28	
50.	Mulholland Drive &	A.M.	1.051	F	1.046	F	-0.005	-0.48	No
	Cahuenga Boulevard	P.M.	1.061	F	1.066	F	0.005	0.47	
51.	Cahuenga Boulevard &	A.M.	0.869	D	0.857	D	-0.012	-1.38	No
	Hillpark Drive	P.M.	0.725	C	0.719	C	-0.006	-0.83	
52.	Barham Boulevard &	A.M.	1.028	F	1.018	F	-0.010	-0.97	No
	De Witt Drive	P.M.	1.005	F	0.917	E	-0.088	-8.76	
53.	Barham Boulevard &	A.M.	1.168	F	1.157	F	-0.011	-0.94	No
	Lake Hollywood Drive	P.M.	1.093	F	1.094	F	0.001	0.09	
54.	Barham Boulevard &	A.M.	1.049	F	1.038	F	-0.011	-1.05	No
	Coyote Canyon Road	P.M.	0.927	E	0.896	D	-0.031	-3.34	
55.	Barham Boulevard &	A.M.	1.352	F	1.241	F	-0.111	-8.21	No
	Lakeside Plaza Drive/Forest Lawn Drive	P.M.	1.204	F	1.077	F	-0.127	-10.55	
56.	Warner Brothers Studios Gate 7/Gate 8 &	A.M.	0.732	C	0.762	C	0.030	4.10	No
	Forest Lawn Drive	P.M.	0.542	A	0.537	A	-0.005	-0.92	
57.	Memorial Drive &	A.M.	0.529	A	0.559	A	0.030	5.67	No
	Forest Lawn Drive	P.M.	0.535	A	0.534	A	-0.001	-0.19	
58.	Mount Sinai Drive &	A.M.	0.531	A	0.561	A	0.030	5.65	No
	Forest Lawn Drive	P.M.	0.443	A	0.441	A	-0.002	-0.45	
59.	Forest Lawn Drive &	A.M.	1.141	F	0.573	A	-0.568	-49.78	No
	Zoo Drive	P.M.	0.816	D	0.708	C	-0.108	-13.24	
62.	Cahuenga Boulevard/Highland Avenue &	A.M.	0.738	C	0.738	C	0.000	0.00	No
	Pat Moore Way/US 101 On-Ramps	P.M.	0.616	B	0.626	B	0.010	1.62	
63.	Highland Avenue &	A.M.	0.861	D	0.862	D	0.001	0.12	No
	Odin Street	P.M.	0.710	C	0.710	C	0.000	0.00	
64.	Highland Avenue &	A.M.	0.744	C	0.741	C	-0.003	-0.40	No
	Camrose Drive	P.M.	0.697	B	0.692	B	-0.005	-0.72	
65.	Highland Avenue &	A.M.	-	F	-	F			Yes
	Franklin Avenue	P.M.	-	F	-	F			
66.	Highland Avenue &	A.M.	-	F	-	F			Yes
	Franklin Place/Franklin Avenue	P.M.	-	F	-	F			
67.	Odin Street &	A.M.	0.571	A	0.577	A	0.006	1.05	No
	Cahuenga Boulevard	P.M.	0.771	C	0.775	C	0.004	0.52	
68.	Cahuenga Boulevard &	A.M.	0.652	B	0.663	B	0.011	1.69	No
	US 101 NB Off-Ramp	P.M.	1.071	F	1.077	F	0.006	0.56	
69.	Cahuenga Boulevard &	A.M.	0.875	D	0.870	D	-0.005	-0.57	No
	Franklin Avenue	P.M.	1.325	F	1.318	F	-0.007	-0.53	
70.	Cahuenga Boulevard &	A.M.	0.925	E	0.927	E	0.002	0.22	No
	Hollywood Boulevard	P.M.	0.825	D	0.829	D	0.004	0.48	
71.	Vine Street &	A.M.	0.665	B	0.655	B	-0.010	-1.50	No
	Franklin Avenue/US 101 SB Off-Ramp	P.M.	0.543	A	0.535	A	-0.008	-1.47	
74.	Pass Avenue &	A.M.	0.776	C	0.795	C	0.019	2.45	No
	Magnolia Boulevard	P.M.	0.889	D	0.887	D	-0.002	-0.22	
75.	Pass Avenue &	A.M.	0.866	D	0.847	D	-0.019	-2.19	No
	Verdugo Avenue	P.M.	1.203	F	1.139	F	-0.064	-5.32	
76.	Pass Avenue &	A.M.	0.526	A	0.541	A	0.015	2.85	No
	Oak Street	P.M.	0.626	B	0.627	B	0.001	0.16	
77.	Evergreen Street/Riverside Drive &	A.M.	0.740	C	0.647	B	-0.093	-12.57	No
	Alameda Avenue	P.M.	0.827	D	0.764	C	-0.063	-7.62	
78.	Pass Avenue &	A.M.	0.789	C	0.757	C	-0.032	-4.06	No
	SR 134 EB Off-Ramp	P.M.	0.696	B	0.651	B	-0.045	-6.47	
79.	Pass Avenue &	A.M.	0.987	E	0.978	E	-0.009	-0.91	No
	Alameda Avenue	P.M.	1.078	F	1.011	F	-0.067	-6.22	
80.	Pass Avenue &	A.M.	0.818	D	0.809	D	-0.009	-1.10	No
	Riverside Drive	P.M.	0.641	B	0.604	B	-0.037	-5.77	
81.	Olive Avenue &	A.M.	0.967	E	0.859	D	-0.108	-11.17	No
	Pass Avenue	P.M.	0.948	E	0.770	C	-0.178	-18.78	

Table F.1-1. Intersection Screening Analysis - Future with Alternative 10
NBC Universal
Los Angeles, California

No.	Intersection	Peak Hour	Future without Alt 10 (With Metro)		Future with Alt 10 with Funded Improvements (With Metro)		Increase in V/C due to Alt 10	% Increase	Require CO Hotspot Analysis?[1]
			V/C	LOS	V/C	LOS			
82.	Olive Avenue &	A.M.	0.807	D	0.781	C	-0.026	-3.22	No
	Warner Brothers Studios Gate 2/Gate 3	P.M.	0.853	D	0.865	D	0.012	1.41	
83.	Olive Avenue &	A.M.	0.652	B	0.648	B	-0.004	-0.61	No
	Warner Brothers Studios Gate 1/Lakeside Drive	P.M.	0.825	D	0.795	C	-0.030	-3.64	
84.	Hollywood Way &	A.M.	1.315	F	1.323	F	0.008	0.61	No
	Alameda Avenue	P.M.	1.266	F	1.272	F	0.006	0.47	
85.	Cordova Street/SR 134 WB Off-Ramp &	A.M.	1.052	F	1.055	F	0.003	0.29	No
	Alameda Avenue	P.M.	0.941	E	0.949	E	0.008	0.85	
86.	Hollywood Way &	A.M.	0.791	C	0.800	C	0.009	1.14	No
	Olive Avenue	P.M.	1.207	F	1.216	F	0.009	0.75	
87.	Olive Avenue &	A.M.	0.786	C	0.788	C	0.002	0.25	No
	Riverside Drive	P.M.	0.871	D	0.868	D	-0.003	-0.34	
88.	Lima Street &	A.M.	0.435	A	0.406	A	-0.029	-6.67	No
	Olive Avenue	P.M.	0.452	A	0.430	A	-0.022	-4.87	
89.	Olive Avenue &	A.M.	0.937	E	0.852	D	-0.085	-9.07	No
	Alameda Avenue	P.M.	1.100	F	1.061	F	-0.039	-3.55	
90.	California Street &	A.M.	0.605	B	0.606	B	0.001	0.17	No
	Riverside Drive	P.M.	0.827	D	0.825	D	-0.002	-0.24	
91.	Bob Hope Drive &	A.M.	0.985	E	0.986	E	0.001	0.10	No
	Alameda Avenue	P.M.	1.013	F	1.017	F	0.004	0.39	
92.	Buena Vista Street &	A.M.	0.937	E	0.933	E	-0.004	-0.43	No
	Alameda Avenue	P.M.	0.946	E	0.949	E	0.003	0.32	
93.	Buena Vista Street/SR 134 EB On-Ramp &	A.M.	1.075	F	1.073	F	-0.002	-0.19	No
	Riverside Drive/SR 134 WB Ramps	P.M.	1.020	F	1.019	F	-0.001	-0.10	
95.	Buena Vista Street &	A.M.	1.121	F	1.076	F	-0.045	-4.01	No
	Olive Avenue	P.M.	1.099	F	1.052	F	-0.047	-4.28	
96.	Sepulveda Boulevard &	A.M.	1.291	F	1.264	F	-0.027	-2.09	No
	Ventura Boulevard	P.M.	1.485	F	1.485	F	0.000	0.00	
97.	Noble Avenue &	A.M.	0.815	D	0.791	C	-0.024	-2.94	No
	Ventura Boulevard	P.M.	0.873	D	0.847	D	-0.026	-2.98	
98.	Kester Avenue &	A.M.	0.777	C	0.753	C	-0.024	-3.09	No
	Ventura Boulevard	P.M.	0.818	D	0.793	C	-0.025	-3.06	
99.	Willis Avenue &	A.M.	0.676	B	0.654	B	-0.022	-3.25	No
	Ventura Boulevard	P.M.	0.729	C	0.710	C	-0.019	-2.61	
100.	Cedros Avenue (West) &	A.M.	0.784	C	0.761	C	-0.023	-2.93	No
	Ventura Boulevard	P.M.	0.941	E	0.922	E	-0.019	-2.02	
101.	Cedros Avenue (East) &	A.M.	1.078	F	1.056	F	-0.022	-2.04	No
	Ventura Boulevard	P.M.	0.835	D	0.800	C	-0.035	-4.19	
102.	Van Nuys Avenue &	A.M.	1.125	F	1.103	F	-0.022	-1.96	No
	Ventura Boulevard	P.M.	1.297	F	1.278	F	-0.019	-1.46	
103.	Tyrone Avenue/Beverly Glen Boulevard &	A.M.	0.864	D	0.843	D	-0.021	-2.43	No
	Ventura Boulevard	P.M.	1.004	F	0.969	E	-0.035	-3.49	
104.	Hazeltine Avenue (West) &	A.M.	0.751	C	0.730	C	-0.021	-2.80	No
	Ventura Boulevard	P.M.	0.871	D	0.853	D	-0.018	-2.07	
105.	Stern Avenue (West) &	A.M.	0.597	A	0.577	A	-0.020	-3.35	No
	Ventura Boulevard	P.M.	0.605	B	0.587	A	-0.018	-2.98	
106.	Woodman Avenue &	A.M.	0.818	D	0.799	C	-0.019	-2.32	No
	Ventura Boulevard	P.M.	0.903	E	0.886	D	-0.017	-1.88	
107.	Sunnyslope Avenue &	A.M.	0.697	B	0.677	B	-0.020	-2.87	No
	Ventura Boulevard	P.M.	0.624	B	0.607	B	-0.017	-2.72	
108.	Dixie Canyon Avenue &	A.M.	0.665	B	0.645	B	-0.020	-3.01	No
	Ventura Boulevard	P.M.	0.701	C	0.685	B	-0.016	-2.28	
109.	Fulton Avenue &	A.M.	0.857	D	0.837	D	-0.020	-2.33	No
	Ventura Boulevard	P.M.	0.868	D	0.851	D	-0.017	-1.96	
110.	Valley Vista Boulevard/Ethel Avenue &	A.M.	0.775	C	0.758	C	-0.017	-2.19	No
	Ventura Boulevard	P.M.	0.765	C	0.749	C	-0.016	-2.09	
111.	Coldwater Canyon Avenue &	A.M.	1.217	F	1.197	F	-0.020	-1.64	No
	Ventura Boulevard	P.M.	1.491	F	1.475	F	-0.016	-1.07	
112.	Whitsett Avenue/Laurel Terrace Drive &	A.M.	0.744	C	0.725	C	-0.019	-2.55	No
	Ventura Boulevard	P.M.	0.904	E	0.888	D	-0.016	-1.77	
113.	Laurelgrove Avenue &	A.M.	0.609	B	0.592	A	-0.017	-2.79	No
	Ventura Boulevard	P.M.	0.729	C	0.715	C	-0.014	-1.92	
114.	Vantage Avenue &	A.M.	0.682	B	0.667	B	-0.015	-2.20	No
	Ventura Boulevard	P.M.	0.710	C	0.697	B	-0.013	-1.83	
115.	Laurel Canyon Boulevard &	A.M.	1.152	F	1.135	F	-0.017	-1.48	No
	Ventura Boulevard	P.M.	1.069	F	1.055	F	-0.014	-1.31	
116.	Radford Avenue/Ventura Place &	A.M.	0.649	B	0.634	B	-0.015	-2.31	No
	Ventura Boulevard	P.M.	0.640	B	0.606	B	-0.034	-5.31	
118.	Lankershim Boulevard/Tujunga Avenue &	A.M.	1.189	F	1.184	F	-0.005	-0.42	No
	Burbank Boulevard	P.M.	1.170	F	1.168	F	-0.002	-0.17	
119.	Vineland Avenue &	A.M.	0.843	D	0.840	D	-0.003	-0.36	No
	Burbank Boulevard	P.M.	0.798	C	0.793	C	-0.005	-0.63	
120.	Cahuenga Boulevard &	A.M.	1.169	F	1.147	F	-0.022	-1.88	No
	Burbank Boulevard	P.M.	1.080	F	1.074	F	-0.006	-0.56	
121.	Cahuenga Boulevard &	A.M.	0.471	A	0.455	A	-0.016	-3.40	No
	Chandler Boulevard	P.M.	0.706	C	0.695	B	-0.011	-1.56	

Table F.1-1. Intersection Screening Analysis - Future with Alternative 10
NBC Universal
Los Angeles, California

No.	Intersection	Peak Hour	Future without Alt 10 (With Metro)		Future with Alt 10 with Funded Improvements (With Metro)		Increase in V/C due to Alt 10	% Increase	Require CO Hotspot Analysis?[1]
			V/C	LOS	V/C	LOS			
122.	La Cienega Boulevard &	A.M.	0.831	D	0.832	D	0.001	0.12	No
	Sunset Boulevard	P.M.	1.218	F	1.222	F	0.004	0.33	
123.	La Cienega Boulevard &	A.M.	1.067	F	1.066	F	-0.001	-0.09	No
	Santa Monica Boulevard	P.M.	0.916	E	0.917	E	0.001	0.11	
124.	Laurel Canyon Boulevard &	A.M.	0.607	B	0.601	B	-0.006	-0.99	No
	Hollywood Boulevard	P.M.	0.754	C	0.744	C	-0.010	-1.33	
125.	Crescent Heights Boulevard &	A.M.	1.243	F	1.250	F	0.007	0.56	No
	Sunset Boulevard	P.M.	0.981	E	0.981	E	0.000	0.00	
126.	Fairfax Avenue &	A.M.	0.950	E	0.953	E	0.003	0.32	No
	Hollywood Boulevard	P.M.	0.875	D	0.875	D	0.000	0.00	
127.	Fairfax Avenue &	A.M.	0.728	C	0.730	C	0.002	0.27	No
	Sunset Boulevard	P.M.	0.949	E	0.952	E	0.003	0.32	
128.	La Brea Avenue &	A.M.	-	E	-	E			Yes
	Franklin Avenue	P.M.	-	E	-	E			
129.	La Brea Avenue &	A.M.	1.026	F	1.023	F	-0.003	-0.29	No
	Hollywood Boulevard	P.M.	0.930	E	0.924	E	-0.006	-0.65	
130.	La Brea Avenue &	A.M.	0.929	E	0.923	E	-0.006	-0.65	No
	Sunset Boulevard	P.M.	1.091	F	1.091	F	0.000	0.00	
131.	La Brea Avenue &	A.M.	1.076	F	1.079	F	0.003	0.28	No
	Fountain Avenue	P.M.	1.033	F	1.035	F	0.002	0.19	
132.	La Brea Avenue &	A.M.	0.977	E	0.979	E	0.002	0.20	No
	Santa Monica Boulevard	P.M.	1.080	F	1.083	F	0.003	0.28	
133.	Highland Avenue &	A.M.	-	F	-	F			Yes
	Hollywood Boulevard	P.M.	-	F	-	F			
134.	Highland Avenue &	A.M.	0.930	E	0.939	E	0.009	0.97	No
	Sunset Boulevard	P.M.	0.896	D	0.904	E	0.008	0.89	
135.	Highland Avenue &	A.M.	0.991	E	0.989	E	-0.002	-0.20	No
	Fountain Avenue	P.M.	0.793	C	0.794	C	0.001	0.13	
136.	Highland Avenue &	A.M.	0.918	E	0.912	E	-0.006	-0.65	No
	Santa Monica Boulevard	P.M.	0.938	E	0.929	E	-0.009	-0.96	
137.	Kester Avenue (East) &	A.M.	0.697	B	0.673	B	-0.024	-3.44	No
	Ventura Boulevard	P.M.	0.996	E	0.973	E	-0.023	-2.31	
138.	San Vicente Boulevard/Clark St &	A.M.	0.959	E	0.962	E	0.003	0.31	No
	Sunset Boulevard	P.M.	1.117	F	1.119	F	0.002	0.18	
139.	Cahuenga Boulevard &	A.M.	0.907	E	0.898	D	-0.009	-0.99	No
	Sunset Boulevard	P.M.	0.814	D	0.807	D	-0.007	-0.86	
140.	Lankershim Boulevard &	A.M.	0.594	A	0.601	B	0.007	1.18	No
	Chandler Boulevard (North)	P.M.	0.353	A	0.356	A	0.003	0.85	
141.	SR 170 SB Ramps &	A.M.	0.776	C	0.749	C	-0.027	-3.48	No
	Magnolia Boulevard	P.M.	0.606	B	0.563	A	-0.043	-7.10	
142.	SR 170 NB Ramps &	A.M.	0.551	A	0.521	A	-0.030	-5.44	No
	Magnolia Boulevard	P.M.	0.712	C	0.705	C	-0.007	-0.98	
144.	Coldwater Canyon Avenue &	A.M.	0.560	A	0.551	A	-0.009	-1.61	No
	US 101 NB Ramps	P.M.	0.551	A	0.542	A	-0.009	-1.63	
145.	Coldwater Canyon Avenue &	A.M.	0.632	B	0.623	B	-0.009	-1.42	No
	US 101 SB Ramps	P.M.	0.605	B	0.595	A	-0.010	-1.65	
146.	Coldwater Canyon Avenue &	A.M.	0.953	E	0.945	E	-0.008	-0.84	No
	Moorpark Street	P.M.	1.103	F	1.094	F	-0.009	-0.82	
147.	Laurel Canyon Boulevard &	A.M.	0.765	C	0.755	C	-0.010	-1.31	No
	US 101 NB Ramps	P.M.	0.692	B	0.682	B	-0.010	-1.45	
148.	Laurel Canyon Boulevard &	A.M.	0.735	C	0.726	C	-0.009	-1.22	No
	US 101 SB Ramps	P.M.	0.646	B	0.636	B	-0.010	-1.55	
149.	Laurel Canyon Boulevard &	A.M.	1.174	F	1.167	F	-0.007	-0.60	No
	Moorpark Street	P.M.	1.287	F	1.280	F	-0.007	-0.54	
150.	Colfax Avenue &	A.M.	1.000	E	0.991	E	-0.009	-0.90	No
	Riverside Drive	P.M.	1.005	F	0.996	E	-0.009	-0.90	
151.	Colfax Avenue &	A.M.	0.864	D	0.856	D	-0.008	-0.93	No
	Moorpark Street	P.M.	0.654	B	0.645	B	-0.009	-1.38	
152.	Lankershim Boulevard &	A.M.	0.758	C	0.766	C	0.008	1.06	No
	Chandler Boulevard (South)	P.M.	0.609	B	0.619	B	0.010	1.64	
153.	Hollywood Way &	A.M.	1.265	F	1.271	F	0.006	0.47	No
	Verdugo Avenue	P.M.	1.162	F	1.162	F	0.000	0.00	
154.	Hollywood Way &	A.M.	1.277	F	1.283	F	0.006	0.47	No
	Magnolia Boulevard	P.M.	1.053	F	1.054	F	0.001	0.09	
155.	Buena Vista Street &	A.M.	1.012	F	1.015	F	0.003	0.30	No
	Verdugo Avenue	P.M.	1.176	F	1.178	F	0.002	0.17	
156.	Buena Vista Street &	A.M.	1.068	F	1.074	F	0.006	0.56	No
	Magnolia Boulevard	P.M.	1.147	F	1.147	F	0.000	0.00	
160.	Vineland Avenue &	A.M.	0.724	C	0.580	A	-0.144	-19.89	No
	US 101 SB Ramps	P.M.	0.664	B	0.597	A	-0.067	-10.09	

P:\N\NBCUniversal\AQ EIR\modeling\CO hotspots\Alt10\future plus Alt10\[NBCU Alt10 CO hotspot screen 120613.xls]LOS Summary-Alt 10

1. SCAQMD Criteria for CO Hotspots Analysis:
   a. Intersections that change from LOS C to D as a result of Alternative 10; OR
   b. Intersections rated D or worse where Alternative 10 increases the V/C ratio by 2% or more
2. No V/C data for these intersections was available; LOS summary from Gibson provides the following note: "Traffic counts at this location was not fully representative of the situation due to downstream constraints and pedestrian conflicts. LOS is based on field observations and has not been calculated based on the Universal City Transportation Model." ENVIRON elected to perform CO hotspot analysis on these intersections. Data required for this analysis was found elswhere in the Traffic Report.

Abbreviations:
CO - Carbon monoxide
LOS - Level of Service
SCAQMD - South Coast Air Quality Management District
V/C - Volume/Capacity

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Table F.1-2. Intersection Screening Analysis - Existing with Alternative 10
NBC Universal
Los Angeles, California

SUMMARY OF INTERSECTION LEVEL OF SERVICE ANALYSIS - ALTERNATIVE 10

No.		Intersection	Peak Hour	Existing Conditions		Existing with Alt 10 with Funded Improvements		Change in V/C due to Alt10	% Increase	Require CO Hotspot Analysis?[1]
				V/C	LOS	V/C	LOS			
1.	[a]	Colfax Avenue &	A.M.	0.580	A	0.565	A	-0.015	-2.586	No
		Ventura Boulevard	P.M.	0.840	D	0.827	D	-0.013	-1.548	
2.	[a]	Kraft Avenue/SR 170 SB Off-Ramp &	A.M.	0.471	A	0.455	A	-0.016	-3.397	No
		Riverside Drive	P.M.	0.425	A	0.410	A	-0.015	-3.529	
3.	[a]	Tujunga Avenue &	A.M.	0.944	E	0.930	E	-0.014	-1.483	No
		Riverside Drive/Camarillo Street	P.M.	0.849	D	0.833	D	-0.016	-1.885	
4.	[a]	Tujunga Avenue &	A.M.	0.487	A	0.472	A	-0.015	-3.080	No
		Ventura Boulevard	P.M.	0.659	B	0.649	B	-0.010	-1.517	
5.	[a]	Eureka Drive &	A.M.	0.464	A	0.452	A	-0.012	-2.586	No
		Ventura Boulevard	P.M.	0.552	A	0.541	A	-0.011	-1.993	
6.	[a]	Lankershim Boulevard &	A.M.	0.799	C	0.797	C	-0.002	-0.250	No
		Magnolia Boulevard	P.M.	0.726	C	0.721	C	-0.005	-0.689	
7.	[a]	Studio City Place &	A.M.	0.411	A	0.400	A	-0.011	-2.676	No
		Ventura Boulevard	P.M.	0.562	A	0.552	A	-0.010	-1.779	
8.	[a]	Vineland Avenue &	A.M.	0.513	A	0.509	A	-0.004	-0.780	No
		Magnolia Boulevard	P.M.	0.734	C	0.728	C	-0.006	-0.817	
9.	[a]	Vineland Avenue/Lankershim Boulevard &	A.M.	0.933	E	0.905	E	-0.028	-3.001	No
		Camarillo Street	P.M.	0.725	C	0.708	C	-0.017	-2.345	
10.	[a]	Vineland Avenue &	A.M.	0.809	D	0.787	C	-0.022	-2.719	No
		Riverside Drive	P.M.	0.559	A	0.550	A	-0.009	-1.610	
11.	[a]	Vineland Avenue &	A.M.	0.871	D	0.811	D	-0.060	-6.889	No
		Moorpark Street	P.M.	0.793	C	0.719	C	-0.074	-9.332	
12.	[a]	Vineland Avenue &	A.M.	0.433	A	0.423	A	-0.010	-2.309	No
		Whipple Street	P.M.	0.364	A	0.354	A	-0.010	-2.747	
13.	[a]	Vineland Avenue &	A.M.	0.307	A	0.294	A	-0.013	-4.235	No
		US 101 NB Off-Ramp	P.M.	0.282	A	0.273	A	-0.009	-3.191	
14.	[a]	Vineland Avenue &	A.M.	0.687	B	0.629	B	-0.058	-8.443	No
		Ventura Boulevard	P.M.	0.821	D	0.760	C	-0.061	-7.430	
16.	[a]	Plaza Parkway &	A.M.	0.538	A	0.497	A	-0.041	-7.621	No
		Ventura Boulevard	P.M.	0.381	A	0.371	A	-0.010	-2.625	
17.	[a]	Riverton Avenue/Campo de Cahuenga Way &	A.M.	0.444	A	0.496	A	0.052	11.712	No
		Ventura Boulevard	P.M.	0.406	A	0.457	A	0.051	12.562	
18.	[a]	Lankershim Boulevard &	A.M.	0.681	B	0.661	B	-0.020	-2.937	No
		SR 134 WB Off-Ramp	P.M.	0.429	A	0.437	A	0.008	1.865	
19.	[a]	Lankershim Boulevard &	A.M.	0.850	D	0.816	D	-0.034	-4.000	No
		Riverside Drive	P.M.	0.775	C	0.722	C	-0.053	-6.839	
20.	[a]	Lankershim Boulevard &	A.M.	1.033	F	0.850	D	-0.183	-17.715	No
		Moorpark Street	P.M.	0.847	D	0.847	D	0.000	0.000	
21.	[a]	Lankershim Boulevard &	A.M.	0.722	C	0.693	B	-0.029	-4.017	No
		Whipple Street	P.M.	0.317	A	0.347	A	0.030	9.464	
22.	[a]	US 101 NB Ramps &	A.M.	0.077	A	0.181	A	0.104	135.065	No
		Campo de Cahuenga Way	P.M.	0.408	A	0.468	A	0.060	14.706	
23.	[a]	Metro Driveway &	A.M.	0.000	A	0.123	A	0.123	#DIV/0!	No
		Campo de Cahuenga Way	P.M.	0.231	A	0.346	A	0.115	49.784	
24.	[a]	Cahuenga Boulevard &	A.M.	1.141	F	1.123	F	-0.018	-1.578	No
		Magnolia Boulevard	P.M.	0.963	E	0.895	D	-0.068	-7.061	
25.	[a]	Cahuenga Boulevard &	A.M.	0.712	C	0.695	B	-0.017	-2.388	No
		Huston Street	P.M.	0.463	A	0.395	A	-0.068	-14.687	
26.	[a]	Cahuenga Boulevard &	A.M.	0.989	E	0.972	E	-0.017	-1.719	No
		Camarillo Street	P.M.	0.649	B	0.580	A	-0.069	-10.632	
27.	[a]	Cahuenga Boulevard &	A.M.	0.465	A	0.504	A	0.039	8.387	No
		SR 134 WB Off-Ramp	P.M.	0.408	A	0.401	A	-0.007	-1.716	
28.	[a]	Cahuenga Boulevard &	A.M.	0.666	B	0.564	A	-0.102	-15.315	No
		SR 134 EB Ramps	P.M.	0.550	A	0.479	A	-0.071	-12.909	
29.	[a]	Cahuenga Boulevard &	A.M.	0.671	B	0.605	B	-0.066	-9.836	No
		Riverside Drive	P.M.	0.741	C	0.725	C	-0.016	-2.159	
30.	[a]	Cahuenga Boulevard &	A.M.	0.624	B	0.563	A	-0.061	-9.776	No
		Moorpark Street	P.M.	0.576	A	0.607	B	0.031	5.382	
31.	[a]	Cahuenga Boulevard &	A.M.	0.382	A	0.302	A	-0.080	-20.942	No
		Whipple Street	P.M.	0.251	A	0.259	A	0.008	3.187	
33.	[a]	Lankershim Boulevard &	A.M.	0.484	A	0.414	A	-0.070	-14.463	No
		Cahuenga Boulevard	P.M.	0.354	A	0.320	A	-0.034	-9.605	
34.	[a]	Lankershim Boulevard &	A.M.	0.329	A	0.262	A	-0.067	-20.365	No
		Valleyheart Drive/James Stewart Avenue	P.M.	0.356	A	0.403	A	0.047	13.202	
35.	[a]	Lankershim Boulevard &	A.M.	0.431	A	0.330	A	-0.101	-23.434	No
		Main Street	P.M.	0.390	A	0.422	A	0.032	8.205	
36.	[a]	Lankershim Boulevard &	A.M.	0.517	A	0.480	A	-0.037	-7.157	No
		Campo de Cahuenga Way/Universal Hollywood Drive	P.M.	0.531	A	0.518	A	-0.013	-2.448	
37.	[a]	Lankershim Boulevard &	A.M.	0.520	A	0.432	A	-0.088	-16.923	No
		US 101 NB Off-Ramp	P.M.	0.445	A	0.334	A	-0.111	-24.944	
38.	[a], [b]	Lankershim Boulevard &	A.M.	0.723	C	0.637	B	-0.086	-11.895	No
		Ventura Boulevard/Cahuenga Boulevard	P.M.	0.624	B	0.489	A	-0.135	-21.635	
39.	[a]	US 101 SB Ramps/Regal Place &	A.M.	0.607	B	0.579	A	-0.028	-4.613	No
		Cahuenga Boulevard	P.M.	0.528	A	0.376	A	-0.152	-28.788	
40.	[a]	Ledge Avenue/Moorpark Way &	A.M.	0.627	B	0.601	B	-0.026	-4.147	No
		Riverside Drive	P.M.	0.636	B	0.601	B	-0.035	-5.503	

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No.		Intersection	Peak Hour	Existing Conditions		Existing with Alt 10 with Funded Improvements		Change in V/C due to Alt10	% Increase	Require CO Hotspot Analysis?[1]
				V/C	LOS	V/C	LOS			
41.	[a]	Forman Avenue &	A.M.	0.449	A	0.411	A	-0.038	-8.463	No
		Riverside Drive	P.M.	0.536	A	0.507	A	-0.029	-5.410	
42.	[a]	Broadlawn Drive &	A.M.	0.487	A	0.483	A	-0.004	-0.821	No
		Cahuenga Boulevard	P.M.	0.307	A	0.297	A	-0.010	-3.257	
43.	[a]	Universal Center Drive/Universal Studios Boulevard &	A.M.	0.065	A	0.071	A	0.006	9.231	No
		Buddy Holly Drive	P.M.	0.159	A	0.189	A	0.030	18.868	
44.	[a]	Universal Studios Boulevard &	A.M.	0.473	A	0.424	A	-0.049	-10.359	No
		Cahuenga Boulevard	P.M.	0.329	A	0.303	A	-0.026	-7.903	
45.	[a]	Oakshire Drive &	A.M.	0.529	A	0.485	A	-0.044	-8.318	No
		Cahuenga Boulevard	P.M.	0.396	A	0.349	A	-0.047	-11.869	
46.	[a]	US 101 SB Ramps w/o Barham Boulevard &	A.M.	0.952	E	0.953	E	0.001	0.105	No
		Cahuenga Boulevard	P.M.	0.643	B	0.697	B	0.054	8.398	
47.	[a]	Barham Boulevard &	A.M.	1.146	F	0.875	D	-0.271	-23.647	No
		Cahuenga Boulevard	P.M.	1.047	F	0.849	D	-0.198	-18.911	
48.	[a]	Barham Boulevard &	A.M.	0.796	C	0.790	C	-0.006	-0.754	No
		Buddy Holly Drive/Cahuenga Boulevard	P.M.	0.747	C	0.744	C	-0.003	-0.402	
49.	[a]	Oakcrest Drive &	A.M.	0.753	C	0.743	C	-0.010	-1.328	No
		Cahuenga Boulevard	P.M.	0.494	A	0.492	A	-0.002	-0.405	
50.	[a]	Mulholland Drive &	A.M.	0.736	C	0.726	C	-0.010	-1.359	No
		Cahuenga Boulevard	P.M.	0.668	B	0.672	B	0.004	0.599	
51.	[a]	Cahuenga Boulevard &	A.M.	0.659	B	0.647	B	-0.012	-1.821	No
		Hillpark Drive	P.M.	0.521	A	0.516	A	-0.005	-0.960	
52.	[a]	Barham Boulevard &	A.M.	0.813	D	0.718	C	-0.095	-11.685	No
		De Witt Drive	P.M.	0.698	B	0.700	B	0.002	0.287	
53.	[a]	Barham Boulevard &	A.M.	0.820	D	0.809	D	-0.011	-1.341	No
		Lake Hollywood Drive	P.M.	0.826	D	0.828	D	0.002	0.242	
54.	[a]	Barham Boulevard &	A.M.	0.745	C	0.734	C	-0.011	-1.477	No
		Coyote Canyon Road	P.M.	0.668	B	0.667	B	-0.001	-0.150	
55.	[a]	Barham Boulevard &	A.M.	0.973	E	0.883	D	-0.090	-9.250	No
		Lakeside Plaza Drive/Forest Lawn Drive	P.M.	0.880	D	0.775	C	-0.105	-11.932	
56.	[a]	Warner Brothers Studios Gate 7/Gate 8 &	A.M.	0.496	A	0.526	A	0.030	6.048	No
		Forest Lawn Drive	P.M.	0.436	A	0.444	A	0.008	1.835	
57.	[a]	Memorial Drive &	A.M.	0.372	A	0.402	A	0.030	8.065	No
		Forest Lawn Drive	P.M.	0.434	A	0.432	A	-0.002	-0.461	
58.	[a]	Mount Sinai Drive &	A.M.	0.385	A	0.415	A	0.030	7.792	No
		Forest Lawn Drive	P.M.	0.378	A	0.377	A	-0.001	-0.265	
59.	[a]	Forest Lawn Drive &	A.M.	0.801	D	0.347	A	-0.454	-56.679	No
		Zoo Drive	P.M.	0.570	A	0.484	A	-0.086	-15.088	
62.	[a]	Cahuenga Boulevard/Highland Avenue &	A.M.	0.519	A	0.519	A	0.000	0.000	No
		Pat Moore Way/US 101 On-Ramps	P.M.	0.463	A	0.473	A	0.010	2.160	
63.	[a]	Highland Avenue &	A.M.	0.643	B	0.643	B	0.000	0.000	No
		Odin Street	P.M.	0.523	A	0.531	A	0.008	1.530	
64.	[a]	Highland Avenue &	A.M.	0.586	A	0.598	A	0.012	2.048	No
		Camrose Drive	P.M.	0.511	A	0.506	A	-0.005	-0.978	
65.	[a], [c]	Highland Avenue &	A.M.	-	F	-	F			Yes
		Franklin Avenue	P.M.	-	F	-	F			
66.	[a], [c]	Highland Avenue &	A.M.	-	F	-	F			Yes
		Franklin Place/Franklin Avenue	P.M.	-	F	-	F			
67.	[a]	Odin Street &	A.M.	0.725	C	0.738	C	0.013	1.793	No
		Cahuenga Boulevard	P.M.	1.163	F	1.168	F	0.005	0.430	
68.	[a]	Cahuenga Boulevard &	A.M.	0.425	A	0.433	A	0.008	1.882	No
		US 101 NB Off-Ramp	P.M.	0.754	C	0.760	C	0.006	0.796	
69.	[a]	Cahuenga Boulevard &	A.M.	0.739	C	0.730	C	-0.009	-1.218	No
		Franklin Avenue	P.M.	1.170	F	1.163	F	-0.007	-0.598	
70.	[a]	Cahuenga Boulevard &	A.M.	0.764	C	0.765	C	0.001	0.131	No
		Hollywood Boulevard	P.M.	0.661	B	0.665	B	0.004	0.605	
71.	[a]	Vine Street &	A.M.	0.343	A	0.333	A	-0.010	-2.915	No
		Franklin Avenue/US 101 SB Off-Ramp	P.M.	0.459	A	0.452	A	-0.007	-1.525	
74.		Pass Avenue &	A.M.	0.406	A	0.425	A	0.019	4.680	No
		Magnolia Boulevard	P.M.	0.529	A	0.527	A	-0.002	-0.378	
75.		Pass Avenue &	A.M.	0.477	A	0.453	A	-0.024	-5.031	No
		Verdugo Avenue	P.M.	0.590	A	0.547	A	-0.043	-7.288	
76.		Pass Avenue &	A.M.	0.369	A	0.385	A	0.016	4.336	No
		Oak Street	P.M.	0.425	A	0.427	A	0.002	0.471	
77.	[d]	Evergreen Street/Riverside Drive &	A.M.	0.530	A	0.437	A	-0.093	-17.547	No
		Alameda Avenue	P.M.	0.595	A	0.532	A	-0.063	-10.588	
78.		Pass Avenue &	A.M.	0.499	A	0.467	A	-0.032	-6.413	No
		SR 134 EB Off-Ramp	P.M.	0.508	A	0.459	A	-0.049	-9.646	
79.	[d]	Pass Avenue &	A.M.	0.599	A	0.577	A	-0.022	-3.673	No
		Alameda Avenue	P.M.	0.713	C	0.659	B	-0.054	-7.574	
80.	[d]	Pass Avenue &	A.M.	0.461	A	0.452	A	-0.009	-1.952	No
		Riverside Drive	P.M.	0.363	A	0.346	A	-0.017	-4.683	
81.	[d]	Olive Avenue &	A.M.	0.673	B	0.668	B	-0.005	-0.743	No
		Pass Avenue	P.M.	0.747	C	0.660	B	-0.087	-11.647	

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No.		Intersection	Peak Hour	Existing Conditions		Existing with Alt 10 with Funded Improvements		Change in V/C due to Alt10	% Increase	Require CO Hotspot Analysis?[1]
				V/C	LOS	V/C	LOS			
82.	[d]	Olive Avenue &	A.M.	0.430	A	0.429	A	-0.001	-0.233	No
		Warner Brothers Studios Gate 2/Gate 3	P.M.	0.501	A	0.514	A	0.013	2.595	
83.	[d]	Olive Avenue &	A.M.	0.655	B	0.460	A	-0.195	-29.771	No
		Warner Brothers Studios Gate 1/Lakeside Drive	P.M.	0.744	C	0.531	A	-0.213	-28.629	
84.	[d]	Hollywood Way &	A.M.	0.773	C	0.783	C	0.010	1.294	No
		Alameda Avenue	P.M.	0.749	C	0.777	C	0.028	3.738	
85.	[d]	Cordova Street/SR 134 WB Off-Ramp &	A.M.	0.641	B	0.643	B	0.002	0.312	No
		Alameda Avenue	P.M.	0.503	A	0.510	A	0.007	1.392	
86.	[d]	Hollywood Way &	A.M.	0.550	A	0.558	A	0.008	1.455	No
		Olive Avenue	P.M.	0.681	B	0.690	B	0.009	1.322	
87.	[d]	Olive Avenue &	A.M.	0.602	B	0.609	B	0.007	1.163	No
		Riverside Drive	P.M.	0.572	A	0.570	A	-0.002	-0.350	
88.	[d]	Lima Street &	A.M.	0.434	A	0.396	A	-0.038	-8.756	No
		Olive Avenue	P.M.	0.396	A	0.363	A	-0.033	-8.333	
89.	[d]	Olive Avenue &	A.M.	0.598	A	0.512	A	-0.086	-14.381	No
		Alameda Avenue	P.M.	0.502	A	0.473	A	-0.029	-5.777	
90.		California Street &	A.M.	0.335	A	0.336	A	0.001	0.299	No
		Riverside Drive	P.M.	0.353	A	0.351	A	-0.002	-0.567	
91.	[d]	Bob Hope Drive &	A.M.	0.622	B	0.623	B	0.001	0.161	No
		Alameda Avenue	P.M.	0.636	B	0.640	B	0.004	0.629	
92.	[d]	Buena Vista Street &	A.M.	0.750	C	0.745	C	-0.005	-0.667	No
		Alameda Avenue	P.M.	0.838	D	0.843	D	0.005	0.597	
93.		Buena Vista Street/SR 134 EB On-Ramp &	A.M.	0.777	C	0.775	C	-0.002	-0.257	No
		Riverside Drive/SR 134 WB Ramps	P.M.	0.809	D	0.807	D	-0.002	-0.247	
95.	[d]	Buena Vista Street &	A.M.	0.796	C	0.754	C	-0.042	-5.276	No
		Olive Avenue	P.M.	0.776	C	0.728	C	-0.048	-6.186	
96.	[a], [b]	Sepulveda Boulevard &	A.M.	1.024	F	1.005	F	-0.019	-1.855	No
		Ventura Boulevard	P.M.	1.221	F	1.221	F	0.000	0.000	
97.	[a]	Noble Avenue &	A.M.	0.579	A	0.555	A	-0.024	-4.145	No
		Ventura Boulevard	P.M.	0.707	C	0.671	B	-0.036	-5.092	
98.	[a]	Kester Avenue &	A.M.	0.663	B	0.639	B	-0.024	-3.620	No
		Ventura Boulevard	P.M.	0.635	B	0.547	A	-0.088	-13.858	
99.	[a]	Willis Avenue &	A.M.	0.434	A	0.411	A	-0.023	-5.300	No
		Ventura Boulevard	P.M.	0.549	A	0.439	A	-0.110	-20.036	
100.	[a]	Cedros Avenue (West) &	A.M.	0.551	A	0.529	A	-0.022	-3.993	No
		Ventura Boulevard	P.M.	0.782	C	0.636	B	-0.146	-18.670	
101.	[a]	Cedros Avenue (East) &	A.M.	0.805	D	0.782	C	-0.023	-2.857	No
		Ventura Boulevard	P.M.	0.699	B	0.664	B	-0.035	-5.007	
102.	[a]	Van Nuys Avenue &	A.M.	0.849	D	0.811	D	-0.038	-4.476	No
		Ventura Boulevard	P.M.	1.003	F	0.984	E	-0.019	-1.894	
103.	[a]	Tyrone Avenue/Beverly Glen Boulevard &	A.M.	0.564	A	0.543	A	-0.021	-3.723	No
		Ventura Boulevard	P.M.	0.772	C	0.737	C	-0.035	-4.534	
104.	[a]	Hazeltine Avenue (West) &	A.M.	0.674	B	0.638	B	-0.036	-5.341	No
		Ventura Boulevard	P.M.	0.619	B	0.602	B	-0.017	-2.746	
105.	[a]	Stern Avenue (West) &	A.M.	0.419	A	0.383	A	-0.036	-8.592	No
		Ventura Boulevard	P.M.	0.427	A	0.409	A	-0.018	-4.215	
106.	[a], [b]	Woodman Avenue &	A.M.	0.588	A	0.553	A	-0.035	-5.952	No
		Ventura Boulevard	P.M.	0.587	A	0.570	A	-0.017	-2.896	
107.	[a]	Sunnyslope Avenue &	A.M.	0.374	A	0.355	A	-0.019	-5.080	No
		Ventura Boulevard	P.M.	0.399	A	0.372	A	-0.027	-6.767	
108.	[a]	Dixie Canyon Avenue &	A.M.	0.415	A	0.396	A	-0.019	-4.578	No
		Ventura Boulevard	P.M.	0.491	A	0.458	A	-0.033	-6.721	
109.	[a]	Fulton Avenue &	A.M.	0.603	B	0.583	A	-0.020	-3.317	No
		Ventura Boulevard	P.M.	0.645	B	0.629	B	-0.016	-2.481	
110.	[a]	Valley Vista Boulevard/Ethel Avenue &	A.M.	0.493	A	0.476	A	-0.017	-3.448	No
		Ventura Boulevard	P.M.	0.519	A	0.491	A	-0.028	-5.395	
111.	[a]	Coldwater Canyon Avenue &	A.M.	0.859	D	0.838	D	-0.021	-2.445	No
		Ventura Boulevard	P.M.	1.073	F	1.058	F	-0.015	-1.398	
112.	[a]	Whitsett Avenue/Laurel Terrace Drive &	A.M.	0.555	A	0.536	A	-0.019	-3.423	No
		Ventura Boulevard	P.M.	0.661	B	0.646	B	-0.015	-2.269	
113.	[a]	Laurelgrove Avenue &	A.M.	0.459	A	0.443	A	-0.016	-3.486	No
		Ventura Boulevard	P.M.	0.548	A	0.535	A	-0.013	-2.372	
114.	[a]	Vantage Avenue &	A.M.	0.509	A	0.494	A	-0.015	-2.947	No
		Ventura Boulevard	P.M.	0.533	A	0.503	A	-0.030	-5.629	
115.	[a], [b]	Laurel Canyon Boulevard &	A.M.	0.869	D	0.851	D	-0.018	-2.071	No
		Ventura Boulevard	P.M.	0.873	D	0.850	D	-0.023	-2.635	
116.	[a]	Radford Avenue/Ventura Place &	A.M.	0.494	A	0.478	A	-0.016	-3.239	No
		Ventura Boulevard	P.M.	0.574	A	0.619	B	0.045	7.840	
118.	[a]	Lankershim Boulevard/Tujunga Avenue &	A.M.	0.719	C	0.713	C	-0.006	-0.834	No
		Burbank Boulevard	P.M.	0.835	D	0.833	D	-0.002	-0.240	
119.	[a]	Vineland Avenue &	A.M.	0.805	D	0.802	D	-0.003	-0.373	No
		Burbank Boulevard	P.M.	0.756	C	0.747	C	-0.009	-1.190	
120.	[a]	Cahuenga Boulevard &	A.M.	0.587	A	0.566	A	-0.021	-3.578	No
		Burbank Boulevard	P.M.	0.649	B	0.643	B	-0.006	-0.924	
121.	[a]	Cahuenga Boulevard &	A.M.	0.293	A	0.277	A	-0.016	-5.461	No
		Chandler Boulevard	P.M.	0.478	A	0.417	A	-0.061	-12.762	

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				V/C	LOS	V/C	LOS			
122.		La Cienega Boulevard &	A.M.	0.683	B	0.689	B	0.006	0.878	No
		Sunset Boulevard	P.M.	1.031	F	1.035	F	0.004	0.388	
123.	[b]	La Cienega Boulevard &	A.M.	0.979	E	0.978	E	-0.001	-0.102	No
		Santa Monica Boulevard	P.M.	0.863	D	0.863	D	0.000	0.000	
124.	[a]	Laurel Canyon Boulevard &	A.M.	0.457	A	0.451	A	-0.006	-1.313	No
		Hollywood Boulevard	P.M.	0.670	B	0.660	B	-0.010	-1.493	
125.	[a]	Crescent Heights Boulevard &	A.M.	0.955	E	0.963	E	0.008	0.838	No
		Sunset Boulevard	P.M.	0.840	D	0.840	D	0.000	0.000	
126.	[a]	Fairfax Avenue &	A.M.	0.794	C	0.797	C	0.003	0.378	No
		Hollywood Boulevard	P.M.	0.683	B	0.683	B	0.000	0.000	
127.	[a]	Fairfax Avenue &	A.M.	0.581	A	0.582	A	0.001	0.172	No
		Sunset Boulevard	P.M.	0.709	C	0.711	C	0.002	0.282	
128.	[a], [c]	La Brea Avenue &	A.M.	-	E	-	E			Yes
		Franklin Avenue	P.M.	-	E	-	E			
129.	[a]	La Brea Avenue &	A.M.	0.831	D	0.828	D	-0.003	-0.361	No
		Hollywood Boulevard	P.M.	0.773	C	0.768	C	-0.005	-0.647	
130.	[a]	La Brea Avenue &	A.M.	0.767	C	0.761	C	-0.006	-0.782	No
		Sunset Boulevard	P.M.	0.830	D	0.830	D	0.000	0.000	
131.		La Brea Avenue &	A.M.	0.921	E	0.923	E	0.002	0.217	No
		Fountain Avenue	P.M.	0.868	D	0.873	D	0.005	0.576	
132.		La Brea Avenue &	A.M.	0.809	D	0.812	D	0.003	0.371	No
		Santa Monica Boulevard	P.M.	0.844	D	0.852	D	0.008	0.948	
133.	[a], [c]	Highland Avenue &	A.M.	-	F	-	F			Yes
		Hollywood Boulevard	P.M.	-	F	-	F			
134.	[a]	Highland Avenue &	A.M.	0.612	B	0.621	B	0.009	1.471	No
		Sunset Boulevard	P.M.	0.651	B	0.658	B	0.007	1.075	
135.	[a]	Highland Avenue &	A.M.	0.834	D	0.832	D	-0.002	-0.240	No
		Fountain Avenue	P.M.	0.658	B	0.659	B	0.001	0.152	
136.	[a], [b]	Highland Avenue &	A.M.	0.776	C	0.770	C	-0.006	-0.773	No
		Santa Monica Boulevard	P.M.	0.805	D	0.797	C	-0.008	-0.994	
137.	[a]	Kester Avenue (East) &	A.M.	0.515	A	0.492	A	-0.023	-4.466	No
		Ventura Boulevard	P.M.	0.885	D	0.862	D	-0.023	-2.599	
138.		San Vicente Boulevard/Clark St &	A.M.	0.829	D	0.831	D	0.002	0.241	No
		Sunset Boulevard	P.M.	0.944	E	0.945	E	0.001	0.106	
139.	[a]	Cahuenga Boulevard &	A.M.	0.802	D	0.792	C	-0.010	-1.247	No
		Sunset Boulevard	P.M.	0.706	C	0.698	B	-0.008	-1.133	
140.	[a]	Lankershim Boulevard &	A.M.	0.343	A	0.351	A	0.008	2.332	No
		Chandler Boulevard (North)	P.M.	0.186	A	0.193	A	0.007	3.763	
141.	[a]	SR 170 SB Ramps &	A.M.	0.515	A	0.487	A	-0.028	-5.437	No
		Magnolia Boulevard	P.M.	0.488	A	0.465	A	-0.023	-4.713	
142.	[a]	SR 170 NB Ramps &	A.M.	0.360	A	0.331	A	-0.029	-8.056	No
		Magnolia Boulevard	P.M.	0.435	A	0.428	A	-0.007	-1.609	
144.	[a]	Coldwater Canyon Avenue &	A.M.	0.416	A	0.406	A	-0.010	-2.404	No
		US 101 NB Ramps	P.M.	0.440	A	0.430	A	-0.010	-2.273	
145.	[a]	Coldwater Canyon Avenue &	A.M.	0.485	A	0.476	A	-0.009	-1.856	No
		US 101 SB Ramps	P.M.	0.449	A	0.439	A	-0.010	-2.227	
146.	[a]	Coldwater Canyon Avenue &	A.M.	0.749	C	0.741	C	-0.008	-1.068	No
		Moorpark Street	P.M.	0.844	D	0.834	D	-0.010	-1.185	
147.	[a]	Laurel Canyon Boulevard &	A.M.	0.580	A	0.570	A	-0.010	-1.724	No
		US 101 NB Ramps	P.M.	0.515	A	0.505	A	-0.010	-1.942	
148.	[a]	Laurel Canyon Boulevard &	A.M.	0.518	A	0.508	A	-0.010	-1.931	No
		US 101 SB Ramps	P.M.	0.541	A	0.531	A	-0.010	-1.848	
149.	[a]	Laurel Canyon Boulevard &	A.M.	0.919	E	0.910	E	-0.009	-0.979	No
		Moorpark Street	P.M.	1.077	F	1.070	F	-0.007	-0.650	
150.	[a]	Colfax Avenue &	A.M.	0.853	D	0.845	D	-0.008	-0.938	No
		Riverside Drive	P.M.	0.709	C	0.701	C	-0.008	-1.128	
151.	[a]	Colfax Avenue &	A.M.	0.739	C	0.731	C	-0.008	-1.083	No
		Moorpark Street	P.M.	0.569	A	0.559	A	-0.010	-1.757	
152.	[a]	Lankershim Boulevard &	A.M.	0.480	A	0.488	A	0.008	1.667	No
		Chandler Boulevard (South)	P.M.	0.337	A	0.346	A	0.009	2.671	
153.	[d]	Hollywood Way &	A.M.	0.814	D	0.824	D	0.010	1.229	No
		Verdugo Avenue	P.M.	0.800	C	0.799	C	-0.001	-0.125	
154.	[d]	Hollywood Way &	A.M.	0.806	D	0.812	D	0.006	0.744	No
		Magnolia Boulevard	P.M.	0.869	D	0.872	D	0.003	0.345	
155.	[d]	Buena Vista Street &	A.M.	0.601	B	0.603	B	0.002	0.333	No
		Verdugo Avenue	P.M.	0.731	C	0.733	C	0.002	0.274	
156.	[d]	Buena Vista Street &	A.M.	0.576	A	0.581	A	0.005	0.868	No
		Magnolia Boulevard	P.M.	0.846	D	0.847	D	0.001	0.118	
160.		Vineland Avenue &	A.M.	0.527	A	0.475	A	-0.052	-9.867	No
		US 101 SB Ramps	P.M.	0.369	A	0.324	A	-0.045	-12.195	

1. SCAQMD Criteria for CO Hotspots Analysis:
   a. Intersections that change from LOS C to D as a result of Alternative 10; OR
   b. Intersections rated D or worse where Alternative 10 increases the V/C ratio by 2% or more

2. No V/C data for these intersections was available; LOS summary from Gibson provides the following note: "Traffic counts at this location was not fully representative of the situation due to downstream constraints and pedestrian conflicts. LOS is based on field observations and has not been calculated based on the Universal City Transportation Model." ENVIRON elected to perform CO hotspot analysis on these intersections. Data required for this analysis was found elswhere in the Traffic Report.

Abbreviations:
CO - Carbon monoxide
LOS - Level of Service
SCAQMD - South Coast Air Quality Management District
V/C - Volume/Capacity

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Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

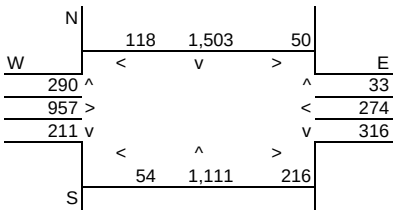
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

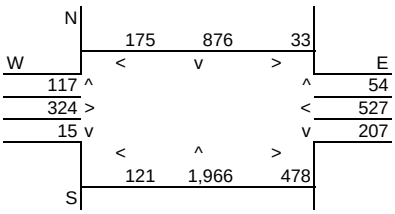
Intersection:	Cahuenga Boulevard & Moorpark Street
Analysis Condition:	Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Cahuenga Boulevard	At Grade	4	5	5
East-West Roadway:	Moorpark Street	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,411	N-S Road:	3,663
E-W Road:	1,904	E-W Road:	1,623

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 Reference CO Concentrations E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	3,411	1.96	0.79	0.47	0.36	0.25
East-West Road	3.7	2.7	2.2	1.7	1,904	1.96	0.14	0.10	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	3,663	1.96	0.85	0.50	0.39	0.27
East-West Road	3.7	2.7	2.2	1.7	1,623	1.96	0.12	0.09	0.07	0.05

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011.

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hou

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.5	7.6	7.3
25 Feet from Roadway Edge	7.2	7.2	7.0
50 Feet from Roadway Edge	7.0	7.1	6.9
100 Feet from Roadway Edge	6.9	6.9	6.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

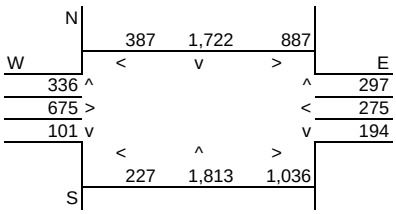
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

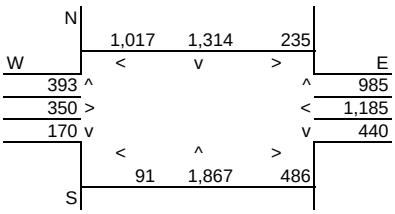
Intersection: Lankershim Boulevard & Campo de Cahuenga Way/Universal Hollywood Drive
Analysis Condition: Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Lankershim Boulevard	At Grade	6	5	5
East-West Roadway:	Campo de Cahuenga Way/U	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,442	N-S Road:	5,811
E-W Road:	3,364	E-W Road:	3,681

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 Reference CO Concentrations E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,442	1.96	1.01	0.65	0.52	0.37
East-West Road	3.3	2.6	2.2	1.7	3,364	1.96	0.22	0.17	0.14	0.11
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,811	1.96	1.08	0.69	0.56	0.40
East-West Road	3.3	2.6	2.2	1.7	3,681	1.96	0.24	0.19	0.16	0.12

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011.

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hou

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.8	7.9	7.5
25 Feet from Roadway Edge	7.4	7.5	7.2
50 Feet from Roadway Edge	7.3	7.3	7.1
100 Feet from Roadway Edge	7.1	7.1	7.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Vision Plan

Background Information

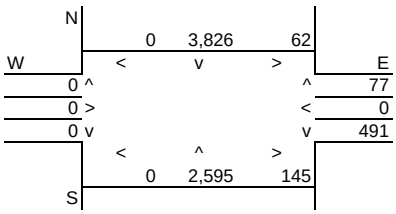
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

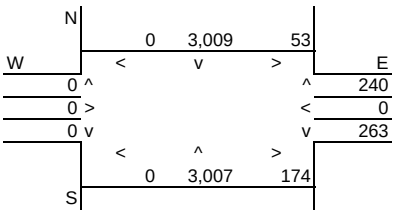
Intersection: Highland Avenue & Franklin Avenue
Analysis Condition: Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland Avenue	At Grade	6	5	5
East-West Roadway:	Franklin Avenue	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	7,057	N-S Road:	6,453
E-W Road:	775	E-W Road:	730

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 Reference CO Concentrations E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	7,057	1.96	1.31	0.84	0.68	0.48
East-West Road	3.7	2.7	2.2	1.7	775	1.96	0.06	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	6,453	1.96	1.20	0.77	0.62	0.44
East-West Road	3.7	2.7	2.2	1.7	730	1.96	0.05	0.04	0.03	0.02

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011.

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	8.0	7.9	7.6
25 Feet from Roadway Edge	7.5	7.4	7.2
50 Feet from Roadway Edge	7.3	7.3	7.1
100 Feet from Roadway Edge	7.1	7.1	7.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Vision Plan

Background Information

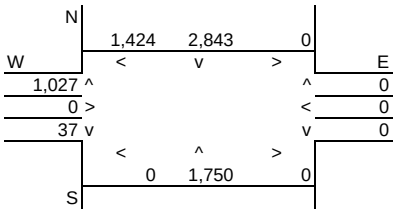
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

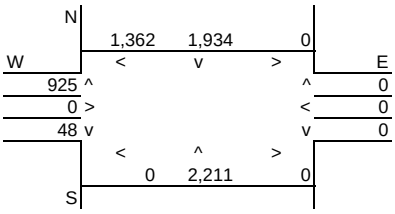
Intersection:	Highland Avenue & Franklin Place/Franklin Avenue
Analysis Condition:	Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland Avenue	At Grade	6	5	5
East-West Roadway:	Franklin Place/Franklin Aven	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	7,044	N-S Road:	6,432
E-W Road:	2,488	E-W Road:	2,335

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 Reference CO Concentrations E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	7,044	1.96	1.31	0.84	0.68	0.48
East-West Road	3.7	2.7	2.2	1.7	2,488	1.96	0.18	0.13	0.11	0.08
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	6,432	1.96	1.20	0.77	0.62	0.44
East-West Road	3.7	2.7	2.2	1.7	2,335	1.96	0.17	0.12	0.10	0.08

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor)
Background 8-hour Concentration2

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	8.1	8.0	7.6
25 Feet from Roadway Edge	7.6	7.5	7.3
50 Feet from Roadway Edge	7.4	7.3	7.1
100 Feet from Roadway Edge	7.2	7.1	7.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution

Background Information

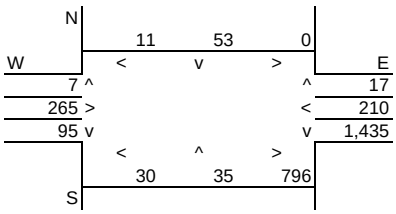
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

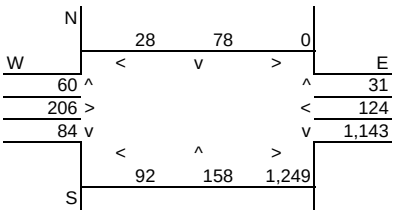
Intersection: La Brea and Franklin
Analysis Condition: Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	La Brea	At Grade	4	5	5
East-West Roadway:	Franklin	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,444	N-S Road:	2,804
E-W Road:	2,723	E-W Road:	2,753

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 Reference CO Concentrations E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,444	1.96	0.16	0.12	0.11	0.08
East-West Road	9.5	6.1	4.9	3.5	2,723	1.96	0.51	0.33	0.26	0.19
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,804	1.96	0.65	0.38	0.30	0.21
East-West Road	2.8	2.3	2.0	1.7	2,753	1.96	0.15	0.12	0.11	0.09

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor)
+ Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.3	7.4	7.2
25 Feet from Roadway Edge	7.1	7.1	7.0
50 Feet from Roadway Edge	7.0	7.0	6.9
100 Feet from Roadway Edge	6.9	6.9	6.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-1. Simplified CALINE4 CO Analysis for Future with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution

Background Information

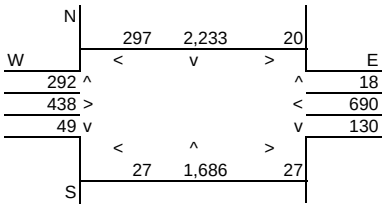
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	6.6
Background 8-hour CO Concentration (ppm):	6.6
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

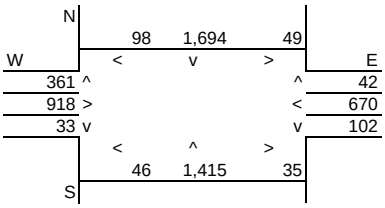
Intersection: Highland and Hollywood
Analysis Condition: Future (2030) Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland	At Grade	6	5	5
East-West Roadway:	Hollywood	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,546	N-S Road:	3,659
E-W Road:	1,793	E-W Road:	2,126

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,546	1.96	0.85	0.54	0.44	0.31
East-West Road	3.3	2.6	2.2	1.7	1,793	1.96	0.12	0.09	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,659	1.96	0.68	0.44	0.35	0.25
East-West Road	3.3	2.6	2.2	1.7	2,126	1.96	0.14	0.11	0.09	0.07

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2011.

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hou

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.6	7.4	7.3
25 Feet from Roadway Edge	7.2	7.1	7.0
50 Feet from Roadway Edge	7.1	7.0	7.0
100 Feet from Roadway Edge	7.0	6.9	6.9

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-2. Simplified CALINE4 CO Analysis for Existing with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

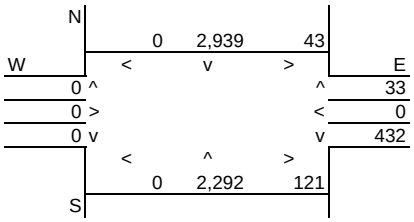
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	4.0
Background 8-hour CO Concentration (ppm):	3.5
Persistence Factor:	0.7
Analysis Year:	2006

Roadway Data

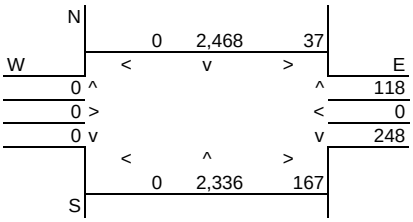
Intersection: Highland Avenue & Franklin Avenue
Analysis Condition: Existing (2006) Plus Project Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland Avenue	At Grade	6	5	5
East-West Roadway:	Franklin Avenue	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,784	N-S Road:	5,219
E-W Road:	629	E-W Road:	570

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,784	10.36	5.69	3.66	2.94	2.10
East-West Road	3.7	2.7	2.2	1.7	629	10.36	0.24	0.18	0.14	0.11
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,219	10.36	5.14	3.30	2.65	1.89
East-West Road	3.7	2.7	2.2	1.7	570	10.36	0.22	0.16	0.13	0.10

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentratic

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	9.9	9.4	7.7
25 Feet from Roadway Edge	7.8	7.5	6.2
50 Feet from Roadway Edge	7.1	6.8	5.7
100 Feet from Roadway Edge	6.2	6.0	5.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-2. Simplified CALINE4 CO Analysis for Existing with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

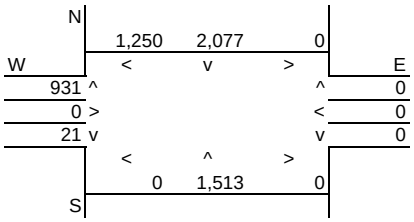
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	4.0
Background 8-hour CO Concentration (ppm):	3.5
Persistence Factor:	0.7
Analysis Year:	2006

Roadway Data

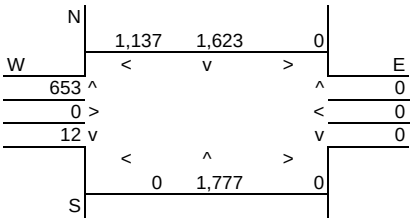
Intersection: Highland Avenue & Franklin Place/Franklin Avenue
Analysis Condition: Existing (2006) Plus Project Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland Avenue	At Grade	6	5	5
East-West Roadway:	Franklin Place/Franklin Aven	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,771	N-S Road:	5,190
E-W Road:	2,202	E-W Road:	1,802

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,771	10.36	5.68	3.65	2.93	2.09
East-West Road	3.7	2.7	2.2	1.7	2,202	10.36	0.84	0.62	0.50	0.39
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	5,190	10.36	5.11	3.28	2.64	1.88
East-West Road	3.7	2.7	2.2	1.7	1,802	10.36	0.69	0.50	0.41	0.32

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentratic

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	10.5	9.8	8.1
25 Feet from Roadway Edge	8.3	7.8	6.5
50 Feet from Roadway Edge	7.4	7.0	5.9
100 Feet from Roadway Edge	6.5	6.2	5.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-2. Simplified CALINE4 CO Analysis for Existing with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

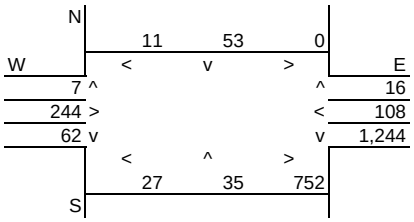
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	4.0
Background 8-hour CO Concentration (ppm):	3.5
Persistence Factor:	0.7
Analysis Year:	2006

Roadway Data

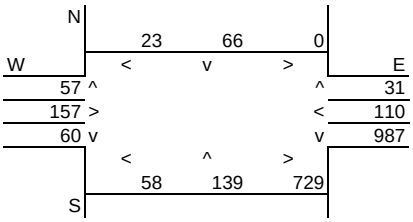
Intersection: La Brea and Franklin
Analysis Condition: Existing (2006) Plust Project Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	La Brea	At Grade	4	5	5
East-West Roadway:	Franklin	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,173	N-S Road:	2,039
E-W Road:	2,364	E-W Road:	2,014

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,173	10.36	0.74	0.59	0.50	0.38
East-West Road	9.5	6.1	4.9	3.5	2,364	10.36	2.33	1.49	1.20	0.86
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,039	10.36	2.51	1.48	1.14	0.80
East-West Road	2.8	2.3	2.0	1.7	2,014	10.36	0.58	0.48	0.42	0.35

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentratio

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.1	7.1	5.7
25 Feet from Roadway Edge	6.1	6.0	5.0
50 Feet from Roadway Edge	5.7	5.6	4.7
100 Feet from Roadway Edge	5.2	5.2	4.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.2-2. Simplified CALINE4 CO Analysis for Existing with Alternative 10 Conditions
NBC Universal
Los Angeles, California

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Universal Evolution Plan

Background Information

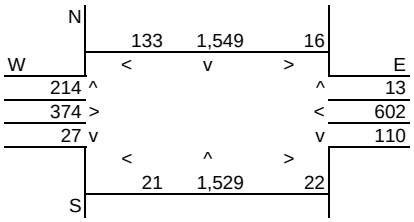
Nearest Air Monitoring Station measuring CO:	Burbank
Background 1-hour CO Concentration (ppm):	4.0
Background 8-hour CO Concentration (ppm):	3.5
Persistence Factor:	0.7
Analysis Year:	2006

Roadway Data

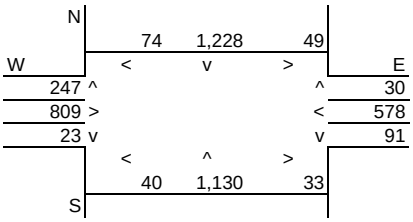
Intersection: Highland and Hollywood
Analysis Condition: Existing (2006) Plust Project Traffic Conditions

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Highland	At Grade	6	5	5
East-West Roadway:	Hollywood	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,454	N-S Road:	2,758
E-W Road:	1,371	E-W Road:	1,771

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,454	10.36	3.40	2.18	1.75	1.25
East-West Road	3.3	2.6	2.2	1.7	1,371	10.36	0.47	0.37	0.31	0.24
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,758	10.36	2.72	1.74	1.40	1.00
East-West Road	3.3	2.6	2.2	1.7	1,771	10.36	0.61	0.48	0.40	0.31

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentratio

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.9	7.3	6.2
25 Feet from Roadway Edge	6.6	6.2	5.3
50 Feet from Roadway Edge	6.1	5.8	4.9
100 Feet from Roadway Edge	5.5	5.3	4.5

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Table F.3-1. EMFAC Model Output Files - Alternative 10
NBC Universal
Los Angeles, California

EMFAC 2011
2030 Estimated Annual Emission Rates
EMFAC 2011 Vehicle Categories
STATEWIDE TOTALS

Area	Calendar Year	Season	Vehicle Class	Fuel	Vehicle Model Year	Speed	Population	Vehicle Mile Travelled	Trips	CO Running Exhaust
						(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)	(gms/mile)
Statewide Totals	2030	Annual	LDA	GAS	AllMYr	5	0	1309350.6	0	1.135858407
Statewide Totals	2030	Annual	LDA	DSL	AllMYr	5	0	5614.3511	0	0.15094416
Statewide Totals	2030	Annual	LDT1	GAS	AllMYr	5	0	180281.05	0	1.849168857
Statewide Totals	2030	Annual	LDT1	DSL	AllMYr	5	0	256.43936	0	0.124195963
Statewide Totals	2030	Annual	LDT2	GAS	AllMYr	5	0	517790.43	0	1.393365632
Statewide Totals	2030	Annual	LDT2	DSL	AllMYr	5	0	216.53988	0	0.190248628
Statewide Totals	2030	Annual	LHD1	GAS	AllMYr	5	0	567987.47	0	1.410260201
Statewide Totals	2030	Annual	LHD1	DSL	AllMYr	5	0	231117.72	0	2.490139702
Statewide Totals	2030	Annual	LHD2	GAS	AllMYr	5	0	47455.6	0	0.713754004
Statewide Totals	2030	Annual	LHD2	DSL	AllMYr	5	0	54750.03	0	2.328076416
Statewide Totals	2030	Annual	MCY	GAS	AllMYr	5	0	16675.474	0	23.81531461
Statewide Totals	2030	Annual	MDV	GAS	AllMYr	5	0	415418.61	0	2.103498234
Statewide Totals	2030	Annual	MDV	DSL	AllMYr	5	0	396.76138	0	0.124098744
Statewide Totals	2030	Annual	MH	GAS	AllMYr	5	0	15536.755	0	1.091718673
Statewide Totals	2030	Annual	MH	DSL	AllMYr	5	0	2487.9152	0	1.96795851
Statewide Totals	2030	Annual	Motor Coach	DSL	AllMYr	5	0	2076.6502	0	4.716136808
Statewide Totals	2030	Annual	OBUS	GAS	AllMYr	5	0	5160.3542	0	1.912812744
Statewide Totals	2030	Annual	SBUS	GAS	AllMYr	5	0	2224.4375	0	13.77280643
Statewide Totals	2030	Annual	SBUS	DSL	AllMYr	5	0	4988.8938	0	3.242631935
Statewide Totals	2030	Annual	T6 Ag	DSL	AllMYr	5	0	2111.3481	0	2.148418417
Statewide Totals	2030	Annual	T6 CAIRP heavy	DSL	AllMYr	5	0	112.59194	0	1.855698453
Statewide Totals	2030	Annual	T6 CAIRP small	DSL	AllMYr	5	0	393.10315	0	1.764383454
Statewide Totals	2030	Annual	T6 instate construction heavy	DSL	AllMYr	5	0	4070.7387	0	2.051001608
Statewide Totals	2030	Annual	T6 instate construction small	DSL	AllMYr	5	0	11716.206	0	1.866325222
Statewide Totals	2030	Annual	T6 instate heavy	DSL	AllMYr	5	0	17144.241	0	2.046706006
Statewide Totals	2030	Annual	T6 instate small	DSL	AllMYr	5	0	49507.457	0	1.862382941
Statewide Totals	2030	Annual	T6 OOS heavy	DSL	AllMYr	5	0	64.551309	0	1.855698453
Statewide Totals	2030	Annual	T6 OOS small	DSL	AllMYr	5	0	225.37423	0	1.764383454
Statewide Totals	2030	Annual	T6 Public	DSL	AllMYr	5	0	3057.9568	0	1.546266182
Statewide Totals	2030	Annual	T6 utility	DSL	AllMYr	5	0	416.46646	0	1.486231352
Statewide Totals	2030	Annual	T6TS	GAS	AllMYr	5	0	18402.059	0	1.764377614
Statewide Totals	2030	Annual	T7 Ag	DSL	AllMYr	5	0	2426.6405	0	5.016963164
Statewide Totals	2030	Annual	T7 CAIRP	DSL	AllMYr	5	0	28875.858	0	5.146425497
Statewide Totals	2030	Annual	T7 CAIRP construction	DSL	AllMYr	5	0	1525.7566	0	5.147224329
Statewide Totals	2030	Annual	T7 NNOOS	DSL	AllMYr	5	0	32484.261	0	4.461578967
Statewide Totals	2030	Annual	T7 NOOS	DSL	AllMYr	5	0	10515.854	0	5.146381274
Statewide Totals	2030	Annual	T7 other port	DSL	AllMYr	5	0	1065.0759	0	6.195513859
Statewide Totals	2030	Annual	T7 POAK	DSL	AllMYr	5	0	3871.091	0	6.195513859
Statewide Totals	2030	Annual	T7 POLA	DSL	AllMYr	5	0	8860.3201	0	6.195513859
Statewide Totals	2030	Annual	T7 Public	DSL	AllMYr	5	0	1280.9587	0	3.218920489
Statewide Totals	2030	Annual	T7 Single	DSL	AllMYr	5	0	8099.27	0	4.147716556
Statewide Totals	2030	Annual	T7 single construction	DSL	AllMYr	5	0	3946.9316	0	4.122093787
Statewide Totals	2030	Annual	T7 SWCV	DSL	AllMYr	5	0	2153.0754	0	3.717416544
Statewide Totals	2030	Annual	T7 tractor	DSL	AllMYr	5	0	34668.141	0	5.19309171
Statewide Totals	2030	Annual	T7 tractor construction	DSL	AllMYr	5	0	2942.7292	0	5.217099106
Statewide Totals	2030	Annual	T7 utility	DSL	AllMYr	5	0	127.69556	0	3.369165948
Statewide Totals	2030	Annual	T7IS	GAS	AllMYr	5	0	1583.6156	0	121.591014
Statewide Totals	2030	Annual	UBUS	GAS	AllMYr	5	0	5318.8033	0	25.46984272
Statewide Totals	2030	Annual	UBUS	DSL	AllMYr	5	0	20469.335	0	7.215751433
Statewide Totals	2030	Annual	All Other Buses	DSL	AllMYr	5	0	3781.1687	0	2.183498943

Table F.3-2. EMFAC Model Output Files - Alternative 10
NBC Universal
Los Angeles, California

EMFAC 2011
2006 Estimated Annual Emission Rates
EMFAC 2011 Vehicle Categories
STATEWIDE TOTALS

Area	Calendar Year	Season	Vehicle Class	Fuel	Vehicle Model Year	Speed	Population	Vehicle Mile Travelled	Trips	CO Running Exhaust
						(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)	(gms/mile)
Statewide Totals	2006	Annual	LDA	GAS	AllMYr	5	0	761750.72	0	8.557202385
Statewide Totals	2006	Annual	LDA	DSL	AllMYr	5	0	3173.8364	0	2.938855346
Statewide Totals	2006	Annual	LDT1	GAS	AllMYr	5	0	109836.18	0	28.3787247
Statewide Totals	2006	Annual	LDT1	DSL	AllMYr	5	0	163.39193	0	3.134111704
Statewide Totals	2006	Annual	LDT2	GAS	AllMYr	5	0	305369.34	0	10.12466096
Statewide Totals	2006	Annual	LDT2	DSL	AllMYr	5	0	137.66825	0	2.875916148
Statewide Totals	2006	Annual	LHD1	GAS	AllMYr	5	0	400141.01	0	18.64632951
Statewide Totals	2006	Annual	LHD1	DSL	AllMYr	5	0	168858.97	0	3.18688199
Statewide Totals	2006	Annual	LHD2	GAS	AllMYr	5	0	38224.919	0	37.61085262
Statewide Totals	2006	Annual	LHD2	DSL	AllMYr	5	0	44417.929	0	3.089695206
Statewide Totals	2006	Annual	MCY	GAS	AllMYr	5	0	8129.2411	0	43.63341931
Statewide Totals	2006	Annual	MDV	GAS	AllMYr	5	0	249989.38	0	9.419405669
Statewide Totals	2006	Annual	MDV	DSL	AllMYr	5	0	128.89736	0	3.122297493
Statewide Totals	2006	Annual	MH	GAS	AllMYr	5	0	10823.819	0	110.7036008
Statewide Totals	2006	Annual	MH	DSL	AllMYr	5	0	1557.2599	0	2.700139946
Statewide Totals	2006	Annual	Motor Coach	DSL	AllMYr	5	0	1427.9805	0	16.26500804
Statewide Totals	2006	Annual	OBUS	GAS	AllMYr	5	0	4567.3476	0	28.80397852
Statewide Totals	2006	Annual	SBUS	GAS	AllMYr	5	0	1667.9111	0	214.1999939
Statewide Totals	2006	Annual	SBUS	DSL	AllMYr	5	0	6377.1094	0	6.797961722
Statewide Totals	2006	Annual	T6 Ag	DSL	AllMYr	5	0	2525.9486	0	8.115972352
Statewide Totals	2006	Annual	T6 CAIRP heavy	DSL	AllMYr	5	0	80.872116	0	6.0683487
Statewide Totals	2006	Annual	T6 CAIRP small	DSL	AllMYr	5	0	285.01503	0	5.321760376
Statewide Totals	2006	Annual	T6 instate construction heavy	DSL	AllMYr	5	0	3044.3601	0	7.719399999
Statewide Totals	2006	Annual	T6 instate construction small	DSL	AllMYr	5	0	9011.8814	0	6.199066024
Statewide Totals	2006	Annual	T6 instate heavy	DSL	AllMYr	5	0	11571.93	0	7.686316049
Statewide Totals	2006	Annual	T6 instate small	DSL	AllMYr	5	0	34332.71	0	6.153264033
Statewide Totals	2006	Annual	T6 OOS heavy	DSL	AllMYr	5	0	46.36567	0	6.0683487
Statewide Totals	2006	Annual	T6 OOS small	DSL	AllMYr	5	0	163.40506	0	5.321760376
Statewide Totals	2006	Annual	T6 Public	DSL	AllMYr	5	0	2058.6908	0	4.389482609
Statewide Totals	2006	Annual	T6 utility	DSL	AllMYr	5	0	264.04663	0	3.510759204
Statewide Totals	2006	Annual	T6TS	GAS	AllMYr	5	0	9566.6424	0	92.69488117
Statewide Totals	2006	Annual	T7 Ag	DSL	AllMYr	5	0	2899.5646	0	19.5773242
Statewide Totals	2006	Annual	T7 CAIRP	DSL	AllMYr	5	0	16970.694	0	18.98039104
Statewide Totals	2006	Annual	T7 CAIRP construction	DSL	AllMYr	5	0	1154.8319	0	18.98039104
Statewide Totals	2006	Annual	T7 NNOOS	DSL	AllMYr	5	0	19091.397	0	12.35754407
Statewide Totals	2006	Annual	T7 NOOS	DSL	AllMYr	5	0	6180.2957	0	18.98039104
Statewide Totals	2006	Annual	T7 other port	DSL	AllMYr	5	0	806.98022	0	25.9677678
Statewide Totals	2006	Annual	T7 POAK	DSL	AllMYr	5	0	1318.2009	0	26.66456859
Statewide Totals	2006	Annual	T7 POLA	DSL	AllMYr	5	0	2590.2712	0	27.64750609
Statewide Totals	2006	Annual	T7 Public	DSL	AllMYr	5	0	841.32073	0	11.01865691
Statewide Totals	2006	Annual	T7 Single	DSL	AllMYr	5	0	4649.0017	0	13.01605323
Statewide Totals	2006	Annual	T7 single construction	DSL	AllMYr	5	0	2987.3981	0	12.69018165
Statewide Totals	2006	Annual	T7 SWCV	DSL	AllMYr	5	0	1365.0119	0	11.57757814
Statewide Totals	2006	Annual	T7 tractor	DSL	AllMYr	5	0	20581.131	0	20.1380387
Statewide Totals	2006	Annual	T7 tractor construction	DSL	AllMYr	5	0	2227.326	0	20.18691704
Statewide Totals	2006	Annual	T7 utility	DSL	AllMYr	5	0	80.575123	0	7.70881706
Statewide Totals	2006	Annual	T7IS	GAS	AllMYr	5	0	761.38408	0	378.6687754
Statewide Totals	2006	Annual	UBUS	GAS	AllMYr	5	0	3872.5515	0	99.57587765
Statewide Totals	2006	Annual	UBUS	DSL	AllMYr	5	0	16945.976	0	13.17709888
Statewide Totals	2006	Annual	All Other Buses	DSL	AllMYr	5	0	2691.985	0	9.001371235

Appendix G

GHG Emission Estimates

Table G.1. Emission Factors Used to Estimate GHG Emissions (Studio, Entertainment, and Business Areas)
NBCUniversal
Los Angeles, California

Off-Road Equipment	CO_2e Emission Factor (lb/hr) [1]
Aerial Lifts	34.7
Air Compressors	63.6
Bore/Drill Rigs	164.9
Cement and Mortar Mixers	7.2
Concrete/Industrial Saws	58.5
Cranes	128.7
Crawler Tractors	114.0
Crushing/Proc. Equipment	132.3
Dumpers/Tenders	7.6
Excavators	119.6
Forklifts	54.4
Generator Sets	61.0
Graders	132.7
Off-Highway Tractors	151.5
Off-Highway Trucks	260.1
Other Construction Equipment	122.8
Other General Industrial Equipment	152.2
Other Material Handling Equipment	141.2
Pavers	77.9
Paving Equipment	69.0
Plate Compactors	4.3
Pressure Washers	9.4
Pumps	49.6
Rollers	67.1
Rough Terrain Forklifts	70.3
Rubber Tired Dozers	239.1
Rubber Tired Loaders	108.6
Scrapers	262.5
Signal Boards	16.7
Skid Steer Loaders	30.3
Surfacing Equipment	166.0
Sweepers/Scrubbers	78.5
Tractors/Loaders/Backhoes	66.8
Trenchers	58.7
Welders	25.6

On-Road Heavy Duty Trucks	CO_2e Emission Factor (lb/mile) [2,3]
Heavy-Heavy-Duty Diesel Trucks	4.21

1) All offroad construction equipment emission factors are derived from SCAQMD Off-road Mobile Emission Factors [online]. Available http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html accessed [accessed 06 Nov 2009]. Note: Not all equipment listed here will be used for construction.

2) All onroad construction equipment emission factors are derived from SCAQMD On-road Mobile Emission Factors [online]. Available http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html [accessed 06 Nov 2009].

3) The contrubtion of CH_4 and N_2O for diesel engines is likely small, less than 1%, and therefore it is assumed CO_2 is equal to CO_2e (California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1.).

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Table G.2. Total CO_2e Construction Emissions for Alternative 10
NBCUniversal
Los Angeles, California

Construction Zones	Onsite	Offsite	Total
	Metric tonnes CO_2e		
A	1,188	3,853	5,041
B	1,950	7,832	9,782
C	1,564	4,642	6,206
D	4,299	8,202	12,501
E	2,806	5,509	8,315
F	2,141	5,573	7,714
G	3,321	11,736	15,057
H	1,472	1,672	3,144
I	530	485	1,015
J	413	140	554
Total CO_2e Construction Emissions from Studio, Entertainment, and Business Areas	**19,684**	**49,644**	**69,328**

1) The CO_2e construction emissions are shown for each construction zone consistent with the approach used by the Air Technical Report. The CO_2e emissions are reported by construction zone to parallel the estimates for criteria pollutant emissions. However, since climate change is a global issue, the maximum total emissions from all construction zones.

2) The CO_2e construction emissions are based on the detailed calculations as included in Air Quality evauation for Alternative 10.

3) The CO_2e construction emissions include onsite and offsite mobile sources (e.g., construction equipment, worker commutes, vendor trips, haul trips, etc.) and include contributions of CH_4 and N_2O emissions for gasoline based engines (USEPA, Emission Facts; Greenhouse Gas Emissions from a Typical Passenger Vehicle, Office of Transportation and Air Quality [online]. Available: http://www.epa.gov/otaq/climate/420f05004.pdf [accessed 03 Oct. 2009]). The contribution of CH_4 and N_2O for diesel engines is likely small, less than 1%, and therefore it is assumed CO_2 is equal to CO_2e (California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1.).

Appendix H

Modeling Files

Table H.1-1 List of Modeling Files - Alternative 10
NBCUniversal
Los Angeles, California

Modeling Activity	Description	File Name
Studio, Entertainment and Business Area Construction	DAT model file of Construction Exhaust	ConVol_Alt10.dat
	LST model file of Construction Exhaust Volume Sources	ConVol_Alt10.isl
	XOQ Values for ConVol_Alt10.dat	Xoq, va, 1-hr, 1st high.plt
		Xoq, va, 8-hr, 1st high.plt
		Xoq, va, 24-hr, 1st high.plt
		Xoq, va, period.plt
		Xoq, vb, 1-hr, 1st high.plt
		Xoq, vb, 8-hr, 1st high.plt
		Xoq, vb, 24-hr, 1st high.plt
		Xoq, vb, period.plt
		Xoq, vc, 1-hr, 1st high.plt
		Xoq, vc, 8-hr, 1st high.plt
		Xoq, vc, 24-hr, 1st high.plt
		Xoq, vc, period.plt
		Xoq, vd, 1-hr, 1st high.plt
		Xoq, vd, 8-hr, 1st high.plt
		Xoq, vd, 24-hr, 1st high.plt
		Xoq, vd, period.plt
		Xoq, ve, 1-hr, 1st high.plt
		Xoq, ve, 8-hr, 1st high.plt
		Xoq, ve, 24-hr, 1st high.plt
		Xoq, ve, period.plt
		Xoq, vf, 1-hr, 1st high.plt
		Xoq, vf, 8-hr, 1st high.plt
		Xoq, vf, 24-hr, 1st high.plt
		Xoq, vf, period.plt
		Xoq, vg, 1-hr, 1st high.plt
		Xoq, vg, 8-hr, 1st high.plt
		Xoq, vg, 24-hr, 1st high.plt
		Xoq, vg, period.plt
		Xoq, vh, 1-hr, 1st high.plt
		Xoq, vh, 8-hr, 1st high.plt
		Xoq, vh, 24-hr, 1st high.plt
		Xoq, vh, period.plt
		Xoq, vi, 1-hr, 1st high.plt
		Xoq, vi, 8-hr, 1st high.plt
		Xoq, vi, 24-hr, 1st high.plt
		Xoq, vi, period.plt
		Xoq, vj, 1-hr, 1st high.plt
		Xoq, vj, 8-hr, 1st high.plt
		Xoq, vj, 24-hr, 1st high.plt
		Xoq, vj, period.plt
	DAT model file for Area Sources	ConArea_Alt10.dat
	LST model file for ConArea_Alt10.dat	ConArea_Alt10.isl
	XOQ Values for ConArea_Alt10.dat	AA`24`FIRST.plt
		AA`PERIOD.plt
		AB`24`FIRST.plt
		AB`PERIOD.plt
		AC`24`FIRST.plt
		AC`PERIOD.plt
		AD`24`FIRST.plt
		AD`PERIOD.plt
		AE`24`FIRST.plt
		AE`PERIOD.plt
		AF`24`FIRST.plt
		AF`PERIOD.plt
		AG`24`FIRST.plt
		AG`PERIOD.plt
		AH`24`FIRST.plt
		AH`PERIOD.plt
		AI`24`FIRST.plt
		AI`PERIOD.plt
		AJ`24`FIRST.plt
		AJ`PERIOD.plt

Table H.1-1 List of Modeling Files - Alternative 10
NBCUniversal
Los Angeles, California

Modeling Activity	Description	File Name
	Model file for Alternative 10 Trams	Alt10Trams.dat
	Model file for Alternative 10 Delivery Trucks	Alt10Trucks.dat
	LST file for Alt10Trams.dat	Alt10Trams.isl
	LST file for Alt10Trucks.dat	Alt10Trucks.isl
	XOQ Values for Alt10Trams.dat	Xoq, l00, 8-hr, 1st high.plt
		Xoq, l00, 24-hr, 1st high.plt
		Xoq, l00, period.plt
		Xoq, l00, 1-hr, 1st high.plt
	XOQ Values for Alt10Trucks.dat	Xoq, dt7, 8-hr, 1st high.plt
		Xoq, dt7, 24-hr, 1st high.plt
		Xoq, dt7, period.plt
		Xoq, dt7, 1-hr, 1st high.plt
Alternative 10 Building Operation Sources	Model File for New Building Sources in Future Year	Alt10_BldgArea.dat
	LST File for Alt10_BldgArea.dat	Alt10_BldgArea.isl
	XOQ Values for Alt10_BldgArea.dat	Xoq, aa, 1-hr, 1st high.plt
		Xoq, aa, 8-hr, 1st high.plt
		Xoq, aa, 24-hr, 1st high.plt
		Xoq, aa, period.plt
		Xoq, ab, 1-hr, 1st high.plt
		Xoq, ab, 8-hr, 1st high.plt
		Xoq, ab, 24-hr, 1st high.plt
		Xoq, ab, period.plt
		Xoq, ac, 1-hr, 1st high.plt
		Xoq, ac, 8-hr, 1st high.plt
		Xoq, ac, 24-hr, 1st high.plt
		Xoq, ac, period.plt
		Xoq, ad, 1-hr, 1st high.plt
		Xoq, ad, 8-hr, 1st high.plt
		Xoq, ad, 24-hr, 1st high.plt
		Xoq, ad, period.plt
		Xoq, ae, 1-hr, 1st high.plt
		Xoq, ae, 8-hr, 1st high.plt
		Xoq, ae, 24-hr, 1st high.plt
		Xoq, ae, period.plt
		Xoq, af, 1-hr, 1st high.plt
		Xoq, af, 8-hr, 1st high.plt
		Xoq, af, 24-hr, 1st high.plt
		Xoq, af, period.plt
		Xoq, ag, 1-hr, 1st high.plt
		Xoq, ag, 8-hr, 1st high.plt
		Xoq, ag, 24-hr, 1st high.plt
		Xoq, ag, period.plt
		Xoq, ah, 1-hr, 1st high.plt
		Xoq, ah, 8-hr, 1st high.plt
		Xoq, ah, 24-hr, 1st high.plt
		Xoq, ah, period.plt
		Xoq, ai, 1-hr, 1st high.plt
		Xoq, ai, 8-hr, 1st high.plt
		Xoq, ai, 24-hr, 1st high.plt
		Xoq, ai, period.plt
		Xoq, aj, 1-hr, 1st high.plt
		Xoq, aj, 8-hr, 1st high.plt
		Xoq, aj, 24-hr, 1st high.plt
		Xoq, aj, period.plt
Baseline Operation at the Existing Childcare Center	Model file for Base Year Carts	BaseCarts.dat
	Model file for Base Year Cooling Towers	BaseCT.dat
	Model file for Base Year Ops *(stationary sources)*	BaseOps.dat
	Model file for Base Year Trams	BaseTrams.dat
	Model file for Base Year Delivery Trucks	BaseTrucks.dat
	LST file for BaseCarts.dat	BaseCarts.isl
	LST file for BaseCT.dat	BaseCT.isl

Table H.1-1 List of Modeling Files - Alternative 10
NBCUniversal
Los Angeles, California

Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	LST file for BaseOps.dat	BaseOps.isl
	LST file for BaseTrams.dat	BaseTrams.isl
	LST file for BaseTrucks.dat	BaseTrucks.isl
	XOQ Values for BaseOps.dat	Sel_poll, d59886, 1-hr, 1st high.plt
		Sel_poll, d59886, 8-hr, 1st high.plt
		Sel_poll, d59886, 24-hr, 1st high.plt
		Sel_poll, d59886, period.plt
		Sel_poll, d80818, 1-hr, 1st high.plt
		Sel_poll, d80818, 8-hr, 1st high.plt
		Sel_poll, d80818, 24-hr, 1st high.plt
		Sel_poll, d80818, period.plt
		Sel_poll, d88950, 1-hr, 1st high.plt
		Sel_poll, d88950, 8-hr, 1st high.plt
		Sel_poll, d88950, 24-hr, 1st high.plt
		Sel_poll, d88950, period.plt
		Sel_poll, d92538, 1-hr, 1st high.plt
		Sel_poll, d92538, 8-hr, 1st high.plt
		Sel_poll, d92538, 24-hr, 1st high.plt
		Sel_poll, d92538, period.plt
		Sel_poll, f01255, 1-hr, 1st high.plt
		Sel_poll, f01255, 8-hr, 1st high.plt
		Sel_poll, f01255, 24-hr, 1st high.plt
		Sel_poll, f01255, period.plt
		Sel_poll, f01256, 1-hr, 1st high.plt
		Sel_poll, f01256, 8-hr, 1st high.plt
		Sel_poll, f01256, 24-hr, 1st high.plt
		Sel_poll, f01256, period.plt
		Sel_poll, f02630, 1-hr, 1st high.plt
		Sel_poll, f02630, 8-hr, 1st high.plt
		Sel_poll, f02630, 24-hr, 1st high.plt
		Sel_poll, f02630, period.plt
		Sel_poll, f12919, 1-hr, 1st high.plt
		Sel_poll, f12919, 8-hr, 1st high.plt
		Sel_poll, f12919, 24-hr, 1st high.plt
		Sel_poll, f12919, period.plt
		Sel_poll, f41128, 1-hr, 1st high.plt
		Sel_poll, f41128, 8-hr, 1st high.plt
		Sel_poll, f41128, 24-hr, 1st high.plt
		Sel_poll, f41128, period.plt
		Sel_poll, f41129, 1-hr, 1st high.plt
		Sel_poll, f41129, 8-hr, 1st high.plt
		Sel_poll, f41129, 24-hr, 1st high.plt
		Sel_poll, f41129, period.plt
		Sel_poll, f43473, 1-hr, 1st high.plt
		Sel_poll, f43473, 8-hr, 1st high.plt
		Sel_poll, f43473, 24-hr, 1st high.plt
		Sel_poll, f43473, period.plt
		Sel_poll, f45441, 1-hr, 1st high.plt
		Sel_poll, f45441, 8-hr, 1st high.plt
		Sel_poll, f45441, 24-hr, 1st high.plt
		Sel_poll, f45441, period.plt
		Sel_poll, f46186, 1-hr, 1st high.plt
		Sel_poll, f46186, 8-hr, 1st high.plt
		Sel_poll, f46186, 24-hr, 1st high.plt
		Sel_poll, f46186, period.plt
		Sel_poll, f48759, 1-hr, 1st high.plt
		Sel_poll, f48759, 8-hr, 1st high.plt
		Sel_poll, f48759, 24-hr, 1st high.plt
		Sel_poll, f48759, period.plt
		Sel_poll, f48760, 1-hr, 1st high.plt
		Sel_poll, f48760, 8-hr, 1st high.plt
		Sel_poll, f48760, 24-hr, 1st high.plt
		Sel_poll, f48760, period.plt
		Sel_poll, f48762, 1-hr, 1st high.plt
		Sel_poll, f48762, 8-hr, 1st high.plt
		Sel_poll, f48762, 24-hr, 1st high.plt
		Sel_poll, f48762, period.plt
		Sel_poll, f48763, 1-hr, 1st high.plt
		Sel_poll, f48763, 8-hr, 1st high.plt
		Sel_poll, f48763, 24-hr, 1st high.plt
		Sel_poll, f48763, period.plt
		Sel_poll, f48764, 1-hr, 1st high.plt
		Sel_poll, f48764, 8-hr, 1st high.plt
		Sel_poll, f48764, 24-hr, 1st high.plt
		Sel_poll, f48764, period.plt
		Sel_poll, f52607, 1-hr, 1st high.plt
		Sel_poll, f52607, 8-hr, 1st high.plt
		Sel_poll, f52607, 24-hr, 1st high.plt

Table H.1-1 List of Modeling Files - Alternative 10
NBCUniversal
Los Angeles, California

Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	XOQ Values for BaseOps.dat	Sel_poll, f52607, period.plt
		Sel_poll, f69244, 1-hr, 1st high.plt
		Sel_poll, f69244, 8-hr, 1st high.plt
		Sel_poll, f69244, 24-hr, 1st high.plt
		Sel_poll, f69244, period.plt
		Sel_poll, f69290, 1-hr, 1st high.plt
		Sel_poll, f69290, 8-hr, 1st high.plt
		Sel_poll, f69290, 24-hr, 1st high.plt
		Sel_poll, f69290, period.plt
		Sel_poll, f69291, 1-hr, 1st high.plt
		Sel_poll, f69291, 8-hr, 1st high.plt
		Sel_poll, f69291, 24-hr, 1st high.plt
		Sel_poll, f69291, period.plt
		Sel_poll, f69292, 1-hr, 1st high.plt
		Sel_poll, f69292, 8-hr, 1st high.plt
		Sel_poll, f69292, 24-hr, 1st high.plt
		Sel_poll, f69292, period.plt
		Sel_poll, f69293, 1-hr, 1st high.plt
		Sel_poll, f69293, 8-hr, 1st high.plt
		Sel_poll, f69293, 24-hr, 1st high.plt
		Sel_poll, f69293, period.plt
		Sel_poll, f69294, 1-hr, 1st high.plt
		Sel_poll, f69294, 8-hr, 1st high.plt
		Sel_poll, f69294, 24-hr, 1st high.plt
		Sel_poll, f69294, period.plt
		Sel_poll, f69295, 1-hr, 1st high.plt
		Sel_poll, f69295, 8-hr, 1st high.plt
		Sel_poll, f69295, 24-hr, 1st high.plt
		Sel_poll, f69295, period.plt
		Sel_poll, f69296, 1-hr, 1st high.plt
		Sel_poll, f69296, 8-hr, 1st high.plt
		Sel_poll, f69296, 24-hr, 1st high.plt
		Sel_poll, f69296, period.plt
		Sel_poll, f69297, 1-hr, 1st high.plt
		Sel_poll, f69297, 8-hr, 1st high.plt
		Sel_poll, f69297, 24-hr, 1st high.plt
		Sel_poll, f69297, period.plt
		Sel_poll, f69307, 1-hr, 1st high.plt
		Sel_poll, f69307, 8-hr, 1st high.plt
		Sel_poll, f69307, 24-hr, 1st high.plt
		Sel_poll, f69307, period.plt
		Sel_poll, m31544, 1-hr, 1st high.plt
		Sel_poll, m31544, 8-hr, 1st high.plt
		Sel_poll, m31544, 24-hr, 1st high.plt
		Sel_poll, m31544, period.plt
		Sel_poll, m40987, 1-hr, 1st high.plt
		Sel_poll, m40987, 8-hr, 1st high.plt
		Sel_poll, m40987, 24-hr, 1st high.plt
		Sel_poll, m40987, period.plt
		Sel_poll, m40988_1, 1-hr, 1st high.plt
		Sel_poll, m40988_1, 8-hr, 1st high.plt
		Sel_poll, m40988_1, 24-hr, 1st high.plt
		Sel_poll, m40988_1, period.plt
		Sel_poll, m40988_2, 1-hr, 1st high.plt
		Sel_poll, m40988_2, 8-hr, 1st high.plt
		Sel_poll, m40988_2, 24-hr, 1st high.plt
		Sel_poll, m40988_2, period.plt
		Sel_poll, m40990, 1-hr, 1st high.plt
		Sel_poll, m40990, 8-hr, 1st high.plt
		Sel_poll, m40990, 24-hr, 1st high.plt
		Sel_poll, m40990, period.plt
		Sel_poll, m40991, 1-hr, 1st high.plt
		Sel_poll, m40991, 8-hr, 1st high.plt
		Sel_poll, m40991, 24-hr, 1st high.plt
		Sel_poll, m40991, period.plt
		Sel_poll, n12575_1, 1-hr, 1st high.plt
		Sel_poll, n12575_1, 8-hr, 1st high.plt
		Sel_poll, n12575_1, 24-hr, 1st high.plt
		Sel_poll, n12575_1, period.plt
		Sel_poll, n12575_2, 1-hr, 1st high.plt
		Sel_poll, n12575_2, 8-hr, 1st high.plt
		Sel_poll, n12575_2, 24-hr, 1st high.plt
		Sel_poll, n12575_2, period.plt
		Sel_poll, n15981, 1-hr, 1st high.plt
		Sel_poll, n15981, 8-hr, 1st high.plt
		Sel_poll, n15981, 24-hr, 1st high.plt
		Sel_poll, n15981, period.plt
		Sel_poll, pg_ne, 1-hr, 1st high.plt
		Sel_poll, pg_ne, 8-hr, 1st high.plt

Table H.1-1 List of Modeling Files - Alternative 10
NBCUniversal
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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	XOQ Values for BaseOps.dat	Sel_poll, pg_ne, 24-hr, 1st high.plt
		Sel_poll, pg_ne, period.plt
		Sel_poll, pg_ne3, 1-hr, 1st high.plt
		Sel_poll, pg_ne3, 8-hr, 1st high.plt
		Sel_poll, pg_ne3, 24-hr, 1st high.plt
		Sel_poll, pg_ne3, period.plt
		Sel_poll, pg_nw, 1-hr, 1st high.plt
		Sel_poll, pg_nw, 8-hr, 1st high.plt
		Sel_poll, pg_nw, 24-hr, 1st high.plt
		Sel_poll, pg_nw, period.plt
		Sel_poll, pg_nw3, 1-hr, 1st high.plt
		Sel_poll, pg_nw3, 8-hr, 1st high.plt
		Sel_poll, pg_nw3, 24-hr, 1st high.plt
		Sel_poll, pg_nw3, period.plt
		Sel_poll, pg_s, 1-hr, 1st high.plt
		Sel_poll, pg_s, 8-hr, 1st high.plt
		Sel_poll, pg_s, 24-hr, 1st high.plt
		Sel_poll, pg_s, period.plt
		Sel_poll, pg_s3, 1-hr, 1st high.plt
		Sel_poll, pg_s3, 8-hr, 1st high.plt
		Sel_poll, pg_s3, 24-hr, 1st high.plt
		Sel_poll, pg_s3, period.plt
		Sel_poll, src1, 1-hr, 1st high.plt
		Sel_poll, src1, 8-hr, 1st high.plt
		Sel_poll, src1, 24-hr, 1st high.plt
		Sel_poll, src1, period.plt
		Sel_poll, src1pb, 1-hr, 1st high.plt
		Sel_poll, src1pb, 8-hr, 1st high.plt
		Sel_poll, src1pb, 24-hr, 1st high.plt
		Sel_poll, src1pb, period.plt
		Sel_poll, src2, 1-hr, 1st high.plt
		Sel_poll, src2, 8-hr, 1st high.plt
		Sel_poll, src2, 24-hr, 1st high.plt
		Sel_poll, src2, period.plt
		Sel_poll, src3, 1-hr, 1st high.plt
		Sel_poll, src3, 8-hr, 1st high.plt
		Sel_poll, src3, 24-hr, 1st high.plt
		Sel_poll, src3, period.plt
		Sel_poll, src4, 1-hr, 1st high.plt
		Sel_poll, src4, 8-hr, 1st high.plt
		Sel_poll, src4, 24-hr, 1st high.plt
		Sel_poll, src4, period.plt
		Sel_poll, src5, 1-hr, 1st high.plt
		Sel_poll, src5, 8-hr, 1st high.plt
		Sel_poll, src5, 24-hr, 1st high.plt
		Sel_poll, src5, period.plt
		Sel_poll, src6, 1-hr, 1st high.plt
		Sel_poll, src6, 8-hr, 1st high.plt
		Sel_poll, src6, 24-hr, 1st high.plt
		Sel_poll, src6, period.plt
		Sel_poll, src7, 1-hr, 1st high.plt
		Sel_poll, src7, 8-hr, 1st high.plt
		Sel_poll, src7, 24-hr, 1st high.plt
		Sel_poll, src7, period.plt
		Sel_poll, src8, 1-hr, 1st high.plt
		Sel_poll, src8, 8-hr, 1st high.plt
		Sel_poll, src8, 24-hr, 1st high.plt
		Sel_poll, src8, period.plt
		Sel_poll, src8ne, 1-hr, 1st high.plt
		Sel_poll, src8ne, 8-hr, 1st high.plt
		Sel_poll, src8ne, 24-hr, 1st high.plt
		Sel_poll, src8ne, period.plt
		Sel_poll, src8nw, 1-hr, 1st high.plt
		Sel_poll, src8nw, 8-hr, 1st high.plt
		Sel_poll, src8nw, 24-hr, 1st high.plt
		Sel_poll, src8nw, period.plt
		Sel_poll, src8s, 1-hr, 1st high.plt
		Sel_poll, src8s, 8-hr, 1st high.plt
		Sel_poll, src8s, 24-hr, 1st high.plt
		Sel_poll, src8s, period.plt
		Sel_poll, src9, 1-hr, 1st high.plt
		Sel_poll, src9, 8-hr, 1st high.plt
		Sel_poll, src9, 24-hr, 1st high.plt
		Sel_poll, src9, period.plt
		Sel_poll, src10, 1-hr, 1st high.plt
		Sel_poll, src10, 8-hr, 1st high.plt
		Sel_poll, src10, 24-hr, 1st high.plt
		Sel_poll, src10, period.plt
		Sel_poll, src11, 1-hr, 1st high.plt
		Sel_poll, src11, 8-hr, 1st high.plt
		Sel_poll, src11, 24-hr, 1st high.plt

Table H.1-1 List of Modeling Files - Alternative 10
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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	XOQ Values for BaseOps.dat	Sel_poll, src11, period.plt
		Sel_poll, src12, 1-hr, 1st high.plt
		Sel_poll, src12, 8-hr, 1st high.plt
		Sel_poll, src12, 24-hr, 1st high.plt
		Sel_poll, src12, period.plt
		Sel_poll, src13, 1-hr, 1st high.plt
		Sel_poll, src13, 8-hr, 1st high.plt
		Sel_poll, src13, 24-hr, 1st high.plt
		Sel_poll, src13, period.plt
		Sel_poll, src14, 1-hr, 1st high.plt
		Sel_poll, src14, 8-hr, 1st high.plt
		Sel_poll, src14, 24-hr, 1st high.plt
		Sel_poll, src14, period.plt
		Sel_poll, src15, 1-hr, 1st high.plt
		Sel_poll, src15, 8-hr, 1st high.plt
		Sel_poll, src15, 24-hr, 1st high.plt
		Sel_poll, src15, period.plt
		Sel_poll, src16, 1-hr, 1st high.plt
		Sel_poll, src16, 8-hr, 1st high.plt
		Sel_poll, src16, 24-hr, 1st high.plt
		Sel_poll, src16, period.plt
		Sel_poll, src17, 1-hr, 1st high.plt
		Sel_poll, src17, 8-hr, 1st high.plt
		Sel_poll, src17, 24-hr, 1st high.plt
		Sel_poll, src17, period.plt
		Sel_poll, src18, 1-hr, 1st high.plt
		Sel_poll, src18, 8-hr, 1st high.plt
		Sel_poll, src18, 24-hr, 1st high.plt
		Sel_poll, src18, period.plt
		Sel_poll, src19, 1-hr, 1st high.plt
		Sel_poll, src19, 8-hr, 1st high.plt
		Sel_poll, src19, 24-hr, 1st high.plt
		Sel_poll, src19, period.plt
		Sel_poll, src20, 1-hr, 1st high.plt
		Sel_poll, src20, 8-hr, 1st high.plt
		Sel_poll, src20, 24-hr, 1st high.plt
		Sel_poll, src20, period.plt
		Sel_poll, src21, 1-hr, 1st high.plt
		Sel_poll, src21, 8-hr, 1st high.plt
		Sel_poll, src21, 24-hr, 1st high.plt
		Sel_poll, src21, period.plt
		Sel_poll, src22, 1-hr, 1st high.plt
		Sel_poll, src22, 8-hr, 1st high.plt
		Sel_poll, src22, 24-hr, 1st high.plt
		Sel_poll, src22, period.plt
		Sel_poll, src23, 1-hr, 1st high.plt
		Sel_poll, src23, 8-hr, 1st high.plt
		Sel_poll, src23, 24-hr, 1st high.plt
		Sel_poll, src23, period.plt
		Sel_poll, src24, 1-hr, 1st high.plt
		Sel_poll, src24, 8-hr, 1st high.plt
		Sel_poll, src24, 24-hr, 1st high.plt
		Sel_poll, src24, period.plt
		Sel_poll, src25, 1-hr, 1st high.plt
		Sel_poll, src25, 8-hr, 1st high.plt
		Sel_poll, src25, 24-hr, 1st high.plt
		Sel_poll, src25, period.plt
		Sel_poll, src26, 1-hr, 1st high.plt
		Sel_poll, src26, 8-hr, 1st high.plt
		Sel_poll, src26, 24-hr, 1st high.plt
		Sel_poll, src26, period.plt
		Sel_poll, src27, 1-hr, 1st high.plt
		Sel_poll, src27, 8-hr, 1st high.plt
		Sel_poll, src27, 24-hr, 1st high.plt
		Sel_poll, src27, period.plt
		Sel_poll, src28, 1-hr, 1st high.plt
		Sel_poll, src28, 8-hr, 1st high.plt
		Sel_poll, src28, 24-hr, 1st high.plt
		Sel_poll, src28, period.plt
		Sel_poll, src29, 1-hr, 1st high.plt
		Sel_poll, src29, 8-hr, 1st high.plt
		Sel_poll, src29, 24-hr, 1st high.plt
		Sel_poll, src29, period.plt
		Sel_poll, src30, 1-hr, 1st high.plt
		Sel_poll, src30, 8-hr, 1st high.plt
		Sel_poll, src30, 24-hr, 1st high.plt
		Sel_poll, src30, period.plt
		Sel_poll, src31, 1-hr, 1st high.plt
		Sel_poll, src31, 8-hr, 1st high.plt
		Sel_poll, src31, 24-hr, 1st high.plt
		Sel_poll, src31, period.plt

Table H.1-1 List of Modeling Files - Alternative 10
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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	XOQ Values for BaseOps.dat	Sel_poll, src32, 1-hr, 1st high.plt
		Sel_poll, src32, 8-hr, 1st high.plt
		Sel_poll, src32, 24-hr, 1st high.plt
		Sel_poll, src32, period.plt
		Sel_poll, src33, 1-hr, 1st high.plt
		Sel_poll, src33, 8-hr, 1st high.plt
		Sel_poll, src33, 24-hr, 1st high.plt
		Sel_poll, src33, period.plt
		Sel_poll, src34, 1-hr, 1st high.plt
		Sel_poll, src34, 8-hr, 1st high.plt
		Sel_poll, src34, 24-hr, 1st high.plt
		Sel_poll, src34, period.plt
		Sel_poll, src35, 1-hr, 1st high.plt
		Sel_poll, src35, 8-hr, 1st high.plt
		Sel_poll, src35, 24-hr, 1st high.plt
		Sel_poll, src35, period.plt
		Sel_poll, src36, 1-hr, 1st high.plt
		Sel_poll, src36, 8-hr, 1st high.plt
		Sel_poll, src36, 24-hr, 1st high.plt
		Sel_poll, src36, period.plt
		Sel_poll, src37, 1-hr, 1st high.plt
		Sel_poll, src37, 8-hr, 1st high.plt
		Sel_poll, src37, 24-hr, 1st high.plt
		Sel_poll, src37, period.plt
		Sel_poll, src38, 1-hr, 1st high.plt
		Sel_poll, src38, 8-hr, 1st high.plt
		Sel_poll, src38, 24-hr, 1st high.plt
		Sel_poll, src38, period.plt
		Sel_poll, src39, 1-hr, 1st high.plt
		Sel_poll, src39, 8-hr, 1st high.plt
		Sel_poll, src39, 24-hr, 1st high.plt
		Sel_poll, src39, period.plt
		Sel_poll, src40, 1-hr, 1st high.plt
		Sel_poll, src40, 8-hr, 1st high.plt
		Sel_poll, src40, 24-hr, 1st high.plt
		Sel_poll, src40, period.plt
		Sel_poll, src41, 1-hr, 1st high.plt
		Sel_poll, src41, 8-hr, 1st high.plt
		Sel_poll, src41, 24-hr, 1st high.plt
		Sel_poll, src41, period.plt
		Sel_poll, src42, 1-hr, 1st high.plt
		Sel_poll, src42, 8-hr, 1st high.plt
		Sel_poll, src42, 24-hr, 1st high.plt
		Sel_poll, src42, period.plt
		Sel_poll, src43, 1-hr, 1st high.plt
		Sel_poll, src43, 8-hr, 1st high.plt
		Sel_poll, src43, 24-hr, 1st high.plt
		Sel_poll, src43, period.plt
		Sel_poll, src44, 1-hr, 1st high.plt
		Sel_poll, src44, 8-hr, 1st high.plt
		Sel_poll, src44, 24-hr, 1st high.plt
		Sel_poll, src44, period.plt
		Sel_poll, src45, 1-hr, 1st high.plt
		Sel_poll, src45, 8-hr, 1st high.plt
		Sel_poll, src45, 24-hr, 1st high.plt
		Sel_poll, src45, period.plt
		Sel_poll, src46, 1-hr, 1st high.plt
		Sel_poll, src46, 8-hr, 1st high.plt
		Sel_poll, src46, 24-hr, 1st high.plt
		Sel_poll, src46, period.plt
		Sel_poll, src47, 1-hr, 1st high.plt
		Sel_poll, src47, 8-hr, 1st high.plt
		Sel_poll, src47, 24-hr, 1st high.plt
		Sel_poll, src47, period.plt
		Sel_poll, src48, 1-hr, 1st high.plt
		Sel_poll, src48, 8-hr, 1st high.plt
		Sel_poll, src48, 24-hr, 1st high.plt
		Sel_poll, src48, period.plt
		Sel_poll, src49, 1-hr, 1st high.plt
		Sel_poll, src49, 8-hr, 1st high.plt
		Sel_poll, src49, 24-hr, 1st high.plt
		Sel_poll, src49, period.plt
		Sel_poll, src50, 1-hr, 1st high.plt
		Sel_poll, src50, 8-hr, 1st high.plt
		Sel_poll, src50, 24-hr, 1st high.plt

Table H.1-1 List of Modeling Files - Alternative 10
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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center	XOQ Values for BaseOps.dat	Sel_poll, src50, period.plt
		Sel_poll, src51, 1-hr, 1st high.plt
		Sel_poll, src51, 8-hr, 1st high.plt
		Sel_poll, src51, 24-hr, 1st high.plt
		Sel_poll, src51, period.plt
		Sel_poll, src52, 1-hr, 1st high.plt
		Sel_poll, src52, 8-hr, 1st high.plt
		Sel_poll, src52, 24-hr, 1st high.plt
		Sel_poll, src52, period.plt
		Sel_poll, src53, 1-hr, 1st high.plt
		Sel_poll, src53, 8-hr, 1st high.plt
		Sel_poll, src53, 24-hr, 1st high.plt
		Sel_poll, src53, period.plt
		Sel_poll, src54, 1-hr, 1st high.plt
		Sel_poll, src54, 8-hr, 1st high.plt
		Sel_poll, src54, 24-hr, 1st high.plt
		Sel_poll, src54, period.plt
		Sel_poll, src56, 1-hr, 1st high.plt
		Sel_poll, src56, 8-hr, 1st high.plt
		Sel_poll, src56, 24-hr, 1st high.plt
		Sel_poll, src56, period.plt
		Sel_poll, wpsrc2, 1-hr, 1st high.plt
		Sel_poll, wpsrc2, 8-hr, 1st high.plt
		Sel_poll, wpsrc2, 24-hr, 1st high.plt
		Sel_poll, wpsrc2, period.plt
		Sel_poll, wpsrc3, 1-hr, 1st high.plt
		Sel_poll, wpsrc3, 8-hr, 1st high.plt
		Sel_poll, wpsrc3, 24-hr, 1st high.plt
		Sel_poll, wpsrc3, period.plt
		Sel_poll, wpsrc6, 1-hr, 1st high.plt
		Sel_poll, wpsrc6, 8-hr, 1st high.plt
		Sel_poll, wpsrc6, 24-hr, 1st high.plt
		Sel_poll, wpsrc6, period.plt
		Sel_poll, wpsrc7, 1-hr, 1st high.plt
		Sel_poll, wpsrc7, 8-hr, 1st high.plt
		Sel_poll, wpsrc7, 24-hr, 1st high.plt
		Sel_poll, wpsrc7, period.plt
		Sel_poll, wpsrc12, 1-hr, 1st high.plt
		Sel_poll, wpsrc12, 8-hr, 1st high.plt
		Sel_poll, wpsrc12, 24-hr, 1st high.plt
		Sel_poll, wpsrc12, period.plt
	XOQ Values for BaseCT.dat	Xoq, src55, 24-hr, 1st high.plt
		Xoq, src55, period.plt
		Xoq, ct1280g, 24-hr, 1st high.plt
		Xoq, ct1280g, period.plt
		Xoq, ct1280r, 24-hr, 1st high.plt
		Xoq, ct1280r, period.plt
		Xoq, ct1320r, 24-hr, 1st high.plt
		Xoq, ct1320r, period.plt
		Xoq, ct1360r1, 24-hr, 1st high.plt
		Xoq, ct1360r1, period.plt
		Xoq, ct1360r2, 24-hr, 1st high.plt
		Xoq, ct1360r2, period.plt
		Xoq, ct1360r3, 24-hr, 1st high.plt
		Xoq, ct1360r3, period.plt
		Xoq, ct2160r1, 24-hr, 1st high.plt
		Xoq, ct2160r1, period.plt
		Xoq, ct2160r2, 24-hr, 1st high.plt
		Xoq, ct2160r2, period.plt
		Xoq, ct2311r, 24-hr, 1st high.plt
		Xoq, ct2311r, period.plt
		Xoq, ct2313r, 24-hr, 1st high.plt
		Xoq, ct2313r, period.plt
		Xoq, ct2315r1, 24-hr, 1st high.plt
		Xoq, ct2315r1, period.plt
		Xoq, ct2315r2, 24-hr, 1st high.plt
		Xoq, ct2315r2, period.plt
		Xoq, ct2372r, 24-hr, 1st high.plt
		Xoq, ct2372r, period.plt
		Xoq, ct3153g, 24-hr, 1st high.plt
		Xoq, ct3153g, period.plt
		Xoq, ct3225g, 24-hr, 1st high.plt
		Xoq, ct3225g, period.plt
		Xoq, ct3228g, 24-hr, 1st high.plt
		Xoq, ct3228g, period.plt
		Xoq, ct3315g, 24-hr, 1st high.plt
		Xoq, ct3315g, period.plt
		Xoq, ct3385g1, 24-hr, 1st high.plt
		Xoq, ct3385g1, period.plt

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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center		Xoq, ct3385g2, 24-hr, 1st high.plt
		Xoq, ct3385g2, period.plt
		Xoq, ct3444g, 24-hr, 1st high.plt
		Xoq, ct3444g, period.plt
		Xoq, ct4115g, 24-hr, 1st high.plt
		Xoq, ct4115g, period.plt
		Xoq, ct4250r, 24-hr, 1st high.plt
		Xoq, ct4250r, period.plt
		Xoq, ct4407g, 24-hr, 1st high.plt
		Xoq, ct4407g, period.plt
		Xoq, ct5146g1, 24-hr, 1st high.plt
		Xoq, ct5146g1, period.plt
		Xoq, ct5146g2, 24-hr, 1st high.plt
		Xoq, ct5146g2, period.plt
		Xoq, ct5146g3, 24-hr, 1st high.plt
		Xoq, ct5146g3, period.plt
		Xoq, ct5511r1, 24-hr, 1st high.plt
		Xoq, ct5511r1, period.plt
		Xoq, ct5511r2, 24-hr, 1st high.plt
		Xoq, ct5511r2, period.plt
		Xoq, ct6528r1, 24-hr, 1st high.plt
		Xoq, ct6528r1, period.plt
		Xoq, ct6528r2, 24-hr, 1st high.plt
		Xoq, ct6528r2, period.plt
		Xoq, ct6528r3, 24-hr, 1st high.plt
		Xoq, ct6528r3, period.plt
		Xoq, ct6528r4, 24-hr, 1st high.plt
		Xoq, ct6528r4, period.plt
		Xoq, ct7227g, 24-hr, 1st high.plt
		Xoq, ct7227g, period.plt
	XOQ Values for BaseTrucks.dat	Xoq, dt1, 1-hr, 1st high.plt
		Xoq, dt1, 8-hr, 1st high.plt
		Xoq, dt1, 24-hr, 1st high.plt
		Xoq, dt1, period.plt
		Xoq, dt2, 1-hr, 1st high.plt
		Xoq, dt2, 8-hr, 1st high.plt
		Xoq, dt2, 24-hr, 1st high.plt
		Xoq, dt2, period.plt
		Xoq, dt3, 1-hr, 1st high.plt
		Xoq, dt3, 8-hr, 1st high.plt
		Xoq, dt3, 24-hr, 1st high.plt
		Xoq, dt3, period.plt
		Xoq, dt4, 1-hr, 1st high.plt
		Xoq, dt4, 8-hr, 1st high.plt
		Xoq, dt4, 24-hr, 1st high.plt
		Xoq, dt4, period.plt
		Xoq, dt5, 1-hr, 1st high.plt
		Xoq, dt5, 8-hr, 1st high.plt
		Xoq, dt5, 24-hr, 1st high.plt
		Xoq, dt5, period.plt
		Xoq, dt6, 1-hr, 1st high.plt
		Xoq, dt6, 8-hr, 1st high.plt
		Xoq, dt6, 24-hr, 1st high.plt
		Xoq, dt6, period.plt
		Xoq, dt7, 1-hr, 1st high_baseline.plt
		Xoq, dt7, 8-hr, 1st high_baseline.plt
		Xoq, dt7, 24-hr, 1st high_baseline.plt
		Xoq, dt7, period_baseline.plt
		Xoq, dt8, 1-hr, 1st high.plt
		Xoq, dt8, 8-hr, 1st high.plt
		Xoq, dt8, 24-hr, 1st high.plt
		Xoq, dt8, period.plt
		Xoq, dt9, 1-hr, 1st high.plt
		Xoq, dt9, 8-hr, 1st high.plt
		Xoq, dt9, 24-hr, 1st high.plt
		Xoq, dt9, period.plt
		Xoq, dt10, 1-hr, 1st high.plt
		Xoq, dt10, 8-hr, 1st high.plt
		Xoq, dt10, 24-hr, 1st high.plt
		Xoq, dt10, period.plt
		Xoq, dt11, 1-hr, 1st high.plt
		Xoq, dt11, 8-hr, 1st high.plt
		Xoq, dt11, 24-hr, 1st high.plt
		Xoq, dt11, period.plt
		Xoq, dt12, 1-hr, 1st high.plt
		Xoq, dt12, 8-hr, 1st high.plt
		Xoq, dt12, 24-hr, 1st high.plt
		Xoq, dt12, period.plt
		Xoq, dt13, 1-hr, 1st high.plt

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Modeling Activity	Description	File Name
Baseline Operation at the Existing Childcare Center		Xoq, dt13, 8-hr, 1st high.plt
		Xoq, dt13, 24-hr, 1st high.plt
		Xoq, dt13, period.plt
		Xoq, dt14, 1-hr, 1st high.plt
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Appendix FEIR-25

Alternative 10: No Residential Alternative
Biota: Protected Species

TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES

Regulatory Services

PROJECT NUMBER: 0894-1NBCU

TO: Mark Lyum, NBC Universal

FROM: Tony Bomkamp

DATE: August 23, 2012

SUBJECT: NBC Universal Evolution Plan: No Residential Alternative (Alternative 10) Biological Resources Technical Memorandum

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I. INTRODUCTION

The purpose of this memorandum is to assess the potential significance of impacts to sensitive resources associated with Alternative 10 - the No Residential Alternative and compare the potential impacts of Alternative 10 to those of the proposed Project as analyzed in the NBCU Evolution Plan Draft EIR (DEIR). As with the Project, Alternative 10 would provide for future development through the year 2030, and would include grading and vegetation removal over portions of the Project Site for the construction of new structures and roads. Alternative 10 would represent a reduced development footprint relative to the Project, with the chief difference in terms of impacts to biological resources being the elimination of the mixed-use residential uses proposed for the eastern portion of the Project Site ("Back Lot Area"). Although Alternative 10 would include an increase in Studio Office uses, Entertainment and Hotel uses, and additional parking structures, these new structures would be constructed either in areas with existing development or with predominantly ornamental vegetation.

This memorandum incorporates by reference the information about biotic resources contained in the Biological Site Assessment Report prepared by Glenn Lukos Associates (November 2009), which is included as Appendix K-1 to the DEIR, as well as the summary of such information contained in the Section IV.I, Biota, of the DEIR. The methodology and results of the literature review and on-site biological field surveys are also summarized in the Biological Site Assessment Report and Section IV-I, Biota, of the DEIR. The attached Figure 1 depicts the Project Site location, the attached Figure 2 depicts the plant communities and Project Site features, and the attached Figure 3 depicts the proposed Conceptual Plan for Alternative 10.

A. Significance Thresholds

The significance criteria applied to the evaluation of Alternative 10 is the same as the Project. As stated in the DEIR, the proposed Project would have a significant biota impact if it results in the following:

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- The loss of individuals, or the reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, candidate, or sensitive species or a Species of Special Concern;
- The loss of individuals or the reduction of existing habitat of a locally designated species or a reduction in a locally designated habitat or plant community;
- Interference with wildlife movement/migration corridors that may diminish the chances for long-term survival of a sensitive species;
- The alteration of an existing wetland habitat; or
- Interference with habitat such that normal species behaviors are disturbed (e.g., from the introduction of noise, light) to a degree that may diminish the chances for long-term survival of the sensitive species.

B. Project Design Features

Of the project design features identified for the Project, the project design feature addressing protected tree regulations, as well as Project Design Feature I-1, Locally Designated Habitat, and Project Design Feature I-3, Avoidance and Salvage of Sensitive Reptile Species, would also be incorporated into Alternative 10. For the reasons described below, the project design feature addressing the hillside open space area would not apply to Alternative 10 (Project Design Feature I-2).

1. Protected Tree Regulations

For a discussion of the project design features for Alternative 10 associated with protected tree regulations, which would apply to Alternative 10, please refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

2. Locally Designated Habitat

State Public Resources Code Section 21083.4 requires that the loss of oak woodlands located within unincorporated County areas be mitigated. Under the proposed Project, some areas of oak woodland habitat would move from being under the jurisdiction of the County to being under the jurisdiction of the City. As such, those areas of oak woodland that would move from County to City jurisdiction would no longer be subject to the provisions of Public Resources Code Section 21083.4. However, under the Project, Project Design Feature I-1 provides that the Applicant would mitigate for all impacted oak woodlands that would be located within the current County jurisdiction, regardless of the proposed annexation of some of this habitat into the City under the proposed Project.

Under Alternative 10, areas of oak woodlands are located in both the County and the City. Similar to the proposed Project, under Alternative 10, some areas of oak woodland habitat would move from County jurisdiction to City jurisdiction, albeit a smaller area relative to the proposed Project, and would no longer be subject to the provisions of Public Resources Code Section 21083.4. However, Project Design Feature I-1, which would also be applicable to Alternative 10, provides that the Applicant would mitigate for all impacted oak woodlands that would be located within the current County jurisdiction, regardless of the proposed annexation of some of this habitat into the City under the proposed Project.

3. Hillside Open Space Area

The proposed Project would include over 35 acres of open space within the proposed Project Mixed-Use Residential Area on the east side of the Project Site. Under the proposed Project, Project Design Feature I-2 would provide that, prior to completion of the landscaping of Open Space District 1, at least six acres of hillside open space would be planted and maintained as native grassland habitat, and would function as replacement raptor foraging habitat for the approximately 12 acres of non-native grassland that may be removed by the proposed Project. The native grassland would be designed to consist of one or few areas to be as contiguous as possible, and would support scattered native trees within the grassland and/or along the edge that would function as perching and roosting site for hunting raptors, and possibly as nest sites.

Under Alternative 10, the residential, neighborhood retail and community serving uses and Open Space Districts of the Mixed-Use Residential Area would not be developed, and as such, potential impacts to non-native grassland raptor foraging habitat would be substantially reduced. The Alternative 10 Conceptual Plan, attached as Figure 3, shows a reasonable example of how the Project Site might be developed based on Alternative 10 needs in accordance with the proposed City and County Specific Plans. Although Alternative 10 would include some development in the Back Lot Area, development would be more limited in scale and in areas mostly characterized as previously disturbed and/or developed or areas with ornamental vegetation that do not support raptor foraging. Further, given the setback proposed for the Back Lot Area on the eastern side of the Project Site, as well as the limited development that would reduce the amount of vegetation removed, Project Design Feature I-2 would not be applicable to Alternative 10.

4. Avoidance and Salvage of Sensitive Reptile Species

Under the proposed Project, Project Design Feature I-3 would avoid or minimize potential impacts to sensitive reptile species that have low potential to occur on-site (silvery legless lizard, coastal western whiptail, and San Bernardino ringneck snake). The potential for such species to occur is limited primarily to the Back Lot Area.

Under Alternative 10, the residential, neighborhood retail and community serving uses and Open Space Districts of the Mixed-Use Residential Area would not be developed, and as such, potential impacts to sensitive reptile species that have low potential to occur on the Project Site would be substantially reduced relative to the Project's impacts. Although Alternative 10 would potentially include some development in the Back Lot Area, development would be more limited in scale and in areas that are typically characterized as previously disturbed and/or developed or areas with ornamental vegetation that do not support sensitive reptile species. However, in order to be conservative, Project Design Feature I-3 would remain applicable to Alternative 10, as drafted below, in order to avoid or minimize potential impacts to sensitive reptile species that may occur if any oak woodland or scrub habitat would be impacted.

- Prior to construction activities in the areas of oak woodland or scrub habitat in the Back Lot Area as identified in Figure 2, field surveys would be conducted in oak woodland and scrub habitat in the Back Lot Area during the peak activity season and time of day for each species (ranging from February to May for silvery legless lizard, April to August for coastal western whiptail, and late spring through summer for San Bernardino ringneck snake) to determine the presence or absence of the aforementioned three special status reptiles on the Project Site, and their approximate population size and distribution if present. Surveys would be conducted by a qualified biologist according to standard methods of surveying for reptiles. A report would be submitted to the City Planning Department, County Department of Regional Planning, and CDFG documenting the survey methods and results, including number and location of individuals observed, if any, and estimated population sizes.

- Based on the field survey results, a plan would be prepared by a qualified biologist to trap special status reptile individuals present on-site prior to and during ground-disturbing construction activities and release them to nearby suitable protected habitat. This may include preserved habitat areas onsite or public lands in the vicinity if approved through a Memorandum of Understanding with the landholding agency (i.e. the City for Griffith Park, or the Santa Monica Mountains National Recreation Area). This plan would be submitted to and be approved by the City Planning Department and/or County Department of Regional Planning and CDFG prior to implementation and prior to vegetation removal or ground disturbance. A follow-up report documenting trapping and relocation methods and results would also be submitted to the City Planning Department and County Department of Regional Planning and CDFG following construction.

- If special status reptiles are relocated to preserved habitat on-site, this area would be protected during Project construction using silt fencing or other fencing as

approved by a qualified biologist. The protective fencing would be installed prior to any ground disturbance or vegetation removal, and would be maintained during all phases of Project construction occurring within or adjacent to suitable habitat for the species; fence maintenance would be regularly monitored by a qualified biologist. No construction-related activities would be allowed in the protected habitat, including storage of materials or equipment, or trespass by construction crew members. This preserved on-site habitat would also be protected in perpetuity from the adjacent development by appropriate permanent fencing as recommended and approved in the relocation plan described above. In addition, an educational pamphlet would be prepared and distributed to all residents within the new development informing them of the harm that domestic outdoor cats have upon wildlife.

- If special status reptiles are present on-site based on the field survey results, a qualified biologist would be present during vegetation removal and grading activities conducted in the oak woodland and scrub habitat in the Back Lot Area to monitor activities and relocate any special status reptiles in accordance with the above plan in order to avoid impacts to any individuals remaining on-site following pre-construction trapping and relocation activities.

II. ANALYSIS OF PROJECT IMPACTS

As with the proposed Project, implementation of Alternative 10 could have the potential to result in impacts to biological resources on-site, including:

- Temporary impacts during grading and construction activities, such as vegetation removal in areas that would be revegetated, noise, vibration, dust, and increased human presence from construction crews;
- Permanent impacts from grading and construction activities, such as the removal of vegetation for building, retaining wall, or road construction;
- Permanent impacts from post-construction, operational activities including increased noise and disturbance levels from additional residences, increased wildlife mortality from additional traffic, increased lighting associated with new development and roads, and increased predation from domestic pets associated with new residential development.

The potential for these impacts to occur for biological resources on-site is discussed in more detail below relative to Alternative 10 and the significance thresholds given above.

A. Listed or Sensitive Species

1. Special Status Plants

Due to the variability of new construction on the Project Site associated with implementation of either the proposed Project or Alternative 10 over the next few decades, it is possible that some of the 228 Southern California black walnut trees mapped on-site may be removed or damaged. A comparison of anticipated numbers for both the proposed Project and Alternative 10 for the City and County areas are discussed separately in the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

It is not mandatory that List 4 plants be evaluated during CEQA analyses; however, an analysis of impacts is strongly recommended by the California Native Plant Society. Impacts to Southern California black walnut trees are generally not considered significant unless the trees occur as a walnut woodland plant community, which does not occur on-site. However, based on the City's thresholds of significance, the loss of any Southern California black walnut individuals would be considered a significant impact, as they are considered a sensitive species. Mitigation for the loss of Southern California black walnut individuals is discussed in the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

As previously discussed, no special status plants other than Southern California black walnut were detected during focused surveys conducted on-site, and none are anticipated to occur due to a lack of suitable habitat and/or because the Project Site is outside of the species' known geographical or elevational range. Under the proposed Project, it is possible that special-status plants may occur within the Mixed-Use Residential Area, because the focused surveys were conducted outside of the peak blooming period for some of the special-status species evaluated for the property. The DEIR recommends Mitigation Measure I-2 for the Project, which requires pre-construction surveys for these special-status plants, and translocation of special-status plants if found, and would reduce potential impacts to less than significant levels.

As Alternative 10 eliminates the mixed-use residential uses proposed for the Back Lot Area, very little, if any of the areas of potentially suitable habitat for special status plants other than Southern California black walnut would be impacted. The Alternative 10 Conceptual Plan, attached as Figure 3, shows a reasonable example of how the Project Site might be developed based on Alternative 10 needs in accordance with the proposed City and County Specific Plans. Although Alternative 10 would potentially include some development in the Back Lot Area, development would be more limited in scale and in areas that are typically characterized as previously disturbed and/or developed or areas with ornamental vegetation. Nonetheless, in order to be conservative, Mitigation Measure I-2 would remain applicable to Alternative 10, and impacts with implementation of proposed mitigation to all special status plants would remain

less than significant. Therefore, potential impacts to special status plants other than Southern California black walnut would be less than significant.

2. Special Status Wildlife

Sensitive reptile species (silvery legless lizard, coastal western whiptail, and San Bernardino ringneck snake) have potential to occur on-site and, if present, are likely to exist in small numbers due to the fragmented and/or disturbed habitat conditions and the Project Site's prolonged isolation, a situation that might lead to their eventual extirpation. Under the proposed Project, any potential impacts would be avoided through implementation of Project Design Feature I-3 discussed above, which would involve avoidance and salvage of sensitive reptiles in the proposed Mixed-Use Residential Area in the eastern side of the property. Under Alternative 10, development in the Back Lot Area would be substantially reduced and would generally occur in previously-developed areas or areas vegetated with ornamental vegetation that do not provide suitable habitat. Therefore, under Alternative 10, potential impacts to sensitive reptile species would be significantly reduced. Nonetheless, in order to be conservative, Project Design Feature I-3 as described in more detail above would remain applicable to Alternative 10, and potential impacts to sensitive reptile species would be less than significant.

A few sensitive bird species have a potential to nest on-site, including Cooper's hawk, Southern California rufous-crowned sparrow, and white-tailed kite. Although no raptor nests were observed on-site, and hawks maintain rather large nesting territories (possibly limiting the number of possible nests in the entire area), Cooper's hawk is still considered to have a moderate potential to nest on-site. Other bird species, including migratory birds, have a higher potential to nest in the vegetation or structures on-site. As with the proposed Project, construction activities associated with Alternative 10, including vegetation removal, building demolition, and noise and vibration have a potential to result in direct (i.e., death or physical harm) and indirect (i.e., nest abandonment) adverse impacts to nesting birds; these impacts would be considered significant. However, implementation of Mitigation Measure I-3, involving either initiation of construction activities before the nesting season, or pre-construction surveys during the nesting season, would reduce this impact to a less than significant level. In addition, although construction would temporarily reduce available nesting habitat for birds in the area, the implementation of the tree regulations under the proposed City and County Specific Plans and Mitigation Measure I-5 would result in the replacement and/or protection of nesting habitat in the form of trees and oak woodland habitat either on-site or in the vicinity. Given the overall reduction in development in the Back Lot Area under Alternative 10 as compared to the proposed Project, the potential impacts to sensitive bird species under Alternative 10 would be less than the Project's less than significant impacts with mitigation.

The non-native grassland and woodland habitats on-site are used as foraging habitat for raptors; however, given the relatively low use of the site as observed during raptor surveys, the equal or

higher usage of the golf course to the north, and the lack of any current nesting activities on-site, the on-site foraging habitat does not appear to be of high value critical to the maintenance of local raptor populations (see Appendix K-1 to the EIR). Under Alternative 10, potential impacts to the non-native grassland habitats and woodland habitats would be substantially reduced as compared to the proposed Project. With implementation of Mitigation Measure I-5, which provides for replacement of oak woodland habitat, impacts to raptor foraging under Alternative 10 would be reduced to less than significant. Refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek for details of impacts to oak woodland under Alternative 10.

Several special-status bat species (pallid bat, western mastiff bat, spotted bat, western red bat, and western yellow bat) have potential to forage and roost on-site in larger trees during winter or fall and spring migration periods. Given the reduction in development associated with Alternative 10 relative to the Project, especially in the existing Back Lot Area, potential impacts to bat species would be substantially reduced. However, as with the Project, if roosting sensitive bat species were impacted by Alternative 10, the impact may be considered significant. Implementation of Mitigation Measure I-6, involving pre-construction surveys and avoidance of roosting individuals if found, would reduce potential impacts on roosting sensitive bat species associated with Alternative 10 to less than significant levels.

B. <u>Locally Designated Species, Habitats or Communities</u>

1. Protected Trees

For a discussion of protected trees under current conditions and under Alternative 10, please refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

2. Sensitive Plant Communities

Under the current jurisdictional conditions on the Project Site, approximately 14.6 acres of oak woodlands are present within the County area. Under the proposed Project, which includes shifts in City and County jurisdictional boundaries, 8.3 acres of oak woodlands would be present within the proposed County area. Approximately 2.1 acres of this habitat would be impacted by Project grading activities under the proposed Project. This means that there are 6.3 acres of oak woodlands that would shift out of the County's jurisdiction and into the City's jurisdiction.

Under Alternative 10, which also includes shifts in City and County jurisdictional boundaries, albeit minor shifts compared to the proposed Project, impacts to oak woodlands within both proposed City and County jurisdictional boundaries would be reduced relative to the proposed Project. As with the proposed Project, impacts to oak woodlands in County jurisdiction following annexation would be addressed by Mitigation Measure I-5 pursuant to Section 21083.4

of the Public Resources Code, and impacts to oak woodlands within City jurisdiction following annexation would be addressed by Project Design Feature I-1.

The avoidance of and/or compensation for oak woodland impacts within the current jurisdiction of the County shall be partially accomplished through the implementation of Mitigation Measure I-4, which includes protecting avoided oaks during construction, and the implementation of the proposed County Specific Plan Oak Tree Removal regulations which includes oak tree replacement and/or payment of an in-lieu fee for protection of oaks. However, the installation of replacement oak trees can mitigate no more than half of the impacts to oak woodland habitat in the County area from direct removal or damage during development of the Project Site. Therefore, this replacement would count toward only half of the oak woodland habitat mitigation, and impacts to oak woodland habitat would still be significant. This impact would be reduced to a less than significant level with the implementation of Mitigation Measure I-5. This mitigation measure presents options for impacted oak woodland habitat compensation, including conserving oak woodlands in perpetuity, replacing or restoring oak woodland habitat (which can only count toward half of the mitigation requirement), and contributing funds to an oak woodland fund.

Thus, under both the proposed Project and Alternative 10, impacts to oak woodland would be reduced to less than significant.

C. Wildlife Movement/Migration Corridors

As discussed in more detail in the DEIR, the Project Site does not act as a true wildlife corridor, movement pathway, or linkage between larger habitat areas for terrestrial wildlife. Thus, although the Project would result in a loss of some of the relatively natural woodland, scrub and grassland habitats on-site, this would not result in a significant impact to wildlife migration or movement corridors. Alternative 10 would result in the loss of substantially less natural habitat than the proposed Project; Alternative 10 also would result in a less than significant impact to wildlife migration or movement corridors, and less of an impact relative to the Project.

D. Wetland Habitat

The Project Site does not contain wetland habitat; however, one potentially jurisdictional water feature (drainage) is present along the eastern Project Site boundary adjacent to Barham Boulevard and may be impacted by future development activities on-site [see Figure 2, Drainage B]. This impact is considered potentially significant under both the proposed Project and Alternative 10; however, implementation of Mitigation Measure I-7 would reduce this impact to a less than significant level.

E. Sensitive Species Behavior and Long-term Survival

As discussed previously, nearly all of the sensitive species recorded as occurring, or potentially occurring, within the region are either not anticipated to be on-site or have a low potential to occur on-site. Only three special status reptile species have potential to occur on-site, and potential impacts to these species are discussed above. Although Alternative 10 would potentially include some development in the Back Lot Area, development would be more limited in scale and in areas that are typically characterized as previously disturbed and/or developed or areas with ornamental vegetation. Therefore, it is unlikely that there would be potential for impacts to special-status reptiles given the reduced scale of development in the Back Lot Area under Alternative 10, and thus it is unlikely that Alternative 10 would interfere with the normal behavior of this species to the degree that it would diminish the chances for their long-term survival. Nonetheless, as described above, in order to be conservative, Project Design Feature I-3 as described above would remain applicable to Alternative 10, and potential impacts to sensitive reptile species would be less than significant.

Additionally, several bird species, which are considered special status when nesting, have potential to occur on-site, and potential impacts to these species are discussed above. Mitigation Measure I-3 is prescribed to mitigate impacts to less than significant levels, and would not interfere with the normal behavior of this species to the degree that it would diminish the chances for their long-term survival under both the proposed Project and Alternative 10. Finally, several special-status bat species have potential to occur on-site, and potential impacts to these species under Alternative 10 are discussed above. Mitigation Measure I-6 is prescribed to mitigate impacts to less than significant levels, and would not interfere with the normal behavior of this species to the degree that it would diminish the chances for their long-term survival. All of the above-mentioned reptile, bird, and bat species are known to occur in areas throughout the state and Southern California, and are not considered sensitive enough to receive listing under the state or federal Endangered Species Acts. Potential impacts to areas adjacent to the Project Site are not anticipated to affect sensitive species' behavior off-site, as the Project Site is nearly surrounded by developed areas which are unlikely to support such species. Therefore, interference to sensitive species' behavior from Alternative 10 relative to the long-term survival of such species is concluded to be less than significant.

F. Impacts under the "No Annexation" Scenario

Impacts from the proposed Project and Alternative 10 would be the same for nearly all issues under the "no annexation" scenario (where neither the existing City nor County jurisdictional boundaries would change) except for three issues that are described in detail below. This results for two reasons. First, the physical impacts of the Project do not change. The only change is related to how the local jurisdictions implement their respective regulations and guidance with regard to biotic resources. Second, the regulatory guidance for all issues, other than the three

identified below, are regulated at jurisdictional levels that are independent of whether the Project Site is located in the City or County (e.g., state and federal regulations pertaining to endangered species). The three issues for which impacts vary based on City and/or County regulations are as follows: (1) sensitive species (special status plants); (2) locally designated species (protected trees); and (3) locally designated plant communities (oak woodlands). As explained in more detail below and in the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek, with the proposed project design features and mitigation measures, even with the differences between City and County regulations, the impacts would not be different if the jurisdictional boundaries were different than those identified in Alternative 10.

1. Listed and Sensitive Species - Special Status Plants

As with the Project, under Alternative 10, construction impacts to Southern California black walnuts would be considered significant, as Southern California black walnut is a sensitive plant species. Impacted walnuts within the current City area would be mitigated under the Protected Tree Regulations in the proposed City Specific Plan, and impacted walnuts in the current County area would be mitigated via Mitigation Measure I-1, thereby resulting in less than significant impacts to the Southern California black walnut regardless of the jurisdiction within which the tree is located. For a detailed discussion of impacts to Southern California black walnut under various jurisdictional scenarios, refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

2. Locally Designated Species - Protected Trees

City of Los Angeles Protected Tree Ordinance

Under the current jurisdictional conditions on the Project Site, there are 229 protected trees present within the current City area, which includes 141 coast live oaks, 30 California sycamores, and 58 Southern California black walnuts. As discussed in more detail in the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek, some trees may be impacted during either proposed Project implementation or Alternative 10 implementation. Impacts to these trees would be considered significant under either the proposed Project or Alternative 10; however, with the implementation of the proposed City Specific Plan Protected Tree regulations, these impacts would be reduced to a less than significant level. Potentially significant impacts to the remaining protected trees that may not be removed, but may be adversely impacted as a result of Project construction activities, would be mitigated to a less than significant level with the implementation of Mitigation Measure I-4. For a detailed discussion of impacts to protected trees under various jurisdictional scenarios, refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

County of Los Angeles Protected Tree Ordinance

As discussed in more detail in the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek, some trees may be impacted during either proposed Project implementation or Alternative 10 implementation. Removal of or damage to these trees would be considered significant; however, with the implementation of the proposed County Specific Plan Oak Tree Removal regulations, these impacts would be reduced to a less than significant level. Potentially significant impacts to the remaining protected oaks that would not be removed, but may be adversely impacted as a result of proposed Project or Alternative 10 construction activities, would be mitigated to a less than significant level with the implementation of Mitigation Measure I-4. For a detailed discussion of impacts to protected trees under various jurisdictional scenarios, refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek.

3. Locally Designated Communities - Sensitive Natural Communities

Under the current jurisdictional conditions on the Project Site, approximately 14.6 acres of oak woodlands are present within the County area. Under the proposed Project, assuming jurisdictional boundaries do not change, 8.4 acres of oak woodlands would be impacted within the current County area; this impact would be considered significant. Under Alternative 10, assuming jurisdictional boundaries do not change, fewer than 8.4 acres of oak woodlands would be impacted within the current County area; this impact would be considered significant. However, with the implementation of Mitigation Measure I-5, in coordination with Mitigation Measure I-4 (which will protect avoided oak woodlands), this impact would be reduced to a less than significant level.

G. <u>Summary of Impacts for Alternative 10 and the Proposed Project</u>

Unlike the Project, which includes the Mixed-Use Residential Area development in previously undeveloped areas of the Back Lot Area, development proposed for the Back Lot Area under Alternative 10 would occur predominantly in previously developed areas or areas with ornamental vegetation. Accordingly, Alternative 10 would have substantially lower potential to impact biological resources as compared to the Project.

With regard to special status plants, the Project would impact a greater number of California black walnut trees than Alternative 10, but impacts would be significant under both the proposed Project and Alternative 10 prior to mitigation. Although it is not anticipated that any additional special status plants would be detected, it was determined in the DEIR that there is a low potential for the Project to impact other special status plant species. As discussed above, most development under Alternative 10 would not occur in the majority of areas of suitable habitat for special status plants other than California black walnut. However, there is limited potential for

Alternative 10 to impact special status plants, and thus to be conservative such impacts were determined to be significant prior to mitigation.

With regard to special status wildlife, the Project would result in potentially significant impacts to nesting birds, raptor foraging, and roosting and foraging bats. For Alternative 10, although impacts in the Back Lot Area would be substantially reduced, there would be impacts to ornamental trees and oak woodland that could have the potential to result in significant impacts to nesting birds and roosting and foraging bats prior to mitigation. Regarding sensitive reptile species, the development proposed for the Mixed-Use Residential Area associated with the Project would impact potentially suitable habitat, while development under Alternative 10 is anticipated to mostly avoid suitable woodland and scrub habitat for sensitive reptile species. However, if suitable woodland and scrub habitat were impacted by Alternative 10, sensitive reptile species may be impacted. With the proposed Project Design Features and mitigation measures, impacts to sensitive reptile species under Alternative 10 would remain less than significant.

With regard to projected trees and oak woodland habitat, impacts associated with Alternative 10 would be reduced relative to the proposed Project, but would be significant prior to mitigation under both the Project and Alternative 10. For a detailed discussion of impacts to protected trees, refer to the August 2012 Alternative 10 Tree Impact Evaluation prepared by Dudek

Under both the Project and Alternative 10, there would be no significant impact to wildlife movement, as the Project Site does not act as a wildlife movement/migration corridor. Given the reduction in development in the Back Lot Area under Alternative 10, Alternative 10's potential impacts on wildlife movement would be less than the less than significant impacts of the Project.

Under both the Project and Alternative 10, there would be a potentially significant impact to the drainage feature along Barham Boulevard; however, this impact would be less than significant with mitigation.

Under both the Project and Alternative 10, potential impacts to sensitive species' behavior and long-term survival would be reduced to less than significant with implementation of proposed mitigation and project design features.

III. ALTERNATIVE 10 MITIGATION MEASURES

The following Mitigation Measures that apply to the Project are also applicable to Alternative 10.

Mitigation Measure I-1: In order to avoid and compensate for impacts to Southern California black walnut trees within the County portion of the Project Site, the following measures shall be implemented:

a) Southern California black walnut trees that are avoided shall be protected during site development activities in compliance with protective measures described for avoided trees under Mitigation Measure I-4.

b) Southern California black walnut trees impacted within the County portion of the Project Site shall be replaced at a minimum 2:1 ratio. Impact includes cutting, relocating, inflicting damage, or encroaching into the root zone or filling the drip line area. Replacement shall generally follow the Oak Tree Removal Regulations of the proposed County Specific Plan, but shall relate specifically to Southern California black walnut trees, including the following:

1. The Applicant shall provide and plant two replacement trees for each single Southern California black walnut tree impacted. The replacement trees shall meet the following minimum requirements:
   - i. shall consist of a range of plant sizes, at a minimum of one gallon in size, in order to approximate a natural habitat condition and the range of sizes of the individuals impacted;
   - ii. shall consist exclusively of indigenous trees and certified as being grown from a seed source collected from an indigenous habitat within valley regions of Los Angeles County;
   - iii. if planted off-site, the replacement walnut trees shall be planted at a location approved by the County Forester, in consultation with the Supervisor's Office; and
2. Additional Requirements.
   - i. The Applicant shall monitor the replacement trees for a minimum of 5 years, to evaluate the growth, health and condition of the replacement trees
   - ii. The soil for new tree plantings shall be appropriately inoculated with beneficial mycorrhizal fungi.
   - iii. The Applicant shall design landscapes and irrigation systems which are adjacent to the replacement trees in a manner that is compatible for the survival of the replacement trees.
   - iv. Trees which are determined to be healthy and structurally sound shall be considered as candidates for relocation, to the extent feasible.

Mitigation Measure I-2: Avoidance of Special Status Plants. To avoid impacts to special-status plants that may not have been detected during focused surveys in June 2006, prior to vegetation clearing for construction in the Back Lot Area, focused surveys for the special-status plants identified below shall be conducted in the Back Lot Area during the blooming period for the species. If any species identified below are detected, then prior to vegetation clearing for

construction the plants shall be censused and a special-status plant relocation plan shall be developed and implemented to provide for translocation of the plants. The plan shall be prepared by a biologist and shall include the following components: (1) identify an area of appropriate habitat on-site; (2) depending on the species detected, determine if translocation will take the form of seed collection and deposition, or transplanting the plants and surrounding soil as appropriate; (3) develop protocols for irrigation and maintenance of the translocated plants where appropriate; (4) set forth performance criteria (e.g., establishment of quantitative goals, expressed in percent cover or number of individuals, comparing the restored and impacted population) and remedial measures for the translocation effort; and (5) establish a five-year monitoring procedures/protocols for the translocated plants.

The following species will be targeted for focused pre-construction surveys:

- Catalina mariposa lily (*Calochortus catalinae*)
- Club-haired mariposa lily (*Calochortus clavatus* var. *clavatus*)
- Plummer's mariposa lily (*Calochortus plummerae*)
- Many-stemmed dudleya (*Dudleya multicaulis*)
- Robinson's pepper grass (*Lepidium virginicum* var. *robinsonii*)
- Coulter's matilija poppy (*Romneya coulteri*)

Mitigation Measure I-3: To avoid impacting nesting birds, including migratory birds and raptors, one of the following shall be implemented:

- Conduct vegetation removal associated and building demolition with construction from September 1st through January 31st, when birds are not nesting. Initiate grading activities prior to the breeding season (which is generally February 1st through August 31st) and keep disturbance activities constant throughout the breeding season to prevent birds from establishing nests in surrounding habitat (in order to avoid possible nest abandonment); if there is a lapse in activities of more than five days, pre-construction surveys shall be necessary as described in the bullet below.

  - OR -

- Conduct pre-construction surveys for nesting birds if vegetation removal, building demolition or grading is initiated during the nesting season. A qualified wildlife biologist shall conduct a weekly pre-construction bird survey no more than 30 days prior to initiation of grading to provide confirmation on the presence or absence of active nests in the vicinity (at least 300 to 500 feet around the individual construction site, as access allows). The last survey should be conducted no more than three days prior to the initiation of clearance/construction work. If active nests are encountered, clearing and construction in the vicinity of the nest shall be deferred until the young birds have fledged and there is no

evidence of a second attempt at nesting. A minimum exclusion buffer of 300 feet (500 feet for raptor nests) or as determined by a qualified biologist, shall be maintained during construction depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel and activities restricted from the area. Construction personnel should be instructed on the sensitivity of the area. A survey report by the qualified biologist documenting and verifying compliance with the mitigation and with applicable state and federal regulations protecting birds shall be submitted to the City and County Department of Planning in charge of Mitigation Monitoring, depending on within which jurisdiction the construction activity is occurring. The qualified biologist shall serve as a construction monitor during those periods when construction activities would occur near active nest areas to ensure that no inadvertent impacts on these nests would occur.

Mitigation Measure I-4: In order to prevent damage to any protected trees that would be avoided within the City or County area during Project construction, the following measures shall be implemented for any such trees within 20 feet of an active construction area:

Pre-Construction

- *Fencing*: Chain-link fencing, not less than 4 feet high with tree-protection signs, shall be erected around all undisturbed trees (or tree groups). The protective fence shall be installed at the protected zone boundary of each tree (or tree group), which is defined as five (5) feet beyond the tree canopy dripline. The intent of protection fencing is to prevent root damage and/or compaction by grading equipment. A Registered Consulting Arborist may be required on-site if grading activities occur within the tree protected zone. The fencing shall be secured to 6-foot, heavy gauge t-bar line posts, pounded in the ground a minimum of 18-inches and spaced a minimum of 8-feet on-center. Fencing shall be attached to t-bar posts with minimum 14-gage wire fastened to the top, middle and bottom of each post. Tree protection signs shall be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut and aligned at all times. Fencing shall be removed only after all construction activities are complete.

- *Pre-Construction Meeting*: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders, etc.) and a Registered Consulting Arborist. The meeting shall focus on instructing the contractors on tree protection practices and to answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground shall provide written acknowledgement of their receiving tree protection training. This training shall include

information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that shall accomplish such.

During Construction

- *Equipment Operation and Storage*: Contractors shall avoid using heavy equipment operation around the undisturbed, protected trees. Operating heavy machinery around the root zones of trees would increase soil compaction, which decreases soil aeration and subsequently reduces water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the fenced protected tree zone, unless where specifically approved in writing and under the supervision of a Registered Consulting Arborist.

- *Materials Storage and Disposal*: Contractors shall not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protected zone, and shall remove all foreign debris within the protected zone. However, the contractors shall leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrient supply. In addition, contractors shall avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) shall be disposed of properly. The contractors shall ensure that equipment be parked at least 50 feet from the protected zone to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could result in tree decline and/or mortality.

- *Grade Changes*: Contractors shall ensure that grade changes, including adding fill, shall not be permitted within the protected zone without special written authorization and under supervision by a Registered Consulting Arborist. Lowering the grade within the protected zone would necessitate cutting main support and feeder roots, thus jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade would compact the soil further, and decrease both water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the protected tree zone shall not create conditions that allow water to pond at the base of the tree. Water trapped at the base of a tree could lead to root rot and other detrimental tree impacts.

- *Moving Construction Materials*: Contractors shall ensure that care be exercised when moving construction equipment or supplies near the protected trees, especially overhead. Contractors shall ensure that damage to the tree(s) be avoided when transporting or moving construction materials and working around the tree (even outside of the fenced protected zone). Contractors shall flag above ground tree parts that could be damaged (e.g., low limbs, scaffold branches, trunks) with high visibility flagging, such as

florescent red or orange. If contact with the tree crown is unavoidable, conflicting branch(es) may be pruned by an ISA Certified Tree Worker under the supervision of a Registered Consulting Arborist and shall adhere to ISA standards.

- *Trenching*: Except where specifically approved in writing beforehand, all trenching shall be outside of the fenced protected zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root impacts. A Registered Consulting Arborist shall ensure that all pruning cuts shall be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may ultimately result in tree mortality. Use of both root pruning and Air-Spade equipment shall be accompanied only by hand tools to remove soil from trench locations. The trench shall be made no deeper than necessary.

- *Irrigation*: Irrigation of native oaks retained on-site shall seek to mimic natural rainfall patterns in Southern California. Supplemental irrigation for trees adjacent to construction activity may be necessary during winter or spring months. Summer and fall irrigation may be necessary based on variable climatic and site conditions, but should be conducted judiciously to avoid over-watering. One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should be allowed to dry out between watering to avoid keeping a consistently wet soil. The contractors shall be responsible for irrigating (deep watering) the trees. Soil moisture shall be checked with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that would distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone. Over watering of native oaks trees may promote the growth of tree-damaging agents, such as Oak Root Fungus, so proper soil moisture monitoring is critical to prolonged tree health. For any trees that have been substantially root pruned (30% or more of their root zone), irrigation shall be required for the first twelve months. The first irrigation shall occur within 48 hours of root pruning. The tree(s) should be deep watered every two weeks during the summer and once a month during the winter (adjusted accordingly with rainfall).

- *Canopy Pruning*: The contractor shall not prune trees until all construction is completed, unless standard pruning would reduce conflict between canopy and equipment. This would help protect the tree canopies from damage. All pruning shall be conducted by an ISA Certified Tree Worker under the supervision of a Registered Consulting Arborist and shall adhere to ISA pruning standards.

- *Canopy Washing*: During construction, the contractors shall wash the foliage of trees adjacent to construction activity with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

- *Inspection*: A Registered Consulting Arborist shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the Project. A report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the Registered Consulting Arborist or Registered Professional Forester following each inspection.

Post-construction

- *Mulch*: The contractors shall ensure that the natural duff layer under all trees shall be maintained. This would stabilize soil temperatures in root zones, conserve soil moisture, and reduce erosion. The contractors shall ensure that the mulch be kept clear of the trunk base to avoid creating conditions favorable to the establishment and growth of decay causing fungal pathogens. Should it be necessary to add organic mulch beneath retained oak trees, packaged or commercial oak leaf mulch shall not be used as it may contain Oak Root Fungus. Also, the use of Redwood chips shall be avoided as certain inhibitive chemicals may be present in the wood. Other wood chips and crushed walnut shells can be used, but the best mulch that provides a source of nutrients for the tree is its own leaf litter. Any added organic mulch added by the contractors shall be applied to a maximum depth of 4- inches where possible.

- *Pruning*: Regular pruning of the trees is not required. An ISA Certified Tree Worker under the supervision of a Registered Consulting Arborist shall only prune trees to maintain clearance and remove broken, dead or diseased branches. No more than 15% of the canopy shall be removed at any one time. All pruning shall conform to ISA standards.

- *Watering*: The trees should not require irrigation other than the twelve months following substantial root pruning, if applicable. However, soil probing shall be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary.

- *Watering Adjacent Plant Material*: All plants near the trees shall require moderate to low levels of water. The contractor shall water surrounding plants infrequently with deep soaks and allow them to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet, nor should drainage allow ponding of water beneath the canopy of the oak trees. Irrigation spray shall not hit

the trunk of any tree. The contractors shall maintain a 30-inch dry-zone around all tree trunks. An above ground micro-spray irrigation system shall be used in lieu of typical underground pop-up sprays.

- *Chemical Applications*: If the trees are maintained in a healthy state, regular spraying for insect or disease control would not be necessary. If a problem does develop, a Registered Consulting Arborist shall be consulted as the trees may require the application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying shall be performed by a licensed applicator under the direction of a licensed pest control advisor.

- *Monitoring*: A Registered Consulting Arborist shall inspect the trees preserved on-site for a period of seven (7) years following the completion of construction activity. Monitoring visits shall be completed quarterly, totaling twenty-eight (28) visits. Following each monitoring visit, a report summarizing site conditions, observations, tree health, and recommendations for promoting tree health shall be submitted. Additionally, any tree mortality shall be noted and any tree dying during the seven year monitoring period shall be replaced according to the provisions of the proposed City and County Specific Plans.

Mitigation Measure I-5: Mitigation for impacts to oak woodland habitat shall be accomplished through one or a combination of the options presented below.

1. Oak Woodland Conservation Easements – Protect existing oak woodlands on or off the Project Site in perpetuity at a 2:1 acreage ratio through a conservation easement approved by the County and the Department of Fish and Game. Priority should be given to oak habitat that is (1) of equal or greater ecological value as the habitat to be removed, and (2) is contiguous with or adjacent to larger areas of existing woodlands under conservation easements, public lands, or open space lands. Approval should be contingent on demonstrating that such lands meet these criteria to the maximum extent feasible and available. Mitigation for individual developments shall be clustered into the fewest areas possible, to avoid habitat fragmentation.

2. Plant Replacement Trees - Plant and maintain replacement trees on or off the Project Site at a 2:1 tree ratio, with the intention of recreating the acreage of oak woodlands impacted. The goal is to restore declining woodlands or re-establish them where they once grew. The selection of off-site planting should follow the same criteria as noted in option 1 above (equivalent habitat replacement, contiguous with other protected woodland habitat, consolidation of mitigation to avoid fragmentation). Restoration should result in species composition and density similar to the Project Site and appropriate to the restoration site. This type of mitigation shall not fulfill more than

one-half of the mitigation requirements for the project. The replacement of oak woodland habitat, if pursued as a mitigation option, should be coordinated with the replacement of oak trees during implementation of the proposed County Specific Plan Oak Tree Removal regulations. An option is to propose planting a range of sizes including seedlings, 1 gallon, 5 gallon, 15 gallon, 24-inch box, 36-inch box, 48-inch box, and 60-inch box trees (depending on the planting area and the ability to irrigate). The goal is to stress sustainability and replicate natural oak woodlands by creating a diversity of size and age classes. The mitigation oaks shall be maintained for a period of no less than seven (7) years from the date of planting, and replaced if mortality should occur during that seven year period.

3. Oak Woodlands Conservation Funding – This final mitigation alternative involves contributing funds to the California Wildlife Conservation Board's Oak Woodlands Conservation Fund or the County's Oak Forest Special Fund. The contribution amount would equal an in lieu fee of $2,700 for each removed Oak Tree. This fee shall be adjusted by the County Forester consistent with the Consumer Price Index for the Los Angeles-Long Beach metropolitan statistical area on the annual anniversary of the adoption of the proposed County Specific Plan. The contribution should specify that funds should be prioritized for use in acquiring or restoring oak woodland habitat within Los Angeles County.

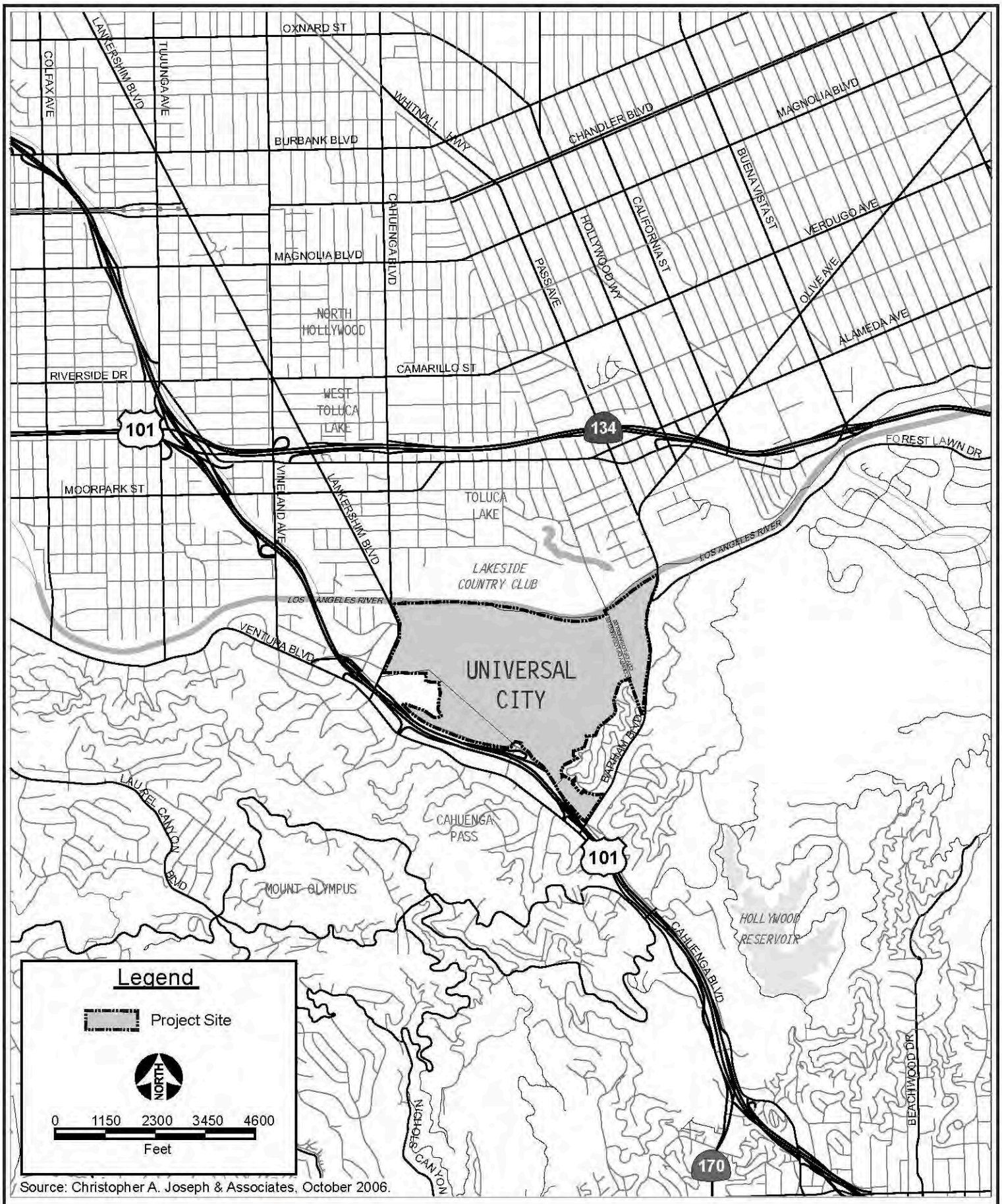
The in lieu fee ($2,700) is the calculated average value of all trees that may be impacted by the Proposed Project and the "No Annexation" Scenario. The value of each impacted tree was calculated using the Trunk Formula Method presented in the "Guide for Plant Appraisal," published by the International Society of Arboriculture (Council of Tree and Landscape Appraisers, 2000).

Compliance with the proposed County Specific Plan oak tree regulations would also satisfy the Oak Woodland mitigation requirements, except that on-site or off-site tree replacement may only satisfy up to half of the mitigation to oak woodland habitat.

Mitigation Measure I-6: Prior to removal of trees within oak woodland habitat of eight inch diameter at breast height or greater, as well as native or non-native palm trees greater than ten feet in height, which may provide roosting habitat for special-status bat species, conduct pre-construction surveys for bats in the immediate vicinity of the affected trees using sonic bat detectors (e.g. Anabat). The surveys shall be conducted at dusk and after nightfall by a biologist. If special-status bats are detected, and based upon the experience of the biologist conducting the surveys, the detected bats are likely roosting in the trees to be removed, then exclusion devices (e.g., netting, canvas, or similar materials) shall be employed once bats have emerged from identified roosts to block access to tree cavities or other roost entry points. If tree removal is to occur during the maternity season (March 1 to September 30), and if during this period the

biologist detects maternity roosts, then removal of the trees shall be delayed for the remainder of the maternity season until the young are sufficiently mature to leave the maternity roost as determined by the biologist.

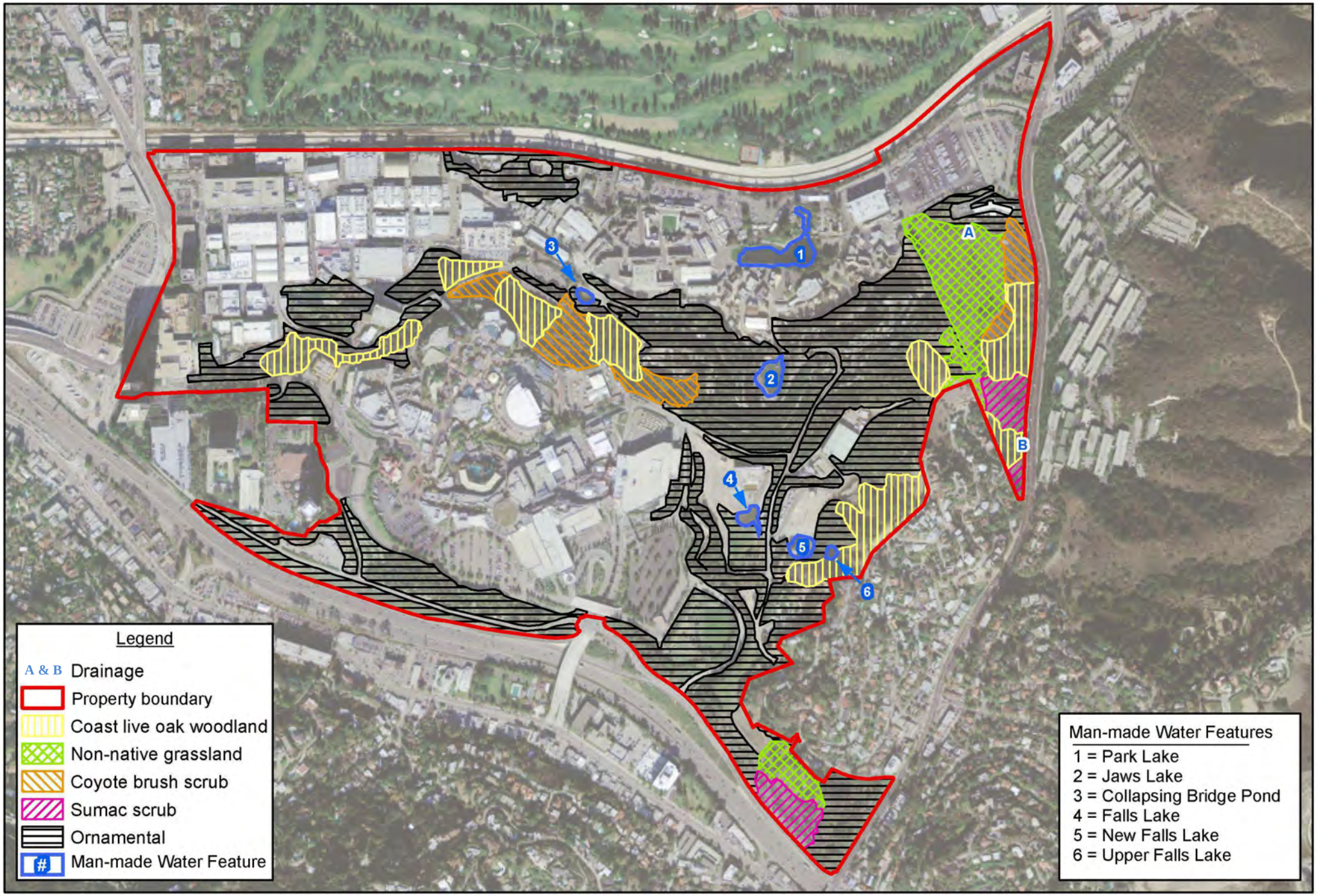
Mitigation Measure I-7: Prior to construction activities that may result in the placement of fill material into the potentially jurisdictional drainage feature along Barham Boulevard [see Figure 2, Drainage B] prepare and submit to the U.S. Army Corps of Engineers for verification a "Preliminary Delineation Report for Waters of the U.S." and a Streambed Alteration Notification package to the California Department of Fish and Game for the drainage feature. If these agencies determine that the feature is not regulated under their jurisdiction, then no further mitigation is necessary. However, if the U.S. Army Corps of Engineers considers the feature to be jurisdictional through a "significant nexus" test per recent U.S. Army Corps of Engineers and U.S. Environmental Protection Agency guidance, then a Clean Water Act Section 404 permit shall be obtained from the U.S. Army Corps of Engineers, and any permit conditions shall be agreed to, prior to the start of construction activities in the affected area. If the California Department of Fish and Game determines that the drainage is a regulated "streambed", then a Streambed Alteration Agreement shall be entered into with the California Department of Fish and Game and any associated conditions shall be agreed to prior to the start of construction in the affected area.



Source: Christopher A. Joseph & Associates, October 2006.

GLENN LUKOS ASSOCIATES
Regulatory Services

Figure 1
Project Location Map



Source: Christopher A. Joseph and Associates

GLENN LUKOS ASSOCIATES
Regulatory Services

NORTH

0 500 1,000 1,500 2,000
Feet

Figure 2
Plant Communities and Site Features

Figure 3

NBCUNIVERSAL EVOLUTION PLAN - CONCEPTUAL

NBCUNIVERSAL | JULY 03, 2012

RIOS CLEMENTI HALE STUDIOS

Appendix FEIR-26

Alternative 10: No Residential Alternative
Biota: Trees

DUDEK

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August 23, 2012 6957-03

Mark Lyum
Project Manager
Universal City Studios LLLP, L.P.
100 Universal City Plaza
Universal City, California 91608

Subject: NBC Universal Evolution Plan Tree Impact Evaluation

Dear Mr. Lyum:

This letter summarizes Dudek's evaluation of potential tree impacts resulting from Alternative 10 – the No Residential Alternative ("Alternative 10"), and compares the potential impacts of Alternative 10 to those of the proposed Project as analyzed in the NBCU Evolution Plan Draft EIR (DEIR). This letter also identifies any modifications to the recommended protected tree regulations and mitigation measures set forth in the DEIR based on the potential impacts under Alternative 10.

A. METHODS

The applicable regulatory definitions and requirements, Project Site information, existing setting, tree assessment methodology, and tree conditions are documented in the NBC Universal Evolution Plan Tree Report prepared by Dudek (September 2010), which is Appendix K-2 to the DEIR. The impact analysis described herein was performed using the Alternative 10 Conceptual Site Plan information provided to Dudek on May 9, 2012.

Within the Business, Studio, and Entertainment Areas, tree impacts under Alternative 10 are expected to be consistent with the impacts evaluated for the Project. However, given the reduction in development within the Project proposed Mixed-Use Residential Area within the existing Back Lot Area, potential impacts were re-evaluated by comparing the Alternative 10 Conceptual Site Plan and existing site base map with the Project Site's tree inventory data set for the existing Back Lot area (Dudek 2010) in a geographic information system (GIS). The tree impact evaluation was based on the spatial relationship between mapped tree points and proposed Alternative 10 improvements. Figure 1 presents trees that are expected to be impacted under Alternative 10. The Alternative 10 Conceptual Plan is an example of how the Project Site could be developed based on Alternative 10 in accordance with the proposed City and County

Specific Plans. Because the actual development could vary from the Alternative 10 Conceptual Plan, it is important to note that the impacts discussed below in this report are approximate.

Dudek also classified trees based on location within the City or County of Los Angeles. This classification was based on anticipated City and County boundaries reflected in proposed annexation areas, as shown in Figure 2. Classification of trees by City or County area was conducted by: 1) creating a composite CAD file differentiating City and County areas based on proposed annexations, and 2) overlaying tree location data onto this composite CAD file to determine appropriate classification.

Following completion of impact determination and City/County location classification, Dudek summarized impacted tree totals for Alternative 10 under two scenarios: 1) Alternative 10 with proposed changes in jurisdictional boundaries, and 2) Alternative 10 if the proposed annexation/detachment does not occur ("No Annexation scenario"). Both of these scenarios are presented in the sections below.

B. IMPACTS WITHIN CITY OF LOS ANGELES

1. Annexation Scenario Impacts

There are 207 Protected Trees that would fall within the proposed jurisdictional boundaries of the City of Los Angeles ("City Area") under Alternative 10. The Protected Trees meeting the minimum size criteria identified in the City Protected Tree Ordinance that would be located within the proposed City Area under Alternative 10 include: 165 coast live oaks (*Quercus agrifolia*), 30 California sycamores (*Platanus racemosa*), and 12 Southern California black walnuts (*Juglans californica var. californica*).

Under Alternative 10 as proposed, a total of 52 coast live oaks, 30 California sycamores, and 12 Southern California black walnuts would have the potential to be removed in the City Area. In total, 94 Protected Trees potentially would be removed if Alternative 10 is developed.

In comparison, under the Project, a total of 321 coast live oaks, 32 California sycamores, and 42 Southern California black walnuts would have the potential to be removed in the City Area. In total, 395 trees protected under the City Ordinance potentially would be removed if the Project is developed.

Table 1
Impacted Regulated Trees within City Jurisdiction, with Annexation

Scientific Name	Common Name	Quantity Impacted		Alternative 10 Impact Difference
		Alternative 10	Project	
Quercus agrifolia	Coast live oak	52	321	-269
Platanus racemosa	California sycamore	30	32	-2
Juglans californica	Southern California black walnut	12	42	-30
	Total	**94**	**395**	**-301**

In addition, under Alternative 10, there would be a total of 30 trees within the proposed City Area that may meet the size criteria identified in the City Protected Tree Ordinance by 2030. These 30 trees include: 12 coast live oaks, 2 California sycamores, and 16 Southern California black walnuts. Four of these trees may be impacted due to the grading required for development of Alternative 10.

In comparison, under the Project, there would be a total of 72 trees within the proposed City Area that may meet the size criteria identified in the City Protected Tree Ordinance by 2030. These 72 trees include: 11 coast live oaks, 2 California sycamores, and 59 Southern California black walnuts. All 72 of these trees may be impacted due to the grading required for development of the proposed Project.

Table 2
Impacted Protected Trees That May Meet the City Protected Tree Ordinance by 2030

Scientific Name	Common Name	Quantity Impacted		Alternative 10 Impact Difference
		Alternative 10	Project	
Quercus agrifolia	Coast live oak	4	11	-7
Platanus racemosa	California sycamore	0	2	-2
Juglans californica	Southern California black walnut	0	59	-59
	Total	**4**	**72**	**-68**

Lastly, under Alternative 10, there would be a total of 219 non-native trees within the proposed City Area. Of these, 147 non-native trees may be impacted due to the grading required for development of Alternative 10. In comparison, under the proposed Project, there would be a total of 795 non-native trees within the proposed City Area. All 795 non-native trees in the City Area may be impacted due to grading required for development of the proposed Project.

Table 3
Impacted Non-Native Trees within City Jurisdiction, with Annexation

Species	Quantity Impacted		Alternative 10 Impact Difference
	Alternative 10	Project	
Non-native tree species	147	795	-648

2. No Annexation Scenario Impacts

Because the jurisdictional boundaries do not change under the No Annexation scenario, the number of existing trees in each jurisdiction under Alternative 10 and the Project are the same. The number of impacts to the trees would differ based on the different proposals for Alternative 10 and the Project.

There are 229 Protected Trees that would fall within the existing City Area under Alternative 10. These include: 141 coast live oaks, 30 California sycamores, and 58 Southern California black walnuts.

Under the Alternative 10 No Annexation scenario, a total of 27 coast live oaks, 30 California sycamores, and 58 Southern California black walnuts would have the potential to be removed in the City Area. In total, 115 Protected Trees in the existing City Area under the Alternative 10 No Annexation scenario would be removed.

In comparison, under the Project No Annexation scenario, a total of 141 coast live oaks, 30 California sycamores, and 58 Southern California black walnuts would have the potential to be removed in the existing City Area. In total, all 229 Protected Trees in the existing City Area under the No Annexation scenario have the potential to be removed under the proposed Project.

Table 4
Impacted Regulated Trees within City Jurisdiction, No Annexation

Scientific Name	Common Name	Quantity Impacted		Alternative 10 Impact Difference
		Alternative 10	Project	
Quercus agrifolia	Coast live oak	27	141	-114
Platanus racemosa	California sycamore	30	30	0
Juglans californica	Southern California black walnut	58	58	0
	Total	**115**	**229**	**-114**

In addition, under the Alternative 10 No Annexation scenario, there are a total of 73 trees within the existing City Area that may meet the size criteria identified in the City Protected Tree

Ordinance by 2030. These 73 trees include: 9 coast live oaks, 2 California sycamores, and 62 Southern California black walnuts. Of these, 47 may be impacted due to the grading required for development under the Alternative 10 No Annexation scenario.

In comparison, under the Project No Annexation scenario, all 73 of these trees may be impacted due to the grading required for development under the Project No Annexation scenario.

Table 5
Impacted Protected Trees That May Meet the City Protected Tree Ordinance by 2030, No Annexation

Scientific Name	Common Name	Quantity Impacted		Alternative 10 Impact Difference
		Alternative 10	Project	
Quercus agrifolia	Coast live oak	1	9	-8
Platanus racemosa	California sycamore	0	2	-2
Juglans californica	Southern California black walnut	46	62	-16
	Total	**47**	**73**	**-26**

Lastly, there are a total of 671 non-native trees within the existing City Area. Under the Alternative 10 No Annexation scenario, 447 trees in the existing City Area may be impacted due to grading required for development. In comparison, under the Project No Annexation scenario, all of the 671 non-native trees in the existing City Area may be impacted due to grading required for development.

Table 6
Impacted Non-Native Trees within City Jurisdiction, No Annexation

Species	Quantity Impacted		Alternative 10 Impact Difference
	Alternative 10	Project	
Non-native tree species	447	671	-224

C. IMPACTS WITHIN COUNTY

1. Annexation Scenario Impacts

Trees that meet both the State Oak Woodlands Statute and the Los Angeles County Oak Tree Ordinance are counted under each respective regulatory program. Therefore the impact totals presented below reflect a double counting for the trees that meet both the State Oak Woodlands Statute and the Los Angeles County Oak Tree Ordinance criteria.

A total of 459 oak trees meeting the criteria outlined in the State Oak Woodlands Statute and located within oak woodlands identified by the project biologist would fall within the proposed jurisdictional boundaries of Los Angeles County ("County Area") under Alternative 10. Under Alternative 10, 131 coast live oaks may be impacted by the proposed development and 328 would remain undisturbed. In comparison, under the Project, a total of 338 coast live oaks meeting the criteria outlined in the State Oak Woodlands Statute and located within oak woodlands identified by the project biologist would fall within the County jurisdiction. Of these, 70 coast live oaks have the potential to be impacted and 268 would remain undisturbed under the proposed Project.

A total of 571 oak trees meeting the criteria outlined in the County of Los Angeles Oak Tree Ordinance would be in the proposed County Area under Alternative 10. Under Alternative 10, 252 oak trees may be impacted by the proposed development and 319 would remain undisturbed. In comparison, under the Project, a total of 438 oak trees meeting the criteria outlined in the County Oak Tree Ordinance would be in the proposed County Area, of which a total of 199 oak trees would have the potential to be impacted in the County Area and 239 would remain undisturbed.

Table 7
Comparison of Impact Status of Oak Trees meeting the State Oak Woodlands Statute and LA County Oak Tree Ordinance, With Annexation

Impact Status	State Oak Woodlands Statute		LA County Oak Tree Ordinance	
	Alternative 10	Project	Alternative 10	Project
Impacted	131	70	252	199
Undisturbed	328	268	319	239
Total	459	338	571	438

In addition, under Alternative 10, there would be a total of 41 coast live oaks within the proposed County Area that may meet the tree size criteria identified in the State Oak Woodlands Statute by 2030. Of these, 4 trees may be impacted due to the grading required for development and 37 would remain undisturbed under Alternative 10. In comparison, under the Project, there would be a total of 30 coast live oak trees within the proposed County Area that may meet the tree size criteria given in the State Oak Woodlands Statute by 2030. Of these trees, 4 may be impacted due to the grading required for development of the proposed Project.

Under Alternative 10, there are a total of 113 oak trees within the proposed County Area that may meet the tree size criteria identified in the County of Los Angeles Oak Tree Ordinance by 2030. Of these, 27 trees may be impacted due to the grading required for development and 86 would remain undisturbed under Alternative 10. In comparison, under the Project, there are a

total of 80 oak trees within the proposed County Area that may meet the tree size criteria in the County of Los Angeles Oak Tree Ordinance by 2030. Of these trees, 16 may be impacted due to the grading required for development of the proposed Project.

Table 8
Comparison of Impact Status of Oak Trees That May Meet the State Oak Woodlands Statute and LA County Oak Tree Ordinance Criteria by 2030, With Annexation

Impact Status	State Oak Woodlands Statute		LA County Oak Tree Ordinance	
	Alternative 10	Project	Alternative 10	Project
Impacted	4	4	27	16
Undisturbed	37	26	86	64
Total	**41**	**30**	**113**	**80**

2. No Annexation Scenario Impacts

A total of 488 oak trees meeting the criteria outlined in the State Oak Woodlands Statute and located within oak woodlands identified by the project biologist are in the existing County Area. Of these, 160 coast live oaks may be impacted by the proposed development of the Alternative 10 No Annexation scenario, and 328 would remain undisturbed. In comparison, under the Project No Annexation scenario, a total of 220 of the coast live oaks meeting the criteria outlined in the State Oak Woodlands Statute and located within oak woodlands identified by the project biologist would have the potential to be removed in the County Area and 268 would remain undisturbed.

A total of 598 oak trees meeting the criteria outlined in the County of Los Angeles Oak Tree Ordinance are in the existing County Area. Of these, 279 oak trees may be impacted by the proposed development of Alternative 10 No Annexation scenario, and 319 would remain undisturbed. In comparison, under the Project No Annexation scenario, a total of 359 oak trees meeting the criteria outlined in the County of Los Angeles Oak Tree Ordinance would have the potential to be removed in the County Area and 239 would remain undisturbed.

Table 9
Comparison of Impact Status of Oak Trees meeting the State Oak Woodlands Statute and LA County Oak Tree Ordinance, No Annexation

Impact Status	State Oak Woodlands Statute		LA County Oak Tree Ordinance	
	Alternative 10	Project	Alternative 10	Project
Impacted	160	220	279	359
Undisturbed	328	268	319	239
Total	**488**	**488**	**598**	**598**

There are a total of 35 coast live oaks within the existing County Area that may meet the tree size criteria identified in the State Oak Woodlands Statute by 2030. Of these, 5 trees may be impacted due to the grading required for development of the Alternative 10 No Annexation scenario, and 30 would remain undisturbed. In comparison, under the Project No Annexation scenario, 9 of these trees may be impacted due to the grading required for development.

There are a total of 100 oak trees within the existing County Area that may meet the tree size criteria identified in the County of Los Angeles Oak Tree Ordinance by 2030. Of these, 23 trees may be impacted due to the grading required for development of the Alternative 10 No Annexation scenario, and 77 would remain undisturbed. In comparison, under the Project No Annexation scenario, 37 of these trees may be impacted due to the grading required for development.

Table 10
Comparison of Impact Status of Oak Trees That May Meet the State Oak Woodlands Statute and LA County Oak Tree Ordinance Criteria by 2030, No Annexation

Impact Status	State Oak Woodlands Statute		LA County Oak Tree Ordinance	
	Alternative 10	Project	Alternative 10	Project
Impacted	5	9	23	37
Undisturbed	30	26	77	63
Total	**35**	**35**	**100**	**100**

D. MITIGATION RECOMMENDATIONS

Based on the reduction in tree impacts associated with the Alternative 10 project, it is expected that the quantity of on-site mitigation trees, off-site mitigation trees, and/or in lieu fees would be adjusted accordingly. With the exception of quantity adjustments based on a reduction in tree impact totals, no changes to the protected tree regulations and mitigation criteria outlined for impacted City trees (Section 3.5 of the NBC Universal Evolution Plan Tree Report (September 2010)) or impacted County trees (Section 4.5 of the NBC Universal Evolution Plan Tree Report (September 2010)) is required based on Alternative 10.

E. CONCLUSION

To address the difference in impacts between the proposed Project and Alternative 10, the proper point of comparison is the difference in impact that occurs under the No Annexation scenario, since this scenario involves the same jurisdictional boundaries for both the Project and Alternative 10. As discussed above in the No Annexation sections for the proposed Project and Alternative 10, Alternative 10 would impact approximately 114 less protected trees than the

Project in the City, and approximately 60 less protected trees under the State Oak Woodlands Statute and approximately 80 less protected trees under the Los Angeles County Oak Tree ordinance. Accordingly, Alternative 10's impacts would be less than those of the proposed Project.

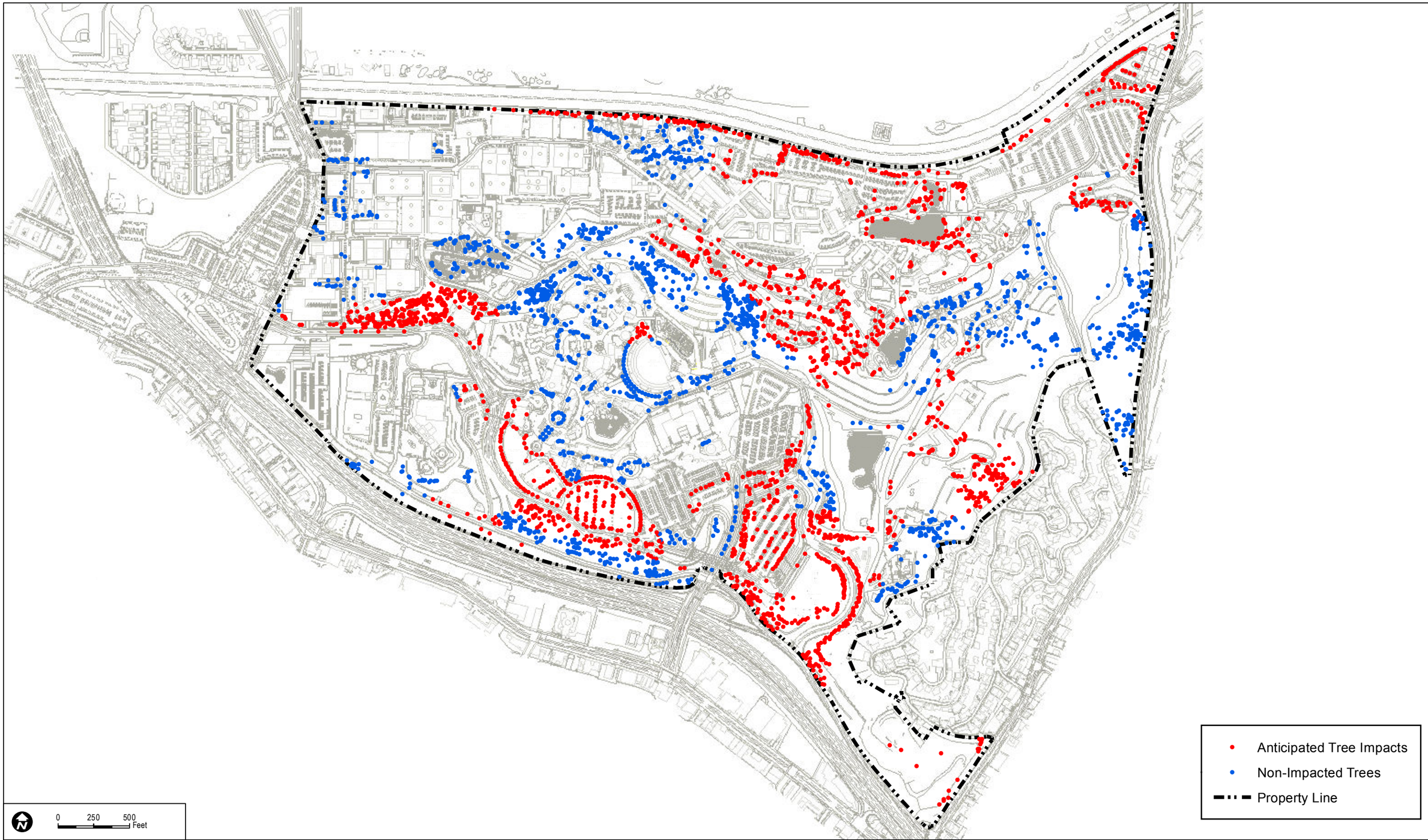
With the proposed changes in jurisdictional boundaries, some trees also may be subject to different regulations following annexation/detachment. Both the City and County jurisdictions treat oak trees as protected trees. California sycamores and Southern California black walnuts are protected trees in the City, but are not regulated in the County. There are no California sycamores that would change jurisdiction after the proposed annexation/detachment. However, there are existing Southern California black walnuts that will be subject to different regulations under Alternative 10 due to the shift in jurisdictional boundaries. While the Southern California black walnuts that would move from City to County jurisdiction would no longer be protected under the City's protected tree ordinance, impacts to these trees would be mitigated to a less than significant level pursuant to proposed Mitigation Measure I-1 in the DEIR. Accordingly, the shifts in jurisdictional boundaries under Alternative 10 would not have a significant impact on protected trees.

Lastly, if the jurisdictional boundaries were to change in a different manner than proposed under Alternative 10, impacts would remain the same given the proposed Project Design Features and Mitigation Measures described in this report for Alternative 10 (e.g., if the area south of the existing hotel and Universal Hollywood Drive was to move from the City to the County, impacts would remain the same with implementation of the proposed Project Design Features and Mitigation Measures for Alternative 10).

Sincerely,

Michael Huff
Manager, Urban Forestry and Fire Protection Planning Services

Att.: Figure 1. Alternative 10 Tree Impact Evaluation Map
Figure 2. Alternative 10 Proposed Annexation Scenario



DUDEK

6957-03

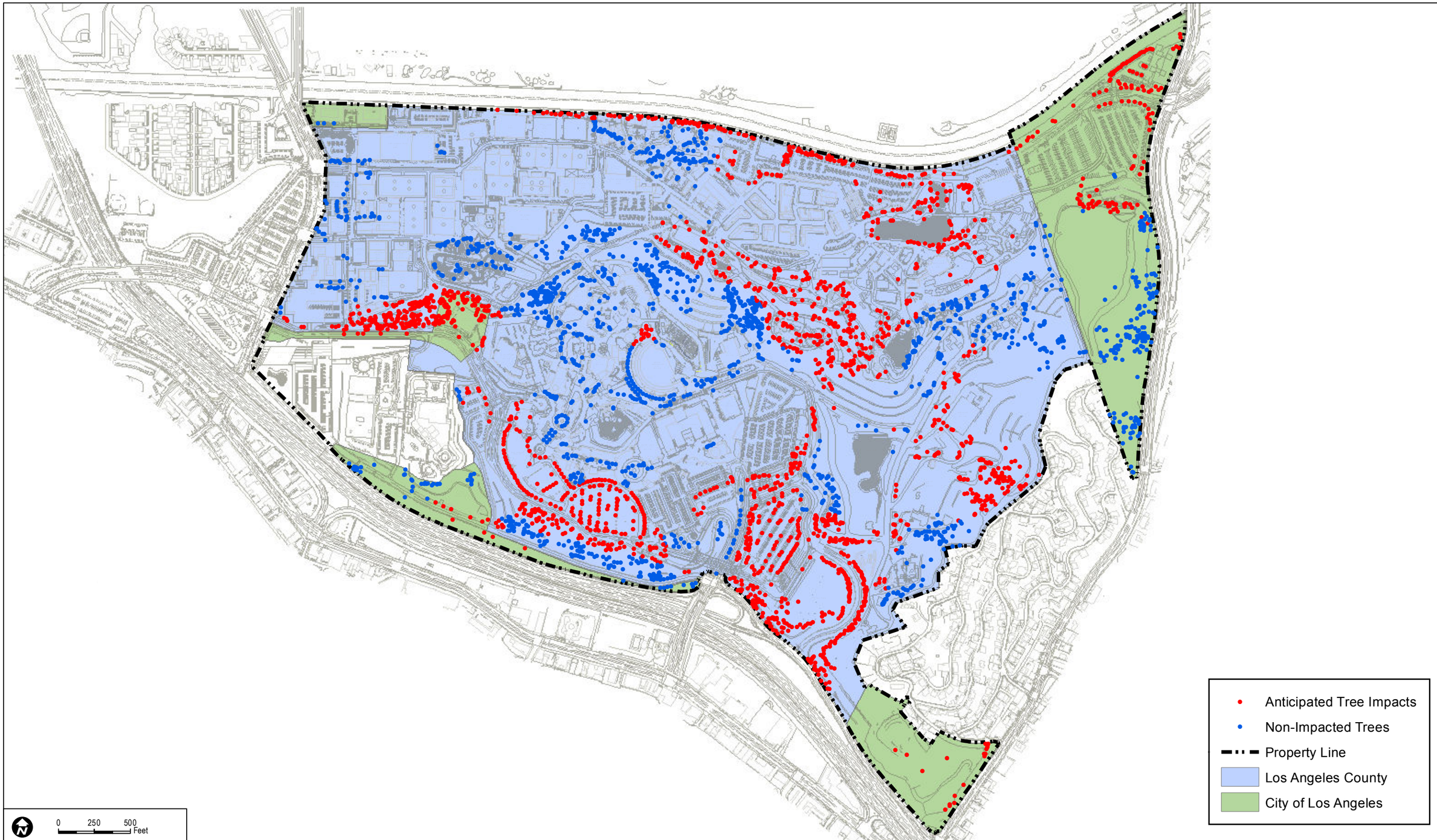
AUGUST 2012

SOURCE: Dudek; Rios Clement Hale Studios

FIGURE 1

Alternative 10 Tree Impact Evaluation Map

NBC Universal Evolution Plan Tree Impact Evaluation



DUDEK

6957-03

AUGUST 2012

SOURCE: Dudek; Rios Clement Hale Studios

FIGURE 2

Alternative 10 Proposed Annexation Scenario

NBC Universal Evolution Plan Tree Impact Evaluation

Appendix FEIR-27

Alternative 10: No Residential Alternative
Cultural Resources: Historic Resources

To: Bruce Lackow

Matrix Environmental

From: Paul Travis, Christy McAvoy

Date: August 23, 2012

Re: NBC Universal Evolution Plan, Alternative 10 – Historic Resources

Historic Resources Group ("HRG") has reviewed the conceptual site plan for the No Residential Alternative ("Alternative 10"). This memorandum summarizes HRG's evaluation of potential historic resources impacts from Alternative 10 and compares the potential impacts of Alternantive 10 to those of the proposed Project as analyzed in the NBC Universal Evolution Plan Draft EIR ("DEIR").

Project Description

Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the proposed Project while increasing the Studio Office, Hotel, and Entertainment uses of the proposed Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, identified as the Mixed-Use Residential Area under the proposed Project, Alternative 10 would also retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be

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demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Moreover, with the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, the relocation of some existing Back Lot uses would not occur under Alternative 10, as it would under the proposed Project. As such, Alternative 10 would result in some Studio and Entertainment uses being developed in the Back Lot Area.

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

Methodology

This memorandum incorporates by reference the information regarding methodology, regulations, and thresholds contained in the *Historic Resources Technical Report* prepared by HRG (March 2010), which is included as Appendix L-1 to the DEIR. This memorandum also incorporates by reference the summary of such information and conclusions contained in Section IV.J.1, *Cultural Resources – Historic Resources*, of the DEIR.

Contributing Buildings

Based upon HRG's review of the conceptual plan for Alternative 10, HRG concludes as follows:

- Alternative 10 directly affects two contributing buildings to the potential historic district: the Jack Webb Building (#2250), the William Goetz Building (#2252). These buildings were also identified for demolition in the analysis for the proposed Project.
- Alternative 10 may demolish or partially demolish a contributing stage building (#2263) that was not identified for demolition in the analysis of the Project .
- The analysis for the proposed Project also included demolition of three other buildings: Office Bungalow (#4111), Office Bungalow (#4113) and the Film Vault (#6237). Development of Alternative 10 will not result in demolition of these buildings.

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- All other new construction shown in Alternative 10 affects non-contributing buildings or buildings outside of the historic district.

Thus, Alternative 10 would demolish and/or alter three contributing buildings whereas the proposed Project would demolish and/or alter five contributing buildings

Backlot Site

Based upon HRG's review of the conceptual plan for Alternative 10, HRG concludes as follows:

- New construction within the contributing Backlot site consists of new Studio uses. All of these uses are in keeping with historic backlot uses and should not significantly alter the historic development pattern of the Backlot site.

Conclusions

In summary, Alternative 10 would demolish and/or alter three contributing buildings whereas the proposed Project would demolish and/or alter five contributing buildings. In addition, the proposed changes to the Backlot site do not appear to significantly alter the site's historic character or use. Subject to the mitigation measures to reduce impacts to the historic district that are contained in Section IV.J.1, *Cultural Resources – Historic Resources*, of the DEIR, including compliance with the proposed Preservation Plan, Alternative 10 would have less impact to the potential historic district than under the Project.

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Appendix FEIR-28

Alternative 10: No Residential Alternative Utilities: Sewer, Water, Electricity, and Natural Gas

MEMORANDUM

To: **Bruce Lackow** **Job Number: 237-004**

Of: **Matrix Environmental** **Date: August 24, 2012**

From: **Incledon Consulting Group**

RE: **NBC Universal Evolution Plan Alternative 10 – Utility Analysis**

The No Residential Alternative ("Alternative 10") was introduced as an alternative for inclusion in the Environmental Impact Report (EIR) for the NBC Universal Evolution Plan. Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the Studio office and Entertainment uses of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood retail and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

The following is a tabular comparison of the proposed net new square footage by land use under Alternative 10 and the proposed Project:

Land Use	Net New Project Development	Net New Alternative 10 Development
Studio (sq. ft.)	307,949	307,949
Studio Office (sq. ft.)	437,326	647,320 [a]
Office (sq. ft.)	495,406	495,406
Entertainment (sq. ft.)	145,655	337,895
Entertainment Retail (sq. ft.)	39,216	39,216
Amphitheater (sq. ft.)	(50,600)	(50,600)
Hotel	450,000 [b]	900,000 [c]
Neighborhood Retail and Community - Serving Commercial (sq. ft.)	180,000	0
Residential	2,937 units	0 units
Total		
Commercial (sq. ft.)	**2,004,952**	**2,677,186**
Residential	**2,937 units**	**0 units**

[a] *Studio Office uses under Alternative 10 include a 5,000 square foot expansion of an existing child care center.*

[b] *Includes up to 500 hotel guest rooms and related hotel facilities.*

[c] *Includes up to 1,000 hotel guest rooms and related hotel facilities.*

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (within the existing Back Lot Area) of the Project Site.

An evaluation of the potential impacts of the proposed Alternative 10 on utilities, including water, wastewater, natural gas and electricity, was completed in an effort to assess the significance of the impacts in comparison to the proposed Project. The following sections include a summary of those utility evaluations:

Water

The water systems within the Project Site are divided into three types of service: domestic water, fire water, and recycled water, all of which are provided by the Los Angeles Department of Water and Power (LADWP). A detailed description of the existing water systems can be found in Section IV.L.2, Utilities – Water, of the Draft EIR and the Water System Technical Report included as Appendix N-1-1 to the Draft EIR.

This study identifies the potential impacts on the LADWP and on-site water supply and distribution system resulting from Alternative 10. The future daily water demand flows for Alternative 10 were

determined based on the same methodology described in Section IV.L.2 of the Draft EIR and the Water System Technical Report for the Project. The calculated net new water demands for Alternative 10 are shown in Table 1 at the end of the memorandum.

Alternative 10 would increase the demand for domestic and fire water over existing conditions and would require the construction of additional domestic and fire water infrastructure. As with the analysis for the Project, use of recycled water has not been included in the net new demands and all irrigation is assumed to be provided through domestic water as this is more conservative for domestic water demand. The net new domestic water consumption for Alternative 10 is approximately 657,316 gallons per day (gpd) (736.2 acre-feet per year) for average daily flows and 1,209,963 gpd (1,355 acre-feet per year) for peak daily flows. However, these estimated average and peak flow increases do not include any reduction for water conservation measures. It is assumed that Alternative 10 would include similar water project design features identified for the Project, including water conservation measures and the water supply augmentation agreement with LADWP. Therefore, this analysis provides a conservative representation of the net new consumption.

As with the Project, Alternative 10 would require improvements to the existing on-site water distribution systems. Figures 1, 2 and 3 show the proposed improvements to the domestic water, fire water and recycled water systems, respectively. Alternative 10 improvements would include installation of 12-inch water lines associated with the development of the northeast portion of the Project Site. Additional laterals off the 6-inch water line in Steven Spielberg Lane to service the new development along Janet Leigh Drive would need to be constructed. Also, the section of the LADWP 12- and 16-inch water lines that run along Universal Hollywood Drive would need to be removed and relocated in connection with the proposed changes to Universal Hollywood Drive, and service laterals to the new developments along Universal Hollywood Drive would need to be installed.

All proposed buildings on the Project Site would be designed for fire protection in accordance with City of Los Angeles (City) or County of Los Angeles (County) fire codes as applicable. Fire flows have not been considered in the proposed net domestic water consumption calculations since fire flow demands are intermittent and variable. However, Alternative 10 would comply with all applicable City and County requirements regarding fire flows and any additional water lines and hydrants that may be needed to provide additional fire flow service to new buildings would be constructed as necessary. In evaluating the water system, the new on-site water lines would be sized to accommodate both fire flow demand and peak day domestic demand. The design and installation of new water lines would meet applicable City and County standards. All new water lines that deliver both domestic and fire water would be constructed with the necessary materials and at an appropriate size to deliver the appropriate instantaneous demand on the individual water line. The proposed improvements to the fire water system are shown on Figure 2.

The existing recycled water distribution system of pumps and storage areas on the Project Site has enough capacity for the current recycled water demands and would remain in service for Alternative 10. As such, unlike the Project, Alternative 10 would retain Upper Falls Lake, New Falls Lake, and Falls Lake, on-site man made water features where recycled water is stored until needed. However, since there is an increase in the irrigation demand for Alternative 10, additions to the existing recycled water distribution system, including new underground storage tanks and lines, would be required to handle the increase in recycled water demand for the Project Site. Underground storage tanks would be located in the Studio Area and would be sized to appropriately supply and store recycled water demands. The maximum size of each individual underground tank would be approximately 50,000 gallons and there would be a maximum of ten tanks installed.

If portions of the proposed Alternative 10 Project Site are not annexed into the City and portions of the Alternative 10 Project Site not detached from the City and annexed into the County, all water service

would continue to be provided by LADWP, as described above. The net new water consumption under the no annexation scenario is shown in Table 2 at the end of the memorandum, and the total net new would be the same as under Alternative 10 as described above. If jurisdictional boundaries are altered differently than identified in Alternative 10, there would be no additional impact to water service beyond that which is discussed above as LADWP would continue to provide water service to all portions of the Project Site.

Alternative 10 will increase demand for domestic, fire and recycled water and will require relocation and construction of domestic fire and recycled water lines within the Project Site. Construction impacts (street, traffic detouring and control, and impacts to other utilities) will be confined to trenching for water lines and removing existing on-site man-made water features. These impacts will be temporary in nature. Vehicle and pedestrian access will be impacted during the connection of the proposed on-site water mains to the existing LADWP mains located in Barham Boulevard and Lankershim Boulevard. Connection to the existing LADWP mains will require traffic lane closures for approximately one week at the each location. During the construction of Alternative 10, additional water demand may be required during grading up to 340 gpm during the typical eight-hour work day. Adequate facilities for the provision of water exist, and there would continue to be an adequate supply of water for construction purposes. Therefore, potential construction-related impacts under Alternative 10 would be less than significant.

In comparison to the proposed Project, the new net domestic water consumption for Alternative 10 would be 457,699 gpd less than the proposed Project increase for average daily flows and would be 757,552 gpd less than the proposed Project increase for peak daily flows. Because the increase of net new domestic water consumption with Alternative 10 would be less than the net new domestic water consumption of the proposed Project, Alternative 10 is not anticipated to have a cumulative impact on water supply. Overall, the potential impacts of Alternative 10 with regard to water would be less than significant, and further reduce the less than significant impacts with mitigation of the Project.

Wastewater

The Project Site is served by on-site, private, gravity flow sanitary sewers which ultimately connect to City sanitary sewers. A detailed description of the existing wastewater system can be found in Section IV.L.1, Utilities – Sewer, of the Draft EIR and the Wastewater/Sewer System Technical Report included as Appendix N-2-1 to the Draft EIR.

This study identifies the potential impacts to both the City and private sanitary sewer lines resulting from Alternative 10. The future wastewater discharge of Alternative 10 was determined based on the same methodology described in Section IV.L.1 of the Draft EIR and the Wastewater/Sewer System Technical Report for the Project. The calculated net new wastewater discharge with Alternative 10 is shown in Table 3 at the end of the memorandum.

Alternative 10 would result in an overall increase in sanitary sewer wastewater flows over existing conditions and will require the construction of additional sanitary sewer infrastructure. The average net new daily wastewater discharge of Alternative 10 is estimated to be 0.86 cfs, which is equivalent to 0.56 MGD. Peak daily wastewater discharge from the Project Site under proposed Alternative 10 conditions is 1.60 cfs, which is equivalent to 1.04 MGD. However, these estimated average and peak wastewater discharges do not include any reduction in discharges that would result from water conservation measures. It is assumed that Alternative 10 would include similar wastewater project design features and water conservation measures identified for the Project. Therefore, this analysis provides a conservative representation of the net new demand on the wastewater system.

As with the Project, in order to accommodate Alternative 10, a number of new major sewer lines (6-inches and larger) would be constructed, as shown on Figure 4. To supply new development in the northeast portion of the proposed Studio Area, the Applicant would construct a new 12-inch sewer line constructed off-site that would run parallel to the Los Angeles River Flood Control Channel along River Road. The 12-inch sewer line would extend from an existing stub of the Valley Relief Sewer to Lakeside Plaza Drive. Additionally, the Applicant would construct an extension of the 12-inch sewer line in Steven Spielberg Drive to provide laterals to the new development along Janet Leigh Drive.

The reconstruction of Universal Hollywood Drive and the developments along the new road would require some of the existing sewer lines to be removed and new 12-inch sewer lines to be constructed. Some existing on-site sewer lines in the Business, Studio and Entertainment Areas would be replaced with larger lines to handle the increase in wastewater as areas of the Project Site are further developed. Prior to the development of a new building, the capacity of the on-site sewer lines serving the building would be examined and replacement or new sewer lines would be installed as necessary. New sanitary sewer lines in the City portion of the Project Site would be designed and constructed to conform to the standards of the City Bureau of Sanitation. New sanitary sewer lines located within the County portion of the Project Site would be designed to meet both the County and City standards since the wastewater flows from sewer lines located in the County would ultimately discharge to City facilities.

If portions of the proposed Alternative 10 Project Site are not annexed into the City and portions of the Alternative 10 Project Site not detached from the City and annexed into the County, all wastewater service would continue to be provided by the City, as described above. The net new wastewater flows under the no annexation scenario are shown in Table 4 at the end of the memorandum, and the total net new would be the same as under Alternative 10 as described above. If jurisdictional boundaries are altered differently than identified in Alternative 10, there would be no additional impact to wastewater service beyond that which is discussed above as the City would continue to provide wastewater service to all portions of the Project Site.

No significant increase in wastewater flows from the Project Site is expected as a result of construction activities. Most of the additional sanitary sewer facilities needed to serve the Project will be constructed within the Project Site. As discussed above, a 12-inch sewer line will be constructed off-site along River Road to provide a connection from the new development in the northeast portion of the proposed Studio Area to the City's Valley Relief Sewer. There will also be off-site construction within Lankershim Boulevard when the proposed 12-inch sewer in Universal Hollywood Drive is connected to the 18-inch City sewer in Lankershim Boulevard. Construction impacts (street, traffic detouring and control, and impacts to other utilities) will be confined to trenching for the sanitary sewer lines and will be temporary in nature. Alternative 10 construction impacts would be less than significant.

In comparison to the Project, the net new wastewater flows for Alternative 10 would be 0.53 cfs (0.34 MGD) less than the proposed Project increase for average flow rates and 0.89 cfs (0.57 MGD) less than the proposed Project increase for peak flow rates. There is sufficient capacity in the City Valley Relief Sewer and the 18-inch diameter City sewer line located in Lankershim Boulevard to accommodate the cumulative increase (forecasted growth from areas serviced by the City sewer lines in combination with the proposed Project increase in wastewater flows) in average and peak flow rates. Because net new Alternative 10 wastewater flows are less than the net new wastewater flows for the proposed Project, the City sewer lines have sufficient capacity to accommodate the wastewater flows under Alternative 10. In addition, related projects would be required to improve or replace substandard or deteriorated utility lines per the requirements of the respective local jurisdiction. Each related project would be required to comply with the water conservation programs of the local jurisdictions and the state. As a result, the potential cumulative impacts of Alternative 10 with regard to wastewater would be less than significant. Impacts

to off-site sewer lines and Hyperion Service Area capacity under Alternative 10 would be less than significant, and would further reduce the less than significant impacts of the Project.

Natural Gas

The existing Project Site is served by Southern California Gas Company (SCG) natural gas lines. A detailed description of the existing natural gas system can be found in Section IV.L.5, Utilities – Natural Gas, of the Draft EIR and the Natural Gas System Technical Report included as Appendix N-4-1 to the Draft EIR.

This study identifies the potential impacts to SCG and private natural gas supply and service lines resulting from Alternative 10. The future natural gas consumption of Alternative 10 was determined based on the same methodology described in Section IV.L.5 of the Draft EIR and the Natural Gas System Technical Report for the Project. The calculated net new natural gas consumption with Alternative 10 is shown in Table 5 at the end of the memorandum.

Alternative 10 would increase the demand for natural gas supply over existing conditions and would require the construction of additional natural gas line infrastructure. The average net new natural gas consumption of Alternative 10 is projected to be approximately 8.22 million cubic feet per month. Net new consumption does not take into consideration any reduction in natural gas consumption due to energy conservation features that may be incorporated in the Project. It is assumed that Alternative 10 would include similar energy conservation project design features as identified for the Project. Therefore, this analysis provides a conservative representation of the net new consumption.

As with the Project, Alternative 10 would require improvements to the existing natural gas distribution systems. Figure 5 shows the proposed natural gas lines (2-inch in diameter or larger) for Alternative 10 to connect to the existing SCG lines and private distribution system on-site. To supply new development in the northeast portion of the proposed Studio Area, the Applicant would construct a new 4-inch gas main along Lakeside Plaza Drive. This gas main would connect to the existing 6-inch SCG main line running along Barham Boulevard. Additionally, the Applicant would construct an extension of the private 4-inch gas line located along Steven Spielberg Drive and a system of 2-inch service lateral lines to the individual buildings along Janet Leigh Drive.

A portion of the existing 6-inch SCG main located beneath Universal Hollywood Drive would need to be removed and relocated in connection with the realignment of Universal Hollywood Drive, but this change would not affect the capacity or supply capabilities of that main line. Service lateral lines to individual buildings would be provided along Universal Hollywood Drive.

If portions of the proposed Alternative 10 Project Site are not annexed into the City and portions of the Alternative 10 Project Site not detached from the City and annexed into the County, all natural gas service would continue to be provided by SCG, as described above. The net new natural gas consumption under the no annexation scenario is shown in Table 6 at the end of the memorandum, and the total net new would be the same as under Alternative 10 as described above. If jurisdictional boundaries are altered differently than identified in Alternative 10, there would be no additional impact to natural gas service beyond that which is discussed above as SCG would continue to provide natural gas service to all portions of the Project Site.

Construction would include trenching for natural gas lines within the Project Site. Alternative 10, with the exception of a limited number of connections, would not require additions to or modifications of the existing off-site distribution system. Connections to the SCG main line at Lakeside Plaza Drive would require traffic control measures on Barham Boulevard. Traffic control measures would be temporary and

would be limited to one lane closure for one day during intermittent periods. SCG would install all of its lines and connections up to the service meters for the Project Site from SCG facilities and no new off-site facilities would be needed. Alternative 10 would not result in a substantial adverse physical impact or require substantial alteration to or construction of facilities that would cause significant environmental impacts. Therefore, Alternative 10 construction impacts would be less than significant.

In comparison to the Project, the net new natural gas consumption for Alternative 10 would be 9.17 million cubic feet per month less than the proposed Project increase in natural gas consumption. SCG has indicated that it has the facilities and supply for the natural gas demand of the proposed Project and the forecasted cumulative natural gas demand of related projects. Because the net new natural gas consumption for Alternative 10 would be less than the proposed Project, the potential cumulative impact of Alternative 10 with regard to natural gas would be less than significant. Impacts to natural gas supply and natural gas delivery infrastructure under Alternative 10 would be less than significant, and would further reduce the less than significant impacts of the Project.

Electricity

Existing electrical service to the County portions of the Project Site is provided by Southern California Edison (SCE). Existing electrical service to the City portions of the Project Site is provided by LADWP. A detailed description of the existing electrical system can be found in Section IV.L.4 Utilities – Electricity, of the Draft EIR and the Electrical System Technical Report included as Appendix N-3-1 to the Draft EIR.

This study identifies the potential impacts on the SCE, LADWP and on-site electrical supply and distribution system resulting from Alternative 10. The future electrical consumption and demand of Alternative 10 was determined based on the same methodology described in Section IV.L.4 of the Draft EIR and the Electrical System Technical Report for the Project. The calculated net new electrical consumption with Alternative 10 is shown in Table 7 at the end of the memorandum. The calculated net new electrical demand with Alternative 10 is shown in Table 9 at the end of the memorandum.

Alternative 10 would increase the consumption and demand for electricity over existing conditions and would require the construction of additional electrical infrastructure. The average net new electrical consumption of Alternative 10 is approximately 55.8 million kWh/year and the net new electrical demand of Alternative 10 is approximately 16,100 kVA. Of these net new totals, SCE would provide approximately 46.9 million kWh/year and 12,250 kVA, while LADWP would provide approximately 8.9 million kWh/year and 3,851 kVA. These estimated net new consumption and demand increases do not take into consideration any reduction for energy conservation measures. It is assumed that Alternative 10 would include similar energy conservation project design features identified for the Project. Therefore, this analysis provides a conservative representation of the net new consumption and demand.

As with the Project, Alternative 10 would require improvements to the existing electrical distribution systems. SCE has indicated that it has the capacity in its existing supply system to handle an increase in demand for power supplied by its facilities. However, in order to deliver this increased demand to the Project Site, a new 66 kV line will be needed to serve the County portion of the Project Site and the existing on site SCE facilities need to be expanded. It is also assumed that Alternative 10 would include similar electrical project design features for the private on-site and SCE electrical systems as described in Section IV.L.4 of the Draft EIR.

If portions of the proposed Alternative 10 Project Site are not annexed into the City and portions of the Alternative 10 Project Site not detached from the City and annexed into the County, electrical service would continue to be provided by SCE and LADWP, as described above. The net new electrical

consumption and net new electrical demands under the no annexation scenario are shown in Tables 8 and 10, respectively, at the end of the memorandum, and the total net new consumption and demand amounts would be the same as under Alternative 10 as described above. Of these no annexation net new totals, SCE would provide approximately 42.3 million kWh/year and 10,085 kVA, while LADWP would provide approximately 13.5 million kWh/year and 6,016 kVA. SCE would be able to provide service to handle the net new totals under the no annexation scenario with the improvements described above. If jurisdictional boundaries are altered differently than identified in Alternative 10, such as the studio uses proposed south of Universal Hollywood Drive and the hotel north of Universal Hollywood Drive being detached from the City and annexed into the County, the change in consumption and demand for SCE and LADWP (48.6 million kWh/year and 12,600 kVA for SCE; 7.2 million kWh/year and 3,500 kVA for LADWP) would not be substantial and would not create a significant impact.

The construction of new buildings and facilities for Alternative 10 will consume electricity. Electrical demand for construction will be supplied from existing electrical services within the Project Site. The construction impacts related to SCE electrical facility improvements include street traffic detouring and control. The existing street right-of-ways in which work is proposed are congested and could require weekend and/or night work. Some of the affected streets are residential and could require and individual lane closure during the day. SCE can construct an average of 100 feet of underground duct bank per day and up to two vaults per day. The overhead line construction would include the installation of heavy duty, bolted base, steel poles and pole footing and installation of light duty, light weight, steel poles. Construction of the new overhead line section would also include re-configuration of pole heads to double circuit. Installation of pedestal risers at the Studio Master Substation termination point will also be necessary. Alternative 10 would not result in any substantial adverse physical impacts or require substantial alteration to or construction of facilities that would cause significant environmental impacts. Therefore, construction impacts would be less than significant.

In comparison to the Project, the net new electrical consumption for Alternative 10 would be 2.6 million kWh/year less than the proposed Project increase in electrical consumption. Net new electrical demand for Alternative 10 would be 10,736 kVA less than net new electrical demand for the proposed Project. Potential impacts from identified growth within both LADWP and SCE service areas, exclusive of the proposed Project or Alternative 10, would be anticipated, and an expansion of LADWP and SCE facilities would likely be required to accommodate the demand attributed to the forecasted off-site growth. However, with the planned area-wide service improvements by the LADWP and SCE and required improvements to facilitate the provision of electrical demand services to each individual development site by developers of individual future projects, LADWP and SCE would provide adequate demand to accommodate future growth and maintain acceptable levels of service. Because the net new electrical demand for Alternative 10 is less than the proposed Project, Alternative 10 would not contribute to cumulative impacts to LADWP and SCE services, and the potential cumulative impacts of Alternative 10 would be less than significant. Overall, electricity consumption and demand would be less than under the proposed Project, and Alternative 10 would further reduce the less than significant cumulative impacts of the proposed Project.

Table 1: Net New Water Consumption Under Proposed Alternative 10

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Water Demand Rate[1] (gpd per 1000 sq. ft.)	Consumption (gpd)	Consumption (ac-ft/yr)
Studio	50,000	80	4,000	4.5
Studio Office	200,000	180	36,000	40.3
Child Care Center[5]	50 children	8/child	400	0.4
Office	0	180	0	0.0
Entertainment	0	180	0	0.0
Entertainment Retail[2]	0	408	0	0.0
Amphitheater[4]	0	N/A	0	0.0
Hotel[3]	500 rooms	260/room	130,000	145.6
Irrigation	N/A	N/A	5,900	6.6
Subtotal			*176,300*	*197.4*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Water Demand Rate[1] (gpd per 1000 sq. ft.)	Consumption (gpd)	Consumption (ac-ft/yr)
Studio	257,949	80	20,636	23.1
Studio Office	442,320	180	79,618	89.2
Office	495,406	180	89,173	99.9
Entertainment	337,895	180	60,821	68.1
Entertainment Retail[2]	39,216	408	16,000	17.9
Amphitheater[4]	(50,600)	N/A	(12,084)	(13.5)
Hotel[3]	500 rooms	260/room	130,000	145.6
Irrigation	N/A	N/A	96,852	108.5
Subtotal			*481,016*	*538.8*
Alternative 10 Total (Average)			**657,316**	**736.2**
Project Total (Average)			**1,115,015**	**1249.1**
Compared to Project			**-41.0%**	**-41.1%**
Alternative 10 Total (Peak)[7]			**1,209,963**	**1,355.4**
Project Total (Peak)			**1,967,515**	**2,204.1**
Compared to Project			**-38.5%**	**-38.5%**

NOTES:

1. Water demand rates supplied by the City of Los Angeles Bureau of Sanitation.
2. Assumes a water demand that reflects a weighted average of 60% retail and 40% restaurant - "full service indoor seat". For the restaurant use, assumes 3 seats per 100 square feet of floor area.
3. The Bureau of Sanitation's water use rate for hotel use is 130 gpd/room. As the hotel is likely to include banquet and related facilities, an additional 130 gpd/hotel room is assumed for the purposes of this analysis to provide a conservative estimate and to account for the additional water used by the banquet and related facilities. Therefore, the total hotel demand rate used in this analysis is 260 gpd/hotel room.
4. Amphitheater water demand based on the reduction of 3,021 seats at 4 GPD demand/seat.
5. Assumes 1 child per 100 feet of floor area.
6. Note not used.
7. Peak Flow Rate = 1.78*(Avg. Water Demand in MGD^0.92) per ASCE Sewer Design Manual.

Table 2: Net New Water Consumption Under Proposed Alternative 10 with No Annexation

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Water Demand Rate[1] (gpd per 1000 sq. ft.)	Consumption (gpd)	Consumption (ac-ft/yr)
Studio	50,000	80	4,000	4.5
Studio Office	450,000	180	81,000	90.7
Child Care Center[5]	50 children	8/child	400	0.4
Office	0	180	0	0.0
Entertainment	0	180	0	0.0
Entertainment Retail[2]	50,000	408	20,400	22.8
Amphitheater[4]	0	N/A	0	0.0
Hotel[3]	500 rooms	260/room	130,000	145.6
Irrigation	N/A	N/A	5,900	6.6
Subtotal			*241,700*	*270.6*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Water Demand Rate[1] (gpd per 1000 sq. ft.)	Consumption (gpd)	Consumption (ac-ft/yr)
Studio	257,949	80	20,636	23.1
Studio Office	192,320	180	34,618	38.8
Office	495,406	180	89,173	99.9
Entertainment	337,895	180	60,821	68.1
Entertainment Retail[2]	(10,784)	408	(4,400)	(4.9)
Amphitheater[4]	(50,600)	N/A	(12,084)	(13.5)
Hotel[3]	500 rooms	260/room	130,000	145.6
Irrigation	N/A	N/A	96,852	108.5
Subtotal			*415,616*	*465.6*
Alternative 10 Total (Average)			**657,316**	**736.2**
Project Total (Average)			**1,115,015**	**1,249.1**
Compared to Project			**-41.0%**	**-41.1%**
Alternative 10 Total (Peak)[7]			**1,209,963**	**1,355.4**
Project Total (Peak)			**1,967,515**	**2,204.1**
Compared to Project			**-38.5%**	**-38.5%**

NOTES:

1. Water demand rates supplied by the City of Los Angeles Bureau of Sanitation.
2. Assumes a water demand that reflects a weighted average of 60% retail and 40% restaurant - "full service indoor seat". For the restaurant use, assumes 3 seats per 100 square feet of floor area.
3. The Bureau of Sanitation's water use rate for hotel use is 130 gpd/room. As the hotel is likely to include banquet and related facilities, an additional 130 gpd/hotel room is assumed for the purposes of this analysis to provide a conservative estimate and to account for the additional water used by the banquet and related facilities. Therefore, the total hotel demand rate used in this analysis is 260 gpd/hotel room.
4. Amphitheater water demand based on the reduction of 3,021 seats at 4 GPD demand/seat.
5. Assumes 1 child per 100 feet of floor area.
6. Note not used.
7. Peak Flow Rate = 1.78*(Avg. Water Demand in MGD^0.92) per ASCE Sewer Design Manual.

Table 3: Wastewater Flow Rates Under Proposed Alternative 10

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Sewer Generation Rate[1] (GPD/1000 sq. ft.)	Wastewater Generation (MGD)[6]	Wastewater Generation (cfs)[6]
Studio	50,000	80	0.004	0.006
Studio Office	200,000	180	0.036	0.056
Child Care Center[5]	50 children	8/child	0.000	0.000
Office	0	180	0.000	0.000
Entertainment	0	180	0.000	0.000
Entertainment Retail[2]	0	408	0.000	0.000
Amphitheater[4]	0	N/A	0.000	0.000
Hotel[3]	500 rooms	260/room	0.130	0.201
Subtotal			*0.170*	*0.263*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Sewer Generation Rate[1] (GPD/1000 sq. ft.)	Wastewater Generation (MGD)[6]	Wastewater Generation (cfs)[6]
Studio	257,949	80	0.021	0.032
Studio Office	442,320	180	0.080	0.124
Office	495,406	180	0.089	0.138
Entertainment	337,895	180	0.061	0.094
Entertainment Retail[2]	39,216	408	0.016	0.025
Amphitheater[4]	(50,600)	N/A	(0.012)	(0.019)
Hotel[3]	500 rooms	260/room	0.130	0.201
Subtotal			*0.385*	*0.595*
Alternative 10 Total (Average)			**0.555**	**0.858**
Project Total (Average)			**0.896**	**1.387**
Compared to Project			**-38.1%**	**-38.1%**
Alternative 10 Total (Peak)[7]			**1.036**	**1.603**
Project Total (Peak)			**1.609**	**2.490**
Compared to Project			**-35.6%**	**-35.6%**

NOTES:

1. Sewer Generation Rates provided by City of Los Angeles Bureau of Sanitation.
2. Assumes a sewer generation that reflects a weighted average of 60% retail and 40% restaurant - "full service indoor seat". For the restaurant use, assumes 3 seats per 100 square feet of floor area.
3. The Bureau of Sanitation sewer generation rate for hotel use is 130 gpd/room. As the hotel is likely to include banquet and related facilities, an additional 130 gpd/hotel room is assumed for the purpose of this analysis to provide a conservative estimate and to account for the additional water used by the banquet and related facilities. Therefore, the total hotel demand rate used in this analysis is 260 gpd/hotel room.
4. Amphitheater sewer rate based on the reduction of 3,021 seats at 4 GPD demand/seat.
5. Assumes 1 child per 100 feet of floor area; net new demand = 400 gallons per day.
6. 1 cfs = 0.646272 MGD.
7. Peak Flow Rate = 1.78*(Avg. Flow Rate in MGD^0.92) per ASCE Sewer Design Manual.

Table 4: Wastewater Flow Rates Under Proposed Alternative 10 with No Annexation

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Sewer Generation Rate[1] (GPD/1000 sq. ft.)	Wastewater Generation (MGD)[6]	Wastewater Generation (cfs)[6]
Studio	50,000	80	0.004	0.006
Studio Office	450,000	180	0.081	0.126
Child Care Center[5]	50 children	8/child	0.000	0.000
Office	0	180	0.000	0.000
Entertainment	0	180	0.000	0.000
Entertainment Retail[2]	50,000	408	0.020	0.031
Amphitheater[4]	0	N/A	0.000	0.000
Hotel[3]	500 rooms	260/room	0.130	0.201
Subtotal			*0.235*	*0.364*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft.)	Sewer Generation Rate[1] (GPD/1000 sq. ft.)	Wastewater Generation (MGD)[6]	Wastewater Generation (cfs)[6]
Studio	257,949	80	0.021	0.032
Studio Office	192,320	180	0.035	0.054
Office	495,406	180	0.089	0.138
Entertainment	337,895	180	0.061	0.094
Entertainment Retail[2]	(10,784)	408	(0.004)	(0.006)
Amphitheater[4]	(50,600)	N/A	(0.012)	(0.019)
Hotel[3]	500 rooms	260/room	0.130	0.201
Subtotal			*0.320*	*0.494*
Alternative 10 Total (Average)			**0.555**	**0.858**
Project Total (Average)			**0.896**	**1.387**
Compared to Project			**-38.1%**	**-38.1%**
Alternative 10 Total (Peak)[7]			**1.036**	**1.603**
Project Total (Peak)			**1.609**	**2.490**
Compared to Project			**-35.6%**	**-35.6%**

NOTES:

1. Sewer Generation Rates provided by City of Los Angeles Bureau of Sanitation.
2. Assumes a sewer generation that reflects a weighted average of 60% retail and 40% restaurant - "full service indoor seat". For the restaurant use, assumes 3 seats per 100 square feet of floor area.
3. The Bureau of Sanitation sewer generation rate for hotel use is 130 gpd/room. As the hotel is likely to include banquet and related facilities, an additional 130 gpd/hotel room is assumed for the purpose of this analysis to provide a conservative estimate and to account for the additional water used by the banquet and related facilities. Therefore, the total hotel demand rate used in this analysis is 260 gpd/hotel room.
4. Amphitheater sewer rate based on the reduction of 3,021 seats at 4 GPD demand/seat.
5. Assumes 1 child per 100 feet of floor area; net new demand = 400 gallons per day.
6. 1 cfs = 0.646272 MGD.
7. Peak Flow Rate = 1.78*(Avg. Flow Rate in MGD^0.92) per ASCE Sewer Design Manual.

Table 5: Natural Gas Consumption Under Proposed Alternative 10

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms)		Natural Gas Consumption Rate[1] (cf/sf/Rooms per month)	Consumption (cf/month)
Studio	50,000	sf	2.0	100,000.0
Studio Office	200,000	sf	2.0	400,000.0
Child Care Center	5,000	sf	2.9	14,500.0
Office	0	sf	2.0	0.0
Entertainment	0	sf	2.9	0.0
Entertainment Retail	0	sf	2.9	0.0
Amphitheater	0	sf	2.0	0.0
Hotel[2]	500	rooms	4,320.0	2,160,000.0
Subtotal				*2,674,500.0*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms)		Natural Gas Consumption Rate[1] (cf/sf/Rooms per month)	Consumption (cf/month)
Studio	257,949	sf	2.0	515,898.0
Studio Office	442,320	sf	2.0	884,640.0
Office	495,406	sf	2.0	990,812.0
Entertainment	337,895	sf	2.9	979,895.5
Entertainment Retail	39,216	sf	2.9	113,726.4
Amphitheater	(50,600)	sf	2.0	(101,200.0)
Hotel[2]	500	rooms	4,320.0	2,160,000.0
Subtotal				*5,543,771.9*
Alternative 10 Total				**8,218,271.9**
Project Total				**17,384,563.4**
Compared to Project				**-52.7%**

NOTES:
1. Natural gas consumption rates based on SCAQMD CEQA Air Quality Handbook, Appendix 9, Table A9-12-A.
2. Assumes a 450,000 square foot hotel.

Table 6: Natural Gas Consumption Under Proposed Alternative 10 with No Annexation

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms)		Natural Gas Consumption Rate[1] (cf/sf/Rooms per month)	Consumption (cf/month)
Studio	50,000	sf	2.0	100,000.0
Studio Office	450,000	sf	2.0	900,000.0
Child Care Center	5,000	sf	2.9	14,500.0
Office	0	sf	2.0	0.0
Entertainment	0	sf	2.9	0.0
Entertainment Retail	50,000	sf	2.9	145,000.0
Amphitheater	0	sf	2.0	0.0
Hotel[2]	500	rooms	4,320.0	2,160,000.0
Subtotal				*3,319,500.0*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms)		Natural Gas Consumption Rate[1] (cf/sf/Rooms per month)	Consumption (cf/month)
Studio	257,949	sf	2.0	515,898.0
Studio Office	192,320	sf	2.0	384,640.0
Office	495,406	sf	2.0	990,812.0
Entertainment	337,895	sf	2.9	979,895.5
Entertainment Retail	(10,784)	sf	2.9	(31,273.6)
Amphitheater	(50,600)	sf	2.0	(101,200.0)
Hotel[2]	500	rooms	4,320.0	2,160,000.0
Subtotal				*4,898,771.9*
Alternative 10 Total				**8,218,271.9**
Project Total				**17,384,563.4**
Compared to Project				**-52.7%**

NOTES:

1. Natural gas consumption rates based on SCAQMD CEQA Air Quality Handbook, Appendix 9, Table A9-12-A.
2. Assumes a 450,000 square foot hotel.

Table 7: Electrical Consumption Under Proposed Alternative 10

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Room/ Unit)		Electricity Usage Rate[1] (kWh/sf/ Room/Unit per year)	Consumption (kWh/year)
Studio[2]	50,000	sf	36.63	1,831,500
Studio Office	200,000	sf	12.95	2,590,000
Child Care Center	5,000	sf	5.90	29,500
Office	0	sf	12.95	0
Entertainment[2]	0	sf	60.73	0
Entertainment Retail[3]	0	sf	27.11	0
Amphitheater[2]	0	sf	14.56	0
Hotel[4]	500	rooms	8,955.00	4,477,500
Alternative 10 Subtotal				*8,928,500*
Project Subtotal				*23,551,117*
Compared to Project				*-62.1%*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Room/ Unit)		Electricity Usage Rate[1] (kWh/sf/ Room/Unit per year)	Consumption (kWh/year)
Studio[2]	257,949	sf	36.63	9,448,672
Studio Office	442,320	sf	12.95	5,728,044
Office	495,406	sf	12.95	6,415,508
Entertainment[2]	337,895	sf	60.73	20,520,363
Entertainment Retail[3]	39,216	sf	27.11	1,063,146
Amphitheater[2]	(50,600)	sf	14.56	(736,736)
Hotel[4]	500	rooms	8,955.00	4,477,500
Alternative 10 Subtotal				*46,916,497*
Project Subtotal				*34,827,053*
Compared to Project				*34.7%*
Alternative 10 Total				**55,844,997**
Project Total				**58,378,170**
Compared to Project				**-4.3%**

NOTES:

1. Electricity usage rates based on CEQA Air Quality Handbook, Appendix 9, Table A9-11.
2. Electricity consumption rate for studio, entertainment and amphitheater based on historical consumption use on the existing property.
3. Electricity use from residential retail, community serving and entertainment retail reflect a weighted average of 60% retail and 40% restaurant.
4. Assumes a 450,000 square foot hotel.

Table 8: Electrical Consumption Under Proposed Alternative 10 with No Annexation

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Room/ Unit)		Electricity Usage Rate[1] (kWh/sf/ Room/Unit per year)	Consumption (kWh/year)
Studio[2]	50,000	sf	36.63	1,831,500
Studio Office	450,000	sf	12.95	5,827,500
Child Care Center	5,000	sf	5.90	29,500
Office	0	sf	12.95	0
Entertainment[2]	0	sf	60.73	0
Entertainment Retail[3]	50,000	sf	27.11	1,355,500
Amphitheater[2]	0	sf	14.56	0
Hotel[4]	500	rooms	8,955.00	4,477,500
Alternative 10 Subtotal				*13,521,500*
Project Subtotal				*23,824,073*
Compared to Project				*-43.2%*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Room/ Unit)		Electricity Usage Rate[1] (kWh/sf/ Room/Unit per year)	Consumption (kWh/year)
Studio[2]	257,949	sf	36.63	9,448,672
Studio Office	192,320	sf	12.95	2,490,544
Office	495,406	sf	12.95	6,415,508
Entertainment[2]	337,895	sf	60.73	20,520,363
Entertainment Retail[3]	(10,784)	sf	27.11	(292,354)
Amphitheater[2]	(50,600)	sf	14.56	(736,736)
Hotel[4]	500	rooms	8,955.00	4,477,500
Alternative 10 Subtotal				*42,323,497.00*
Project Subtotal				*34,554,097.00*
Compared to Project				*22.5%*
Alternative 10 Total				**55,844,997**
Project Total				**58,378,170**
Compared to Project				**-4.3%**

NOTES:

1. Electricity usage rates based on CEQA Air Quality Handbook, Appendix 9, Table A9-11.
2. Electricity consumption rate for studio, entertainment and amphitheater based on historical consumption use on the existing property.
3. Electricity use from residential retail, community serving and entertainment retail reflect a weighted average of 60% retail and 40% restaurant.
4. Assumes a 450,000 square foot hotel.

Table 9: Electrical Demand Under Proposed Alternative 10

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms/Units)		Electricity Usage Rate (VA/sf/Room/Unit)	Demand (kVA)
Studio	50,000	sf	7.2	360.0
Studio Office	200,000	sf	6.4	1,280.0
Child Care Center	5,000	sf	10.1	50.5
Office	0	sf	5.1	0.0
Entertainment	0	sf	9.1	0.0
Entertainment Retail	0	sf	11.3	0.0
Amphitheater	0	sf	12.7	0.0
Hotel[1]	500	rooms	4,320.0	2,160.0
Alternative 10 Subtotal				*3,850.5*
Project Subtotal				*17,338.1*
Compared to Project				*-77.8%*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms/Units)		Electricity Usage Rate (VA/sf/Room/Unit)	Demand (kVA)
Studio	257,949	sf	7.2	1,857.2
Studio Office	442,320	sf	6.4	2,830.8
Office	495,406	sf	5.1	2,526.6
Entertainment	337,895	sf	9.1	3,074.8
Entertainment Retail	39,216	sf	11.3	443.1
Amphitheater	(50,600)	sf	12.7	(642.6)
Hotel[1]	500	rooms	4,320.0	2,160.0
Alternative 10 Subtotal				*12,249.9*
Project Subtotal				*9,498.5*
Compared to Project				*29.0%*
Alternative 10 Total				**16,100.4**
Project Total				**26,836.6**
Compared to Project				**-40.0%**

NOTES:

1. Assumes a 450,000 square foot hotel

Table 10: Electrical Demand Under Proposed Alternative 10 with No Annexation

CITY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms/Units)		Electricity Usage Rate (VA/sf/Room/Unit)	Demand (kVA)
Studio	50,000	sf	7.2	360.0
Studio Office	450,000	sf	6.4	2,880.0
Child Care Center	5,000	sf	10.1	50.5
Office	0	sf	5.1	0.0
Entertainment	0	sf	9.1	0.0
Entertainment Retail	50,000	sf	11.3	565.0
Amphitheater	0	sf	12.7	0.0
Hotel[1]	500	rooms	4,320.0	2,160.0
Alternative 10 Subtotal				*6,015.5*
Project Subtotal				*11,492.6*
Compared to Project				*-47.7%*
COUNTY OF LOS ANGELES	Quantity (Net New Sq. Ft./ Rooms/Units)		Electricity Usage Rate (VA/sf/Room/Unit)	Demand (kVA)
Studio	257,949	sf	7.2	1,857.2
Studio Office	192,320	sf	6.4	1,230.8
Office	495,406	sf	5.1	2,526.6
Entertainment	337,895	sf	9.1	3,074.8
Entertainment Retail	(10,784)	sf	11.3	(121.9)
Amphitheater	(50,600)	sf	12.7	(642.6)
Hotel[1]	500	rooms	4,320.0	2,160.0
Alternative 10 Subtotal				*10,084.9*
Project Subtotal				*15,344.0*
Compared to Project				*-34.3%*
Alternative 10 Total				**16,100.4**
Project Total				**26,836.6**
Compared to Project				**-40.0%**

NOTES:
1. Assumes a 450,000 square foot hotel

INCLEDON CONSULTING GROUP
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FIGURE NO. 1 - PROPOSED ALTERNATIVE 10 MAJOR DOMESTIC WATER LINES
AUGUST 2012

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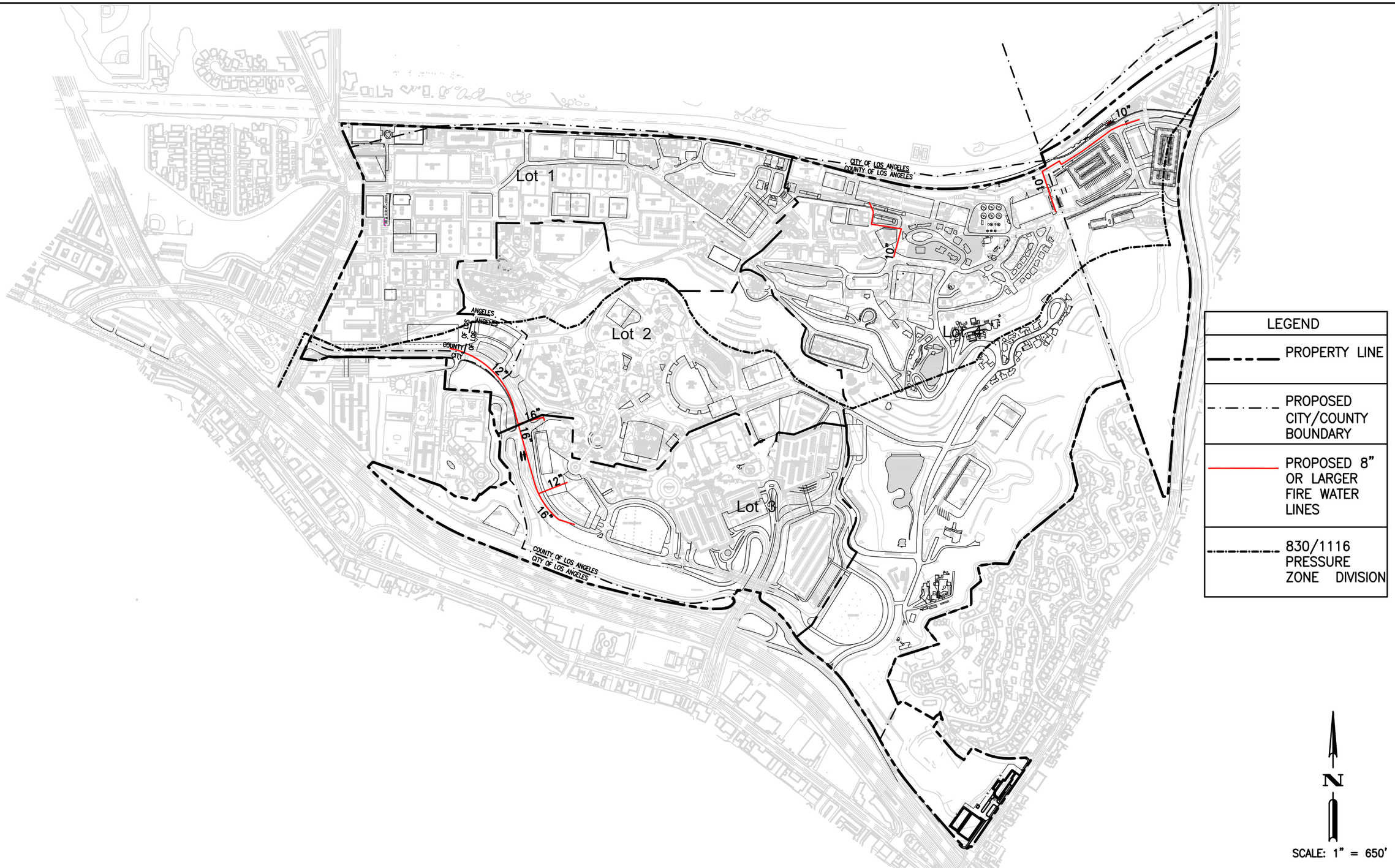

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FIGURE NO. 2 - PROPOSED ALTERNATIVE 10 MAJOR FIRE PROTECTION WATER LINES

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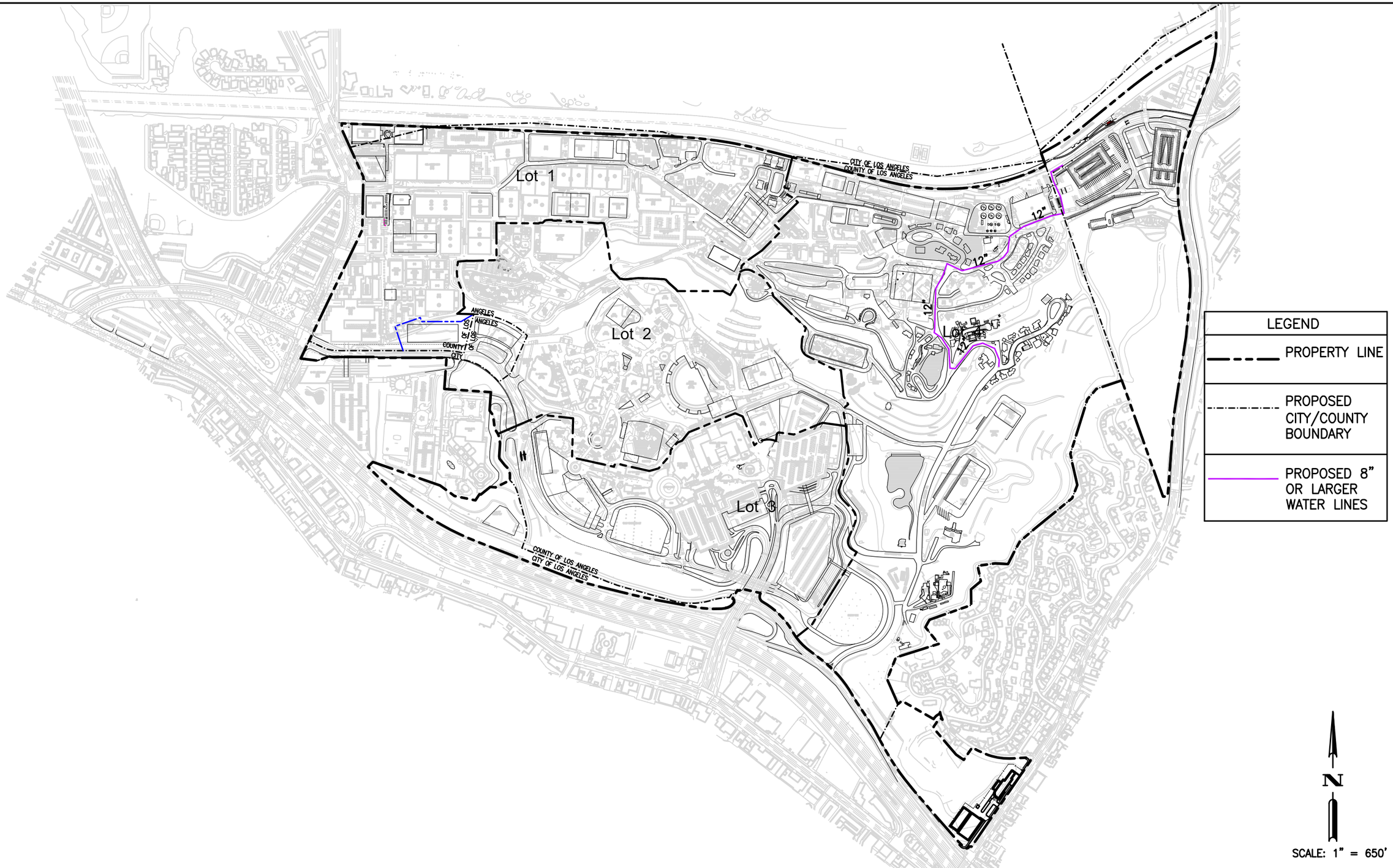

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FIGURE NO. 3 - PROPOSED ALTERNATIVE 10 MAJOR RECYCLED WATER LINES

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i:\237.004\CAD\SHEETS\TECH REPORT EXHIBITS\ALTERNATE 10\FIGURE 3 - PROPOSED RW LINES.dwg 8/24/12 18:10

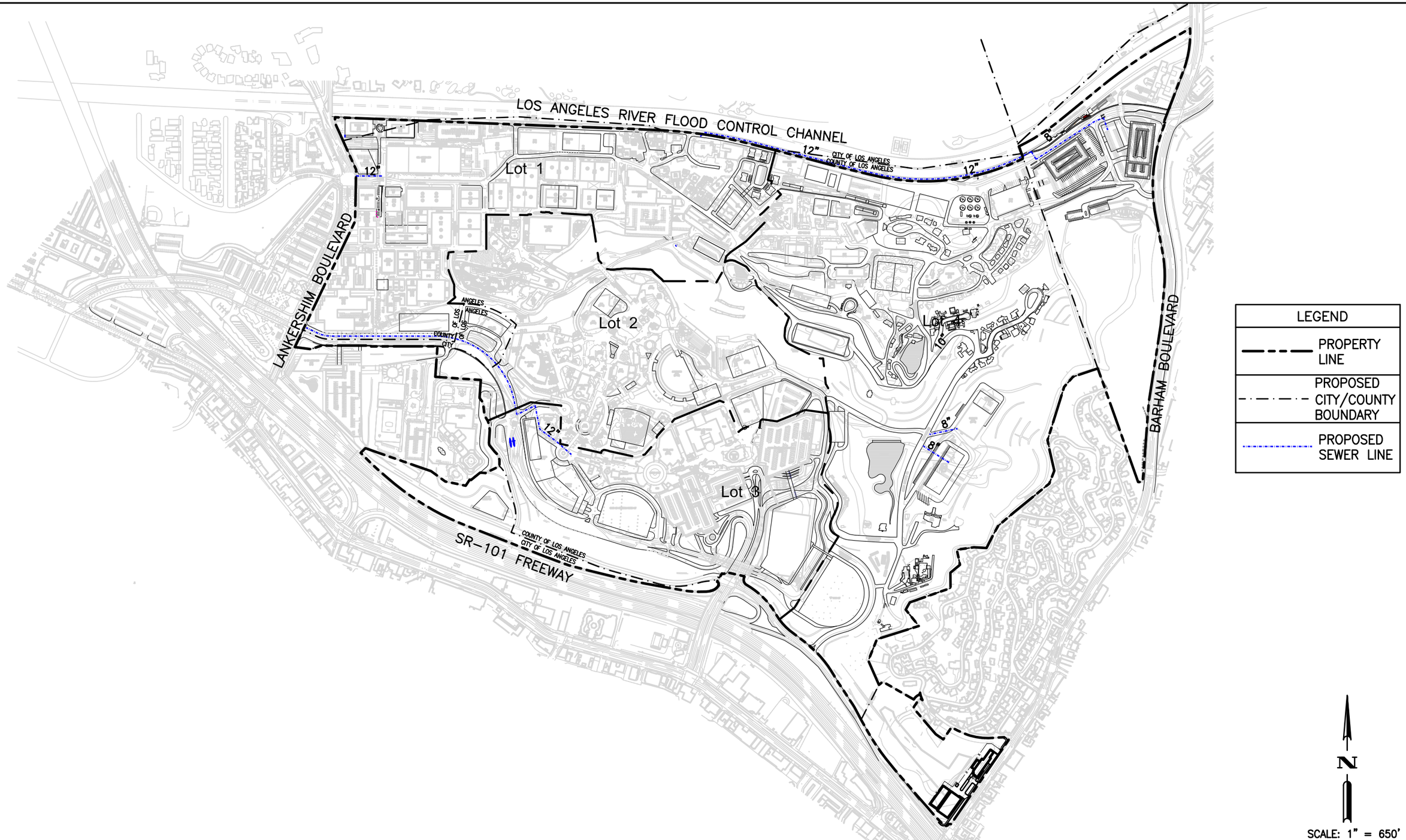

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FIGURE NO. 4 - ALTERNATIVE 10 MAJOR SANITARY SEWER LINES
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I:\237.004\CAD\SHEETS\TECH REPORT EXHIBITS\ALTERNATE 10\FIGURE 4 -PROPOSED SEWER.dwg 8/24/12 18:11

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FIGURE NO. 5 - PROPOSED ALTERNATIVE 10 ON-SITE MAJOR GAS LINES
AUGUST 2012

I:\237.004\CAD\SHEETS\TECH REPORT EXHIBITS\ALTERNATE 10\FIGURE 5 - PROPOSED GAS.dwg 8/24/12 18:12

Appendix FEIR-29

Alternative 10: No Residential Alternative
Environmental Safety

Technical Memorandum

To: *Universal City Studios LLC*

From: *CDM Smith*

Date: *August 21, 2012*

Subject: *NBC Universal Evolution Plan – Environmental Safety Analysis for Alternative 10 – No Residential Alternative*

This technical memorandum provides an analysis of potential environmental safety issues (hazardous materials and waste management, asbestos and lead-based paint, polychlorinated biphenyls (PCBs), closed on-site landfill and radio frequency) associated with Alternative 10: No Residential Alternative for comparison to existing conditions and the proposed Project at Universal Studies (the Project Site). The objective of this technical memorandum is to compare the potential environmental safety issues between Alternative 10 and the proposed Project, as well as between Alternative 10 and baseline conditions.

Description of Alternative 10: No Residential Alternative

The No Residential Alternative represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. The No Residential Alternative ("Alternative 10") would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the Project.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Figure 1 at the end of this memorandum provides an illustration of the Conceptual Site Plan for Alternative 10.

Environmental Safety Comparison

Alternative 10 would be developed across the entire 391-acre Project Site like the proposed Project, but at a significantly reduced level. Under this alternative, the proposed uses are similar to those set forth for the proposed Project, but the quantity of development that would occur within the Back Lot portion of the Project Site is significantly reduced. Although there would no longer be residential development in the Mixed-Use Residential Area, which would eliminate the proposed neighborhood retail and community-serving commercial uses, Alternative 10 would include additional studio office and entertainment uses, and additional hotel uses. Additional parking structures are also part of Alternative 10.

Significance Thresholds

Based on the factors in the *L.A. CEQA Thresholds Guide* (pages F.1-3 and F.2-3) for the determination of significance relative to risk of upset/emergency preparedness and human health hazards, the project would have a significant impact if:

- The project would expose people[1] to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

The significance threshold applies to the various issue areas analyzed under environmental safety (i.e., hazardous materials management, hazardous waste management, asbestos and lead-based paint, polychlorinated biphenyls, closed on-site landfill and radio frequency).

Hazardous Materials Management

Existing Conditions

Since approximately 1915, the Project Site has been in continuous operation as a motion picture studio. The theme park portion of the Project Site has been in operation since approximately 1964. Certain on-site activities, such as movie and television production, Universal Studios Hollywood (theme park) attractions, restaurant cleaning, grounds maintenance, and support for facilities

[1] For the purposes of this report, "people" refers to any person, such as workers, visitors and tenants, which would be at the Project Site.

operation (i.e., power generation and air conditioning), involve the acquisition, use, storage and disposal of hazardous materials on a regular basis that have the potential to create hazardous conditions and/or contamination at the Project Site.

Currently, a wide range of on-site activities may involve the use and storage of hazardous materials. These activities are conducted by the Applicant, as well as various tenants and other entities (i.e., third party vendors) that use on-site facilities on a temporary basis. Certain on-site activities, such as movie and television production, operation of the theme park, restaurant cleaning, grounds maintenance, and support for facilities operation (i.e., air conditioning), involve the acquisition, use, storage and disposal of hazardous materials on a regular basis. Generally, a majority of the hazardous materials usage and storage at the Project Site is associated with Studio Area and Entertainment Area operations, with lesser use and storage associated with operation of the Business Area.

Refer to the Environmental Safety Technical Report for the proposed NBC Universal Evolution Plan Project for the details regarding the existing on-site activities that may involve the use and storage of hazardous materials and what those hazardous materials consist of at the Project Site.

Project Impacts

Construction

As with the proposed Project, during on-site grading and building construction, fuel and oils associated with construction equipment, as well as coatings, paints, adhesives, and caustic or acidic cleaners, could be used, handled and stored on the Project Site. Similar to the proposed Project, construction of Alternative 10 could include the use, handling and storage of these materials which could increase the opportunity for hazardous materials releases and, subsequently, the exposure of people and the environment to hazardous materials. The Applicant has a Hazardous Materials Business Plan (HMBP), which includes a complete inventory of all hazardous materials used and stored at a site in quantities above associated regulatory thresholds and a program of employee training for hazardous materials releases. As is currently the Applicant's practice, compliance with all applicable federal, state and local requirements, such as through the HMBP, will effectively reduce the potential for the construction of Alternative 10 to expose people (i.e., workers, employees and visitors) to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

In addition, similar to the proposed Project, grading associated with Alternative 10 could uncover or disturb existing known and unknown underground storage tanks (USTs), which could lead to soil and/or groundwater impacts and the potential exposure of people and the environment to hazardous materials. If USTs or impacted soils are encountered, existing comprehensive policies and programs specifically related to environmental safety will continue to be implemented. For example, if USTs are encountered, prior to removal, applicable permits will be obtained from the Los Angeles County

Department of Public Work (LACDPW). During tank removals, construction contractors are required in their contract to continuously monitor excavations with an organic vapor analyzer in areas with potential for impacted soils. Soils that exhibit elevated readings, odor or visual evidence of contamination will be managed as required by appropriate regulatory agencies. These agencies could require that the soils be sampled for laboratory analysis, segregated and stored according to South Coast Air Quality Management Division (SCAQMD) regulations, and disposed of in accordance with California Title 22 requirements. Hence, compliance with existing permitting, notification, and worker safety regulations and programs will ensure construction worker safety at, or near, sites with potential contamination. Adherence to these guidelines would serve to effectively avoid worker exposure to hazardous materials that may be encountered on-site during construction activities.

In the event that contaminated soils are unexpectedly encountered, or construction occurs in areas of known contamination, the soils would be excavated, treated or disposed of to the satisfaction of the applicable regulatory agencies, which could include the Los Angeles Fire Department (LAFD), LACDPW, Los Angeles Regional Water Quality Control Board (LARWQCB), and/or California Environmental Protection Agency Department of Toxic Substance Control (DTSC).

Based on the above, similar to the proposed Project, there is the potential for on-site grading associated with Alternative 10 to increase the use, handling and storage of hazardous materials, and encounter contaminated soil; however, compliance with existing regulations and plans at the Project Site during construction would prevent exposure of people to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. In addition, with implementation of mitigation specific to the potential discovery of contaminated soil during construction excavation and grading activities, potential hazardous materials impacts during construction would be minimized further. Therefore, no significant impact is anticipated.

As with the proposed Project, construction of Alternative 10 could temporarily interfere with local and on-site emergency response. Local streets adjacent to the Project Site would be used for construction traffic; however, construction traffic would conform to all traffic work plan and access standards to allow adequate emergency access. Construction within the Business, Entertainment, and Studio Areas would be intermittent. Implementation of traffic work plans and access standards would reduce the potential for the impacts on emergency response during construction of Alternative 10. Therefore, similar to the proposed Project, construction of Alternative 10 is not anticipated to significantly impair implementation of or physically interfere with any adopted or on-site emergency response or evacuation plans or a local, state, or federal agency's emergency evacuation plan.

Operation

Similar to the proposed Project, the expansion of the Applicant's operations has the potential to increase the acquisition, use, handling and storage of hazardous materials on-site. Alternative 10

includes an increase in studio office and entertainment uses, as well as additional hotel uses. Should those uses involve activities associated with the storage of hazardous materials in USTs or aboveground storage tanks (ASTs), it is possible that the quantity of hazardous materials being used could increase. New users of hazardous materials, if any, would likely be located within the Entertainment Area. Many of the proposed operations are similar to those operations occurring presently on-site and would most likely not involve the use of large quantities of substantially different types of materials (i.e., fuels, paints, lubricants, etc.) than those which currently exist. Expansion of Entertainment uses could include the development of new attractions and thus increase the use of materials such as solvents, hydraulic oils and cleaning products, and possibly explosives if new attractions include pyrotechnics, and could increase tram tour operations and hence the use of materials such as fuels, greases, paints, solvents and cleaning solutions. Expansion of Hotel and Office uses could increase the use of fuels, compressed carbon dioxide, refrigerants, cleaning products and liquid hypochlorite needed for operations.

Hazardous materials stored and used on-site by the Applicant, are currently under the jurisdiction of the Los Angeles County Fire Department (LACoFD), by agreement with the LAFD. The Applicant's existing hazardous materials management system (HMBP, hazardous materials inventory, and hazard communication program), which includes on-site tenants, and third-party vendors, must be maintained and updated annually by the Applicant, as necessary, to include any additional hazardous materials requiring use, handling, storage or disposal under either the proposed Project or Alternative 10, and must be submitted to the LACoFD, and/or the LAFD, as applicable, for review. As is currently the Applicant's practice, all hazardous materials on the Project Site will be acquired, handled, used, stored, and disposed of in accordance with all applicable federal, state and local requirements. Monitoring of the Applicant's hazardous materials management will be conducted by the LACoFD and/or the LAFD, and other applicable regulatory authorities, as appropriate.

As with the proposed Project, operation of Alternative 10 could increase the opportunity for hazardous materials releases and, subsequently, the exposure of people and the environment to hazardous materials. The Applicant has in-house staff trained and designated to respond to accidental releases of hazardous materials associated with the acquisition, use, storage and handling of hazardous materials. Also, the Applicant has professional hazardous materials response companies on-call should a release occur at a time when appropriate staff are not available or the magnitude of the release is such that it cannot be handled internally. Therefore, compliance with all applicable existing regulations and plans at the Project Site would prevent exposure of people to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards, and no significant impact is anticipated.

With continued implementation of hazardous materials management at the Project Site (by the Applicant and its tenants and third-party vendors), in accordance with all applicable local, state and federal laws and regulations relating to environmental protection and the management of hazardous

materials, similar to the proposed Project, operation of Alternative 10 is expected to be consistent with the goals, policies, and objectives of the City and County General Plan Safety Elements.

In addition, as with the proposed Project, existing emergency response and evacuation plans would be updated or new plans created, as appropriate, to include operation of Alternative 10; therefore, it is not anticipated that operation of Alternative 10 would significantly impair implementation of or physically interfere with any adopted or on-site emergency response or evacuation plans or a local, state, or federal agency's emergency evacuation plan. No adverse impacts to emergency response or emergency evacuation plans are anticipated.

Mitigation Measures

As noted above, compliance with all applicable laws, rules and regulations (also known as plans programs and policies) associated with hazardous materials management during design, construction and operation will minimize impacts to human health and the environment from either the proposed Project or Alternative 10. Following are the existing plans, programs and policies that address potential impacts from implementation of either the proposed Project or Alternative 10 due to the use, storage, and creation of hazardous materials:

> For development in the Business, Entertainment, and/or Studio Areas, within 30-days of any change in the facility's use, handling and storage of hazardous substances at quantities that require notification pursuant to applicable regulations, the Applicant or its successor shall notify the Certified Unified Program Agency for the site (i.e., the Los Angeles County Fire Department).

Aspects of the proposed Project and Alternative 10 that are specifically intended and designed to avoid or reduce impacts related to hazards materials management and emergency response - Project Design Features (i.e., PDF) – include the following:

PDF-HAZ-1 The Applicant or its successor shall implement a soil management plan approved by the Department of Toxic Substances Control (DTSC), pursuant to DTSC's Voluntary Cleanup Program, or other applicable state or local regulatory agency providing oversight, to address potential contamination in soil in the Mixed-Use Residential Area. The approved soil management plan shall include procedures for soil sampling and remedial options that may include removal (excavation), treatment (in-situ or ex-situ), or other measures, as appropriate.

PDF-HAZ-2 For development in the Business, Entertainment, and/or Studio Areas, the Applicant or its successor shall submit to the Los Angeles County Fire Department, City of Los Angeles Fire Department, and Los Angeles County Department of Public Works, as applicable, an updated emergency response and/or evacuation plan, as appropriate,

to include operation of the new development. The emergency response plan shall include, but not be limited to the following: mapping of evacuation routes for vehicle and pedestrians, location of nearest hospital, and fire departments.

In addition, the following mitigation measure (i.e., MM) would further minimize potential hazardous materials impacts during construction of either the proposed Project or Alternative 10:

MM-HAZ-1 If soil contamination is suspected to be present, prior to excavation and grading, the South Coast Air Quality Management District's (SCAQMD's) Rule 1166 shall be implemented, as appropriate. If soil contamination is not suspected, but is observed (i.e., by sight, smell, visual, etc.) by a qualified professional during excavation and grading activities, excavation and grading within such an area shall be temporarily halted and redirected around the area until the appropriate evaluation and follow-up measures are implemented, as contained in SCAQMD's Rule 1166, so as to render the area suitable for grading activities to resume. The contaminated soil discovered shall be evaluated and excavated/disposed of, treated in-situ (in-place), or otherwise managed in accordance with Rule 1166 and any other applicable regulatory requirements.

Hazardous Waste Management

Existing Conditions

Uses associated with the Project Site are known to generate hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). The Applicant is a large-quantity RCRA generator.[2] The Applicant performs hazardous waste management for the entire Project Site (all tenants and third party vendors). The Applicant generates RCRA, Non-RCRA and universal wastes. The vast majority of the hazardous waste generated by the Applicant is produced by the workshops in Building 4250 located in the Studio Area, and the Tram Maintenance Garage and CityWalk portions of the Entertainment Area operations. The Applicant does not store hazardous wastes for more than 90 days but accumulates hazardous waste in Building 4250 prior to ultimate disposal by licensed contractors. Most operational hazardous wastes generated by the Applicant's uses on the Project Site are accumulated at the site of generation and then transferred, by staff with appropriate training, from satellite locations to Building 4250. Hazardous waste is disposed of off-site. Typical operational hazardous wastes currently generated by the Applicant are managed at licensed waste treatment, disposal or recycling facilities that are permitted to receive the applicable waste (none of these facilities are located in the City or County). Several hazardous waste streams are collected and

[2] *The Environmental Safety Technical Report for the proposed NBC Universal Evolution Plan Project indicated that there were two large-quantity RCRA generators located on the Project Site - the Applicant and a tenant (Technicolor) located at the northern most corner of the Business Area. Since the preparation of the technical report, Technicolor is no longer a tenant and is no longer operating at the Project Site.*

transported as bulk liquids, including the waste sludges collected from Building 4250 and Tram Maintenance Garage three-stage clarifiers, which are collected and transported by licensed hazardous waste haulers to appropriate facilities for recycling or disposal. Most of the hazardous wastes generated by the Applicant are transported to resource recovery facilities where the energy content of the waste is recovered for beneficial uses; therefore, landfill capacities are not a limiting factor.

Project Impacts

Construction

During on-site grading and building construction, hazardous materials, such as fuels, paints, solvents, concrete additives and the like, could be used and therefore require proper management and, in some cases, disposal. The management of any resultant hazardous wastes could increase the opportunity for hazardous materials releases and, subsequently, the exposure of people and the environment to hazardous materials. As with the proposed Project, the construction of Alternative 10 would be performed on-site in compliance with all applicable federal, state and local requirements concerning the handling, storage and disposal of hazardous waste; therefore, similar with the proposed Project, compliance with regulations and requirements will effectively reduce the potential for the construction of Alternative 10 to expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant impact is anticipated.

Operation

Similar to the proposed Project, with implementation of Alternative 10, hazardous waste generating activities could increase. However, continued implementation of the source reduction measures being developed by the Applicant under the Hazardous Waste Source Reduction and Management Review Act (i.e., Senate Bill [SB] 14) are anticipated to reduce the generation of the major typical/operational hazardous waste streams. As with the proposed Project, although there would be additional development associated with Alternative 10, it is projected that there would be no substantial increase in operational hazardous waste generation with implementation of source reduction measures. The Applicant must comply, and require its tenants and third-party vendors to comply, with the applicable requirements of SB 14 pertaining to hazardous waste source reduction. Due to the implementation of existing hazardous waste reduction efforts on-site, and the fact that the majority of typical/operational hazardous waste is conveyed to licensed treatment, disposal and resource recovery facilities, similar to the proposed Project, it is not anticipated that Alternative 10 would result in a significant increase in demand for hazardous waste landfill capacity.

Other potential environmental impacts related to the increased generation of hazardous waste are associated with potential releases of the materials. Hazardous waste releases may, if not mitigated, result in soil and/or groundwater impacts. Also, depending upon the type of material released, releases may result in potential injury if exposure takes place. The Applicant and any other owner,

tenant or third-party vendor with facilities or activities that must comply with the provisions of RCRA, Hazardous Waste Control Law (HWCL), DTSC and Los Angeles County Department of Health Services (DHS) must maintain, and update/upgrade as necessary, hazardous waste storage facilities, manifests and records in compliance with the applicable requirements.

Currently, the Applicant is designated as a large-quantity generator under RCRA and implements the life cycle provisions of RCRA and the HWCL by maintaining the required inspection logs, manifests and records, which are subject to review by the DHS. In addition, the Applicant currently employs staff members trained to appropriate standards for the management of hazardous waste and the clean-up of releases and utilize licensed firms for transportation of hazardous waste. Similar to the proposed Project, it is anticipated that Alternative 10 would include the continued operation of the Project Site under the provisions of RCRA and the HWCL and that the required records, training, and licensed transport would continue to be required and maintained thus minimizing risks.

As is currently the Applicant's practice, as would extend through lease requirements to tenants at the Project Site and contracts with third-party vendors, compliance with all applicable federal, state and local requirements concerning the handling, storage and disposal of hazardous waste will effectively reduce the potential for the operation of either the proposed Project or Alternative 10 to expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Such compliance with applicable regulations related to the handling, storage and disposal of hazardous waste would be particularly effective relative to proposed non-residential uses, which have a higher likelihood of involving notable amounts and types of hazardous materials/wastes than that of residential uses. Based on the above, no significant impact is anticipated.

Mitigation Measures

Compliance with all applicable laws, rules and regulations (also known as plans, programs and polices) associated with hazardous waste management during the design, construction and operation will minimize impacts to human health and the environment from either the proposed Project or Alternative 10; therefore, no impact is anticipated and no mitigation is required.

Following are the existing plans, programs and policies that address potential impacts from implementation of either the proposed Project or Alternative 10 due to the disposal of hazardous waste:

> The Applicant or its successor shall continue to implement, as required by Senate Bill 14 (Health and Safety Code Section 25244.12), a number of hazardous waste reduction measures to reduce typical/operational hazardous waste generated on-site. In addition, to the extent applicable, the Applicant or its successor shall continue to implement the hazardous waste management life cycle requirements of Resource

Conservation and Recovery Act and Hazardous Waste Control Law, including the maintenance of required inspection logs, manifests and other records, which are subject to review by the Department of Health Services. The Applicant or its successor shall also, to the extent applicable, continue to be subject to inspection of storage locations by the Department of Toxic Substances Control and the Certified Unified Program Agency (i.e., Los Angeles County Fire Department).

Asbestos-Containing Material (ACM)/Lead-Based Paint (LBP)

Existing Conditions

Due to the wide variety and ages of structures and equipment on the Project Site, asbestos and ACM are occasionally encountered during demolition and renovation activities, particularly in the Studio Area portion of the Project Site. Building materials that may contain asbestos include: floor tile, roof membrane, soundproofing, acoustic ceiling tile, insulation, joint compound, and exterior stucco. Asbestos is usually encountered in equipment in the form of gaskets and heat/electrical insulation. In addition, ACM could be present in the insulation for production light bulb wiring. As a result of federal regulations (i.e., Toxic Substances Control Act [TSCA]), the production, distribution and availability of construction materials containing friable asbestos and ACM in the United States has been significantly reduced; therefore, on-site construction and/or renovation includes use of commercially sold construction materials that are not expected to increase the occurrence of asbestos or ACM at the Project Site. Moreover, per the federal NESHAP regulations and SCAQMD Rule 1403, renovation/replacement of structures will conform to applicable permitting, notification and worker safety requirements for the removal of ACM from these structures. In addition, the Applicant has developed an Asbestos Management Plan (AMP) to provide employees and contractors with the techniques and systems necessary to minimize the potential for release of ACM, as well as outline the actions to be taken in the event of accidental disturbance to ACMs, as well as procedures to deal with asbestos-related emergencies. The Applicant also complies with DTSC handling, packaging, transportation and disposal requirements. Asbestos/ACM from the Project Site is currently landfilled at Class III facilities as required by state law.

As with asbestos/ACM, due to the wide variety and ages of structures and equipment on the Project Site, LBP is also occasionally encountered during demolition and renovation activities, particularly in the Studio Area portion of the Project Site. LBP has been identified associated with (but not limited to) several types of building materials and surfaces, including: beams, ceilings, walls, windows, doors, floors, handrails, ceramic glazed tiles (particularly in restrooms on-site), and painted curbs and parking strips. The federal government banned LBP from housing in 1978. In addition, as with asbestos and ACM, on-site construction and/or renovation includes use of commercially sold construction materials that are not expected to increase the occurrence of LBP at the Project Site. The Applicant complies with all applicable handling, packaging, transportation and disposal requirements. In association with LBP practices and controls at the Project Site, waste materials generated from LBP

are tested prior to disposal. Although all LBP debris is assumed hazardous until properly tested, to date, sample results have shown that LBP debris at the site has been at non-hazardous levels. Non-hazardous material containing LBP is managed as construction debris. The Applicant maintains a Lead-Based Paint Management Plan that details responsibilities, LBP assessment procedures, work practices, training and record keeping associated with the handling of LBP debris at the Project Site. In addition, per the Respiratory Protection in Construction Standard, the Applicant has a specific respiratory protection program whenever employees are required or choose to wear respirators.

To date, the Applicant has surveyed all buildings and structures on the Project Site for asbestos/ACM and LBP.[3]

Project Impacts

Construction

Per federal regulations (i.e., TSCA), friable asbestos has been eliminated as a component in modern construction materials; therefore, new development on the Project Site is not expected to expose persons to friable asbestos. However, the Applicant has performed an asbestos survey of the Project Site and has indicated that encountering asbestos and ACM is probable in older structures that may be renovated or replaced as part of the implementation of either the proposed Project or Alternative 10. The possibility of encountering structures is higher within the Studio and Back Lot Areas of the Project Site where a majority of the older structures (which may contain asbestos) are located. Similar with the proposed Project, demolition/renovation activities undertaken during construction of Alternative 10 could generate asbestos-containing waste. Disposal of this waste would be undertaken in accordance with all applicable laws and regulations. In addition, renovation or replacement of asbestos-containing structures or equipment could potentially expose construction workers and/or employees to asbestos. Asbestos use and disposal are actively regulated. In accordance with the Applicant's AMP, construction projects at the site will continue to comply with federal Occupational Safety and Health Administration (OSHA), California Occupational Safety and Health Act (Cal/OSHA), National Emission Standards for Hazardous Air Pollutants (NESHAP), SCAQMD, and Connelly Warning Act requirements concerning permitting, notification, and worker safety. Asbestos abatement and disposal of asbestos and ACM-containing waste would be undertaken, as is currently the practice per the AMP, in compliance with all laws, and landfilled at Class III facilities. As with the proposed Project, handling and disposal of asbestos and ACM will be in accordance with all applicable laws and regulations, construction of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of

[3] *Due to the volume of information that is associated with the AMP and the asbestos and ACM/LBP surveys, this information is not part of the Draft EIR reference library but available for viewing during normal business hours at the Universal City Studios, Environment, Health & Safety Department, 100 Universal City Plaza, Building 5166, Universal City, CA 91608.*

regulatory standards. Therefore, no significant impact associated with asbestos and ACM is anticipated from construction of Alternative 10.

LBP has been eliminated as a component in modern materials; therefore, new development on the Project Site is not expected to expose persons to LBP. However, the Applicant has performed LBP surveys of the Project Site and has indicated that encountering LBP is probable in older structures that may be renovated or replaced as part of the implementation of either the proposed Project or Alternative 10. The possibility of encountering structures with LBP is higher within the Studio and Back Lot Areas of the Project Site where a majority of the older structures (which may contain LBP) are located. Similar with the proposed Project, demolition/renovation activities undertaken during construction of Alternative 10 could generate LBP-containing debris. Disposal of this waste would be undertaken in accordance with all applicable laws and regulations. In addition, renovation or replacement of LBP-containing structures or equipment could potentially expose construction workers and/or employees to LBP. The Applicant will continue to work to ensure compliance with all applicable rules and regulations regarding LBP worker safety, removal and disposal. Disposal of LBP-containing waste would be undertaken, as is currently the practice, in compliance with all laws, and landfilled, as applicable. As with the proposed Project, handling and disposal of LBP will be in accordance with all applicable laws and regulations, construction of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant impact associated with LBP is anticipated from construction of Alternative 10.

Operation

As mentioned above, as a result of federal regulations, production, distribution and availability of construction materials containing friable asbestos and ACM in the United States has been significantly reduced. Similar to the proposed Project, new on-site construction and/or renovation associated with Alternative 10 includes the use of commercially sold construction materials that are not expected to increase the occurrence of friable asbestos or ACM at the Project Site. Therefore, operation of the new development proposed at the Project Site is not expected to expose persons to friable asbestos. In addition, per applicable regulations (such as federal NESHAP regulations and SCAQMD Rule 1403), as with the proposed Project, new workers associated with Alternative 10 would be protected by worker safety requirements. The Applicant's AMP provides guidelines, work practices, procedures, and protocols for ongoing operations and maintenance activities conducted in proximity to ACM, as well as procedures to deal with asbestos-related emergencies. The AMP is updated as necessary (i.e., to comply with regulatory changes and update roles, responsibilities and contact information) to provide a safe working environment relative to ACMs for all occupants of the Applicant's facilities. Similar to the proposed Project, with the implementation of the AMP and existing laws and regulations, operation of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory

standards. Therefore, no significant impact associated with asbestos and ACM is anticipated from operation of Alternative 10.

As mentioned above, as a result of the government ban, LBP in the United States has been significantly reduced. Similar to the proposed Project, new on-site construction and/or renovation due to Alternative 10 would include use of commercially sold construction materials that are not expected to increase the occurrence of LBP at the Project Site. Therefore, operation of the new development proposed at the Project Site is not expected to expose persons to LBP. In addition, per applicable regulations (such as federal and state OSHA requirements), as with the proposed Project, new workers associated with Alternative 10 would be protected by worker safety requirements. Similar to the proposed Project, with existing laws and regulations, operation of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant impact associated with LBP is anticipated from operation of Alternative 10.

Mitigation Measures

Compliance with all applicable laws, rules and regulations (also known as plans, programs and policies) associated with hazardous materials management will minimize Alternative 10 impacts to human health and the environment from either the proposed Project or Alternative 10 ; therefore, no impact is anticipated and no mitigation is required.

Following are the existing plans, programs and policies that address potential impacts from implementation of either the proposed Project or Alternative 10 from the demolition or remodeling of structures with ACM and/or LBP:

> Prior to the issuance of any demolition permit or building permit for remodeling of existing buildings, the Applicant or its successor shall provide evidence to the City of Los Angeles or County of Los Angeles Department of Building and Safety, as applicable, that the demolition contract provides for a qualified asbestos abatement contractor/specialist to remove or otherwise abate or manage asbestos during demolition or renovation activities in accordance with all applicable federal, state and local regulations.
>
> Prior to the issuance of any demolition permit or building permit for remodeling of existing buildings, the Applicant or its successor shall provide evidence to the City of Los Angeles or County of Los Angeles Department of Building and Safety, as applicable, that the demolition contract provides for a qualified lead-based paint abatement contractor/specialist to remove or otherwise abate or manage lead-based paint during demolition or renovation activities in accordance with all applicable federal, state and local regulations.

Polychlorinated Biphenyls (PCB)

Existing Conditions

Most electrical transformers and oil-filled switches located on-site were replaced, or had the oil replaced, as part of a project which took place in 1985 to reduce PCBs. Older transformers and switches containing PCBs may still be encountered on the Project Site. All the transformers containing PCBs are below 50 parts per million (ppm) and most are below 5 ppm. Lighting ballasts are only replaced as needed. All lighting ballasts that are not clearly labeled as non-PCB are treated as PCB containing and are handled, stored and disposed of in accordance with applicable regulations. PCB-containing materials are assumed present on the Project Site and are generally associated with studio operations within the Studio Area. In accordance with TSCA, the Applicant currently uses only non-PCB containing electrical equipment in all new and replacement construction.

Project Impacts

Construction

Similar to the proposed Project, implementation of Alternative 10 could result in the generation of PCB wastes during demolition and renovation. All the existing PCB-containing transformers and oil-filled switches on-site are below 50 ppm and most are below the 5 ppm, which is the California-regulated concentration for hazardous waste. Older, unlabeled PCB-containing transformers, lighting ballasts and switching gear still exist on the property and, may-be encountered during demolition, renovation/replacement, or maintenance as a result of activities associated with construction of either the proposed Project or Alternative 10. In order to address potential impacts associated with PCB-containing equipment, the Applicant, its tenants and third-party vendors, as necessary, would implement the life-cycle management requirements of HWCL and TSCA, and any other PCB-related requirements of DTSC. These requirements include, but are not limited to, the maintenance of manifests of PCB-containing materials and waste stored on-site and the implementation of required handling, storage and disposal standards, practices and record keeping. Similar to the proposed Project, as disposal of PCB-containing waste would be undertaken in accordance with all applicable laws and regulations, construction of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant impact associated with PCBs is anticipated from construction of Alternative 10.

Operation

Due to the elimination of PCBs as a component of modern electrical facilities and fixtures, new development and the maintenance of electrical systems associated with that new development would not expose persons to PCBs. Available information indicates that PCB-containing materials on the Project Site are currently handled in accordance with TSCA and HWCL (see Hazardous Waste

Management discussion above). As the Applicant, on-site tenants and third-party vendors are expected to continue to comply with applicable laws in the future, operation of either the proposed Project or Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant human exposure to PCBs is anticipated from the operation of Alternative 10.

Mitigation Measures

Compliance with all applicable laws, rules and regulations (plans, programs and policies) associated with hazardous materials management will minimize impacts to human health and the environment from either the proposed Project or Alternative 10; therefore, no impact is anticipated and no mitigation is required.

Following are the existing plans, programs and policies that address potential impacts from implementation of either the proposed Project or Alternative 10 related to generation and disposal of PCB-containing material:

> Polychlorinated biphenyls (PCBs) may be encountered during demolition, renovation/replacement, or maintenance activities at the Project Site. The disposal of PCB wastes shall be in accordance with the life cycle provisions in the Toxic Substances Control Act (40 CFR 761), and the provisions in the Hazardous Waste Control Law, as administered by the Los Angeles County Fire Department under its Certified Unified Program Agency responsibilities under the Unified Program.

On-site Landfill

Existing Conditions

The landfill on the Project Site was originally a canyon. Filling of the canyon began in the late 1920s. The landfill was not open for public use. Based on anecdotal evidence, the landfill was initially used for depositing studio waste only, which was composed primarily of inert or slow-to-decompose material such as construction debris, quantities of prop discards made of mainly wood and plastic, and paper wastes. In later years restaurant waste from the theme park was also reportedly deposited. No hazardous or potentially hazardous materials are known to have been disposed of at the former landfill site. Landfill activities ended around 1980. A final soil cap cover consisting of about two to six feet of clean silty and clayey sand fill (earth fill) has been placed over the landfill area. Since the closure of the landfill, roads, asphalt pavement, and buildings have been developed over approximately 50 percent of the landfill surface area. Natural vegetation covers the remaining undeveloped slope surface of the landfill site (northern portion). Various methane control, mitigation, and monitoring systems at the Project Site occur within 1,000 feet of the landfill. The landfill is currently in compliance with applicable regulations and programs.

Project Impacts

Construction

Based on historical information and additional investigation, it was concluded no hazardous or potentially hazardous materials have been disposed of at the landfill. In addition, monitoring conducted during the Solid Waste Assessment Test (SWAT) indicated no leakage of hazardous materials into the unsaturated zone and landfill leachate. However, existing leakage patterns at the landfill could change over time as part of the normal process of degradation in the landfill or as a result of surface and/or drainage modifications resulting from Alternative 10. Therefore, similar to the proposed Project, development of Alternative 10 in proximity of the existing closed on-site landfill could potentially impact the current condition of the landfill, as well as potentially impact the development via gases emanating from the landfill. Potential leakage of certain materials from the landfill during construction activities could potentially expose people and the environment to hazardous materials.

Methane gas generation in a landfill is the result of the natural decay process that takes place within the landfill. In addition to the leakage of materials from the landfill, the migration of methane through soil may result in the build-up of gas in enclosed areas to a concentration that may potentially result in an explosion hazard, if not properly ventilated. At current levels and with existing methane migration, collection and detection systems, methane levels outside of the landfill footprint do not currently pose a hazard. In addition, as a condition for occupancy at a number of structures in the vicinity of the landfill area, existing soil gas monitoring probes are monitored on a quarterly basis. Based on the quarterly monitoring results, buildings are free from hazardous concentrations of landfill gas and can be safely occupied. The gas monitoring will continue until landfill gas no longer poses a potential threat to these structures. However, potential grading and surficial changes in the vicinity of the landfill could alter current conditions. Similar to the proposed Project, changes related to construction of Alternative 10 could affect the migration path or quantity of methane emanating from the landfill. However, if methane volume emanating from the landfill changes, the existing methane migration, collection and detection systems would make unlikely the potential for methane to build up in structures at the Project Site to potentially approach ignition levels.

The design and construction of development occurring within 1,000 feet of the closed on-site landfill would be required to comply with Section 110.3 of the Los Angeles County Building Code, which permits buildings or structures located within 1,000 feet of fills containing rubbish or other decomposable material if the fill is isolated by approved natural or artificial protective systems or if the buildings or structures are designed according to recommendations contained in a report prepared by a licensed civil engineer. As required by the Los Angeles County Code permit process, the proposed development within the 1,000 foot radius of the closed landfill would be designed and constructed according to the recommendations of a licensed civil engineer, and any methane mitigation recommendations shall be subject to the review and approval of the LACDPW. LACDPW

has established landfill gas protection requirements, which includes details on site investigations, landfill gas protection systems, gas monitoring systems and programs, as well as contingency plan requirements. The County of Los Angeles may accept alternate engineering controls and monitoring parameters on a case-by-case basis.

Additionally, pursuant to 27 California Code of Regulations (CCR), Section 21190, all development within 1,000 feet of the closed on-site landfill would adhere to California Integrated Waste Management Board (CIWMB) established regulations addressing postclosure land use activities. The Solid Waste Local Enforcement Agency (LEA) for the closed on-site landfill, the LACDPW, will ensure that postclosure land use activities specifically address compliance with 27 CCR, Section 21190 and be approved by the LEA, LARWQCB, and CIWMB, as appropriate.

Review of the Citywide Methane Ordinance Map (A-20960) indicates that the Project Site is approximately 4,000 feet at its closest point to any of the Methane or Methane Buffer Zones. However, Section 91.7108 states that if the City of Los Angeles' Department of Building and Safety determines that a hazard may exist from methane intrusion to an area outside of the defined boundaries, the City's Department of Building Safety and the LAFD may enforce any or all of the requirements of Division 71 of this code on the Project Site. Under Alternative 10, changes in existing jurisdictional boundaries would occur (i.e., annexation and detachment) but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site. Should buildings be built within the existing or annexed portions of the City, the City's Department of Building and Safety may require methane mitigation for structures in proximity to the closed landfill. The methane mitigation requirements of the City (as presented in Ordinance No 175,790) currently require a methane site assessment to establish the appropriate methane mitigation level for design of the building methane mitigation system. The assessment consists of collection of soil gas samples to evaluate the maximum detected methane concentration in soil gas. Based on the results, a site is classified as requiring either Level I, II, III, IV or V methane mitigation requirements. At a minimum, all new structures subject to the methane mitigation requirements are required to have a passive system (such as, gravel blanket and impervious membrane). In conclusion, as with the proposed Project, construction of Alternative 10 in the area of the closed landfill would be undertaken in accordance with all applicable laws and regulations, including LACDPW methane regulations for new construction and, if applicable, the City's Department of Building and Safety and LAFD methane requirements under Division 71 of the City's Municipal Code. However, construction still has the potential to expose people and the environment to potentially hazardous conditions (including explosive and toxic concentrations of landfill gas and leachate from the landfill), if encountered. With implementation of mitigation potential impacts would be less-than-significant. No significant exposure of people to substantial risk resulting from the release or explosion of a hazardous material is anticipated.

Operation

As with construction, the potential leakage of certain materials from the landfill during operation could occur and potentially expose people and the environment to hazardous materials. Also, the migration of methane through soil may result in the build-up of gas in enclosed areas of new development to a concentration which may potentially result in an explosion hazard, if not properly ventilated. Similar to the proposed Project, Alternative 10-related changes in the migration path or quantity of methane emanating from the landfill could cause methane build-up in structures which could potentially approach ignition levels, although the existing methane migration, collection and detection systems make this unlikely.

The Applicant will continue subslab, soil gas and air monitoring in the proximity of the closed on-site landfill as required by the LACDPW and the SCAQMD. If monitoring indicates that the landfill is causing potential impacts in excess of applicable standards, then appropriate remediation measures will be implemented by the Applicant per direction from the LARWQCB, the LACDPW and/or the SCAQMD.

In addition, as described above, development of buildings and structures located within 1,000 feet of the closed on-site landfill would be required to comply with Section 110.3 of the Los Angeles County Building Code, which includes a process by which LACDPW would establish landfill gas protection requirements (which may include details on site investigations, landfill gas protection systems, gas monitoring systems and programs, as well as contingency plan requirements).

As described above should the City's Department of Building and Safety determine that a hazard may exist from potential methane intrusion into structures constructed in the City in proximity to the closed landfill, the City's Department of Building and Safety may require methane mitigation for such structures.

In conclusion, operation of Alternative 10 would be undertaken in accordance with all applicable laws and regulations. Therefore, operation of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant impacts associated with the closed on-site landfill are anticipated from operation of Alternative 10.

Mitigation Measures

Compliance with all applicable laws, rules and regulations (plans, programs and policies) associated with the closed on-site landfill will minimize impacts to human health and the environment from either the proposed Project or Alternative 10.

Following are the existing plans, programs and policies that address potential impacts from implementation of either the proposed Project or Alternative 10 related to methane gas migration from the closed on-site landfill:

> The Project shall continue to comply with the applicable regulations and requirements related to the closed on-site landfill, as required by the South Coast Air Quality Management District (SCAQMD) and the Los Angeles County Department of Public Works (LACDPW), or the City of Los Angeles Department of Building and Safety.

Construction of all new development located within alluvium or non-engineered fill associated with the existing landfill footprint under the Project or Alternative 10 shall require the following mitigation measures:

MM-HAZ-2 As required by the Occupational Safety and Health Administration (OSHA), a Construction Worker Safety Plan shall be developed by each contractor working within the footprint of the landfill. The Construction Worker Safety Plan shall comply with OSHA Safety and Health Standards 29 CFR 1910.120, the California Code of Regulations, Title 8, General Industry Safety Orders, and U.S. OSHA. The Plan shall include requirements associated with potential exposure to landfill gases. In addition, construction personnel shall wear protective equipment and clothing and other safety equipment, as appropriate, in accordance with the Construction Worker Safety Plan and/or Project Site-specific safety plans, as applicable.

MM-HAZ-3 Construction of all new development within 1,000 feet of the landfill shall be designed and constructed to prevent gas migration into the buildings in accordance with recommendations of a licensed civil engineer. The recommendations shall be subject to the review and approval of the Los Angeles County Department of Public Works.

MM-HAZ-4 For areas of the Project Site in the City of Los Angeles, should the City's Department of Building and Safety determine that a hazard may exist from methane intrusion due to proximity to the closed on-site landfill, construction of new development within 1,000 feet of the closed on-site landfill shall comply with the requirements of the Citywide Methane Ordinance.

Operation of development within 1,000 feet of the landfill, or development constructed with methane safety systems, under the Project or Alternative 10 shall require the following mitigation measure:

MM-HAZ-5 During operation, monitoring of methane safety systems shall occur in accordance with County or City requirements, as applicable.

Radio Frequency (RF)

Existing Conditions

There are no known sources of significant RF energy currently present at the site. Currently, the existing antennas at the Project Site include receive-only (RO) satellite antennas and microwave point-to-point antennas. RO antennas do not transmit energy; therefore, operation of RO antennas does not present an RF safety concern. Typical microwave point-to-point antennas operate at a maximum power of 2 Watts, which does not represent an energy level that is a safety concern even for someone standing directly in front of the antenna. The Applicant currently has an RF Radiation Safety and Health Program, which includes RF safety training.

Project Impacts

Construction

As with the proposed Project, Alternative 10 could involve the construction and operation of satellite-uplink antenna systems and/or other wireless communication antennas (i.e., for two-way radio, fire, police and emergency service systems), including cellular systems. There are no known sources of significant RF energy currently at the site and, similar to the proposed Project, Alternative 10 does not involve removal of any existing antennas. As potential RF radiation is a result of energy from the operation of an antenna that transmits energy, as with the proposed Project, the construction of Alternative 10 in itself would not result in an RF safety hazard. Therefore, no impact associated with RF is anticipated from construction of Alternative 10.

Operation

Satellite-Uplink Antennas[4]

The proposed Project includes several types of satellite-uplink antennas (known as "reflector" antennas) which could also be included in Alternative 10. There are three basic antenna configurations being considered for installation:

- A 2.4-meter-diameter antenna with a maximum input power of 125 Watts
- An 8.0-meter-diameter with a maximum input power of 200 Watts
- A 9.0-meter-diameter with a maximum input power of 200 Watts

The primary safety and compliance issues to be considered when locating satellite-uplink antennas include the following two points:

[4] Satellite-uplink antennas transmit energy from the ground, or "uplink" to the satellite.

- If the maximum RF field level is less than the Federal Communications Commission's (FCC's) Maximum Permissible Exposure (MPE) limit for General Population/Uncontrolled exposure, the installation is compliant with the FCC Regulations, and there is no concern over anyone getting into the beam of the antenna.

- If the maximum RF field level exceeds the FCC's MPE limit for General Population/Uncontrolled exposure, the installation must be made in a way that prohibits anyone from getting into the beam of the antenna.

The highest RF safety hazard would be present in the beam of the smallest (2.4-meter-diameter) antenna. For the 2.4-meter-diameter antenna, the calculated average RF field levels within the main beam is approximately 200 percent of the FCC's MPE limits for General Population (Uncontrolled) exposure when the system is operated at full power. The maximum calculated field level is four times higher than the average, or eight times the FCC's MPE limits for General Population (Uncontrolled) exposure, which also exceeds the MPE limit for Occupational (Controlled) exposure. The calculated maximum RF field level in the main beam of the proposed 8.0-meter-diameter antenna slightly exceeds the MPE limit for General Population (Uncontrolled) exposure. The calculated maximum RF field level in the main beam for the 9.0-meter-diameter antenna (largest) is slightly below the MPE limit for General Population (Uncontrolled) exposure. Because of their size and design (i.e., mounted with the lip of the reflector at least 5 feet above ground level), the beam of the larger antennas (such as the 8.0-meter- and 9.0-meter-diameter antennas) is normally not accessible to the general population without using a ladder or other mechanical device.

It is not anticipated that the proposed satellite-uplink antennas would be located in areas of the Project Site where the general public would have access. With reflector antennas, such as the ones proposed, all of the energy is confined to a cylindrical beam. As the main safety consideration with the proposed types of antennas is at the area at the focal point of the antenna (the cylindrical beam area, or the area referred to as the "feed horn") where the energy is concentrated, the safety hazard would be limited to maintenance personnel. To perform maintenance on the antenna, the system would be shut off and locked out prior to maintenance activities. Therefore, the only time when energy would be outside the cylindrical beam would be if there was a leak in the waveguide transmission line.[5] A leak or breaks at junction points could potentially cause a significant RF safety hazard, particularly an eye hazard, for a distance up to about 3 feet from the leak point. Beyond the 3-foot area, no hazards would exist since the energy from the leak site would spread out and decrease rapidly with distance. Engineering controls will be included and safety procedures implemented that will address the

[5] Waveguide is a form of RF "plumbing" used to conduct microwave frequency energy inside small rectangular or circular pipes made of copper. Breaks at junction points can become eye hazards for a distance up to about 3 feet from the leak point.

discovery of a leak in the waveguide transmission line such that the potential RF safety hazard to maintenance personnel would be less than significant.

In addition, the 2.4-meter-diameter antennas present a potential significant safety hazard to personnel as the calculated RF field levels are too high to allow anyone other than a worker trained in RF safety to get within the beam of the antenna.

Wireless Services Antennas

Wireless services antennas are used for a broad variety of wireless services—cellular; PCS; paging; fire, police, and emergency services; and two-way radio. The antennas are either omnidirectional or they are directional. Omnidirectional antennas (commonly referred to as whip antennas), radiate equally over 360 degrees but have very little energy (only about 10 percent) directed upward or downward. Exposure concerns are limited to people who are within 20 feet of the antenna and at the same elevation. For example, if the bottom of the antenna is as little as 2 feet above your head, the average RF field level that you would be exposed to would still be below the FCC's MPE General Population (Uncontrolled) exposure. Directional antennas (commonly referred to as sector antennas) do not have significant amounts of energy directed above or below the antenna and there is virtually no energy to the sides or behind these antennas. Since the energy is directed over less than 360 degrees, the safe zone extends out further than with omnidirectional (whip) antennas. The most common directional (sector) antennas cover either 120-degree or 90-degree beams. Virtually all the energy for sector antennas is in the forward region/direction, with very little energy downward (typically at an angle of 4 degrees). Exposure concerns for sector antennas extend out to about 50 feet at the same elevation.

Although the Applicant would continue to comply with applicable laws regarding the operation of RF transmission equipment, should this equipment be used under Alternative 10, similar to the proposed Project, there is the potential to expose people (specifically maintenance personnel) to a RF hazard. With regulatory compliance and proposed mitigation, the potential RF hazard would not result in a substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant human exposure to RF energy or radiation is anticipated from the operation of Alternative 10.

Mitigation Measures

Compliance with all applicable laws, rules and regulations associated with installation and operation of the satellite-uplink antenna systems, including the updating (as necessary) of the existing RF Radiation Safety and Health Program for the Project Site, will minimize impacts to human safety and health from either the proposed Project or Alternative 10. In addition, the following mitigation measures address potential impacts from implementation of either the proposed Project or Alternative 10 related to potential RF hazard:

MM-HAZ-6 The Applicant or its successor shall locate and operate satellite-uplink antennas with an absolute minimum of 1 foot of separation between the eye level and all waveguide connections, waveguide components, and flexible waveguide. Exposure within 1 to 3 feet from waveguide shall be limited to less than one minute.

MM-HAZ-7 The Applicant or its successor shall develop and use a simple lockout, tagout procedure prior to the maintenance activities of satellite-uplink antennas (i.e., reflector antennas) to ensure that the high-power amplifiers cannot be energized while anyone is working on an antenna.

MM-HAZ-8 If a 2.4-meter-diameter antenna is installed so that the bottom lip of the antenna is less than 7 feet above ground, the Applicant or its successor shall install a barrier, such as a chain and stanchion barrier to be added in front on the antenna, to prevent access to the area directly in front of the antenna. As appropriate, the width of the restricted access area shall be 10 feet wide, to ensure that no access to the area is possible by leaning over the chain. The distance in front of the antenna shall be determined based on the minimum elevation angle and height of the bottom lip of the antenna above the ground. The bottom lip of the antenna shall be a minimum of 7 feet above ground level at the chain. In addition, a warning/notice sign shall be hung on each side of the enclosure.

As an alternative, 2.4-meter-diameter antenna(s) shall be mounted on a platform, with a chain and warning/notice sign on the platform stairs. The bottom lip of the antenna shall be a minimum of 7 feet above ground level.

MM-HAZ-9 The Applicant or its successor shall restrict access to the beam of the 2.4-meter-diameter antenna(s) only to workers trained in Radio Frequency safety.

MM-HAZ-10 Prior to operation of new antennas on the Project Site, the Applicant's existing Radio Frequency (RF) Radiation Safety and Health Program shall be updated and additional training given to maintenance personnel, as appropriate.

With implementation of the location specific antenna placement/configuration and access restriction mitigation measures, no significant RF safety hazard is anticipated from the operation of satellite-uplink antenna systems.

Summary of Potential Environmental Safety Impacts

In summary, construction and operation associated with Alternative 10, and in particular the proposed expansion of the Entertainment Area, could involve an increase in the use, handling and storage and disposal of hazardous materials at the Project Site; therefore, Alternative 10 could

increase the opportunity for hazardous materials releases and, subsequently, the exposure of people and the environment to hazardous materials. In addition, demolition/renovation activities undertaken during construction of Alternative 10 could generate asbestos/ ACM, LBP and PCB waste. However, new construction and/or renovation includes the use of commercially sold materials that are not expected to increase the occurrence of asbestos/ACM, LBP and/or PCBs at the Project Site. Even with the potential for an increase in hazardous materials use, handling, storage, and disposal associated with expansion of the Entertainment Area, compliance with all applicable laws, rules and regulations (also known as plans programs and policies) and project design features will effectively reduce the potential for the construction and operation of Alternative 10 to expose people (i.e., workers, employees and park attendees) to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

In addition, grading associated with Alternative 10 could uncover or disturb existing known and unknown USTs, which could lead to soil and/or groundwater impacts and the potential exposure of people and the environment to hazardous materials. If USTs or impacted soils are encountered, existing comprehensive policies and programs and project design features specifically related to environmental safety will continue to be implemented; hence, compliance with existing permitting, notification, and worker safety regulations and programs will ensure construction worker safety at, or near, sites with potential contamination. Adherence to these guidelines would serve to effectively avoid worker exposure to hazardous materials that may be encountered on-site during construction activities; thereby preventing exposure of people to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. In addition, with implementation of mitigation specific to the potential discovery of contaminated soil during construction excavation and grading activities, potential hazardous materials impacts during construction would be minimized further. Therefore, no significant impact is anticipated.

Construction of Alternative 10 could temporarily interfere with local and on-site emergency response. Local streets adjacent to the Project Site would be used for construction traffic; however, construction traffic would conform to all traffic work plan and access standards to allow adequate emergency access. For operation, existing emergency response and evacuation plans would be updated or new plans created, as appropriate, to include operation of Alternative 10. Therefore, construction and operation of Alternative 10 is not anticipated to significantly impair implementation of or physically interfere with any adopted or on-site emergency response or evacuation plans or a local, state, or federal agency's emergency evacuation plan.

Construction and operation of Alternative 10 could include the potential leakage of certain materials from the landfill which could potentially expose people and the environment to hazardous materials. Also, the migration of methane through soil may result in the build-up of gas in enclosed areas of new development to a concentration which may potentially result in an explosion hazard, if not properly ventilated. The Applicant will continue subslab, soil gas and air monitoring in the proximity of the

closed on-site landfill as required by the LACDPW and the SCAQMD. In addition, compliance with existing plans, programs and policies, all applicable laws, rules and regulations, and mitigation measures associated with construction and operation of development over or within 1,000 feet of the landfill will minimize impacts to human health and the environment. Therefore, construction and operation of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, potential impacts associated with the closed on-site landfill are anticipated to be less than significant for Alternative 10.

Alternative 10 could also involve the construction and operation of satellite-uplink antenna systems and/or other wireless communication antennas (i.e., for two-way radio, fire, police and emergency service systems), including cellular systems that has the potential to expose people (specifically maintenance personnel) to a RF hazard. With regulatory compliance and proposed mitigation, the potential RF hazard would not result in a substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. Therefore, no significant human exposure to RF energy or radiation is anticipated from the operation of Alternative 10.

In conclusion, although Alternative 10 has the potential for an increase in the use, handling, storage, and disposal of hazardous materials associated with expansion of the Entertainment Area, the impacts associated would be less than significant. In addition, with compliance with all applicable laws, rules and regulations (plans, programs and policies), project design features and mitigation measures as detailed above, construction and operation of Alternative 10 would not result in a substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards related to asbestos/ACM, LBP, PCBs, on-site landfill and RF; therefore, the impacts associated with Alternative 10 would be less than significant. Alternative 10 would result in similar potential impacts as the proposed Project.

Unavoidable Adverse Impacts

As with the proposed Project, and discussed above, with implementation of existing regulatory requirements and proposed mitigation measures, the construction and operation of Alternative 10 would not expose people to substantial risk resulting from the release or explosion of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards. As such, significant adverse impacts would be avoided.

Annexation and Detachment

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving

commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site. Other jurisdictional boundary adjustments as provided for in Alternative 10 would be made with refinements to reflect the land use configurations associated with this alternative. Should annexation and detachment be approved, the appropriate lead agency's policies and procedures would remain and be applicable to the areas within the new City/County boundaries. As environmental safety issues are generally regulated on a federal, state and regional level, similar to the proposed Project, the potential impacts associated with the operation of Alternative 10 would not change if annexation/detachment does or does not occur.

Source: Rios Clementi Hale Studios (July 3, 2012)

N

CDM Smith

NBC Universal Evolution Plan
Alternative 10 Conceptual Plan

Figure 1

Appendix FEIR-30

Alternative 10: No Residential Alternative Employment, Housing, and Population

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AN ASSESSMENT OF THE EMPLOYMENT, HOUSING AND POPULATION IMPACTS OF ALTERNATIVE #10: NO RESIDENTIAL ALTERNATIVE FOR THE NBC UNIVERSAL EVOLUTION PLAN

Prepared for:
The Department of City Planning
City of Los Angeles

August 2012

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I. EXECUTIVE SUMMARY

A. OVERVIEW

This Report presents an assessment of the economic, employment, housing and population impacts of the Alternative 10: No Residential Alternative ("Alternative 10") for the NBC Universal Evolution Plan ("Project"). In summary, Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 additional guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail, Child Care and Hotel uses proposed under the Project.

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site. Other jurisdictional boundary adjustments as provided for in the Project would be made with refinements to reflect the land use configurations associated with this Alternative.

The assessment presented in this Report is intended to provide data and analysis for use in preparing a Final Environmental Impact Report (EIR) on the Project, pursuant to the California Environmental Quality Act (CEQA). This Report was prepared by HR&A Advisors, Inc., an economic development, real estate advisory, public policy and sustainability consultant.

The analysis presented in this Report relies on the same analysis techniques and data sources that were utilized in preparing the economic, employment, housing and population impacts of the proposed Project, as presented in the Project's Draft EIR, including Appendix P (Employment, Housing and Population Report). As in the Draft EIR, the quantitative analysis of potential impacts

is presented in terms of the Southeast San Fernando Valley and the City of Los Angeles Subregion. The Southeast San Fernando Valley corresponds to the City Community Plan areas of Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass, Van Nuys-North Sherman Oaks and North Hollywood-Valley Village. The City of Los Angeles Subregion is the geographic area defined by the Southern California Association of Governments (SCAG) that is relevant to the Project for regional planning purposes. It includes the City of Los Angeles, the City of San Fernando, several small unincorporated County "islands" and other small unincorporated areas (e.g., property that is owned by the federal or state government).

B. ECONOMIC AND EMPLOYMENT IMPACTS

Alternative 10 consists of the development of 2,677,186 net new square feet for entertainment, entertainment retail, film and television studio production facilities, studio-related and other office uses, and 1,000 hotel rooms and related hotel facilities, but no residential development.

Using the same land use-specific construction cost assumptions that were applied in the Draft EIR analysis of the Project, it is estimated that construction of the land uses in Alternative 10 would require a construction cost investment of $1.619 billion, or about half of the $3.041 billion cost for the Project. Using the same IMPLAN input-output modeling approach used for the Project, this scale of construction cost investment for Alternative 10 translates to about 18,551 part-time and full-time jobs in the Los Angeles County economy, of which 11,048 jobs are directly related to construction of Alternative 10 improvements. Total economic output impacts in the Los Angeles County economy from constructing Alternative 10 would be about $2.783 billion, compared with $5.239 billion for the Project (all in 2007 dollars).

Applying the same employment density factors used in the Draft EIR analysis of Project impacts, Alternative 10's net new floor area is estimated to accommodate 6,368 direct jobs, or about 1,175 (+22.6%) more on-site jobs than the proposed project. Unlike the proposed Project, there will not be any jobs associated with spending by households, or any jobs associated with neighborhood retail or community-serving uses. About two-thirds (66.2%) of the net new jobs in Alternative 10 will be associated with film, television and video related production and management activities. Entertainment and entertainment retail jobs represent one-fifth of net new jobs, and new hotel rooms represent about 13.3 percent of the total number of net new on-site jobs in this Alternative. Accordingly, the larger number of direct jobs, most of which are concentrated in high-multiplier entertainment industry jobs results in a total number of Alternative 10 jobs (11,769) that is only about three percent less than the number of total jobs (12,115) associated with the Project. Economic output generated in the Los Angeles County economy by annual operation of Alternative 10 would total about $1.900 billion, as compared with $1.928 billion from the Project.

In scale terms, Alternative 10's direct total of 6,368 jobs will account for about 3.06 percent of SCAG's employment forecast for the Southeast San Fernando Valley in 2030, and about 21.84 percent of employment growth between 2008 and 2030. These jobs also account for 0.28 percent of the jobs forecast for the City of Los Angeles Subregion in 2030, and about 2.04

percent of employment growth between 2008 and 2030. Because the Project does not exceed forecasted employment growth in the SCAG Subregion, it is consistent with the regional growth forecast, as was also the case for the Project.

Inasmuch as these employment and economic impacts are measured at the scale of the Los Angeles County economy, they are the same under any annexation or no-annexation scenarios.

Like the Project, Alternative 10 would help anchor the state's and region's entertainment and tourism sector in Los Angeles County for the foreseeable future. It would be consistent with all applicable growth forecasts and regional and local economic development and employment policies. Therefore, like the Project, Alternative 10's economic and employment effects are beneficial and not adverse within the meaning of CEQA, and no mitigation is required or recommended. Project employment plus a proxy measure of employment for "related projects" represent approximately14.3 percent of forecasted employment in the City of Los Angeles Subregion in 2030, which is the same percentage as the Project. Alternative 10's incremental employment effect, like the effect for the Project, is not "cumulatively considerable" within the meaning of CEQA, and its cumulative employment impact is therefore less than significant.

C. HOUSING IMPACTS

Alternative 10 does not include any residential development, and therefore it would not have any direct housing impacts. As with the Project, however, the residential location choices of net new employees under Alternative 10 could result in new indirect housing and households impacts.

Due to the employment patterns of construction workers in Southern California, and the operation of the market for construction labor, construction workers are not likely, to any significant degree, to relocate their households as a consequence of the job opportunities presented by Alternative 10. Thus, like the Project, there will not be any adverse housing impacts associated with construction of Alternative 10.

Using the same employee characteristics assumptions that were utilized in the Draft EIR analysis of the Project, it is estimated that employees associated with Alternative 10 would generate additional housing demand for about 382 units in the general housing market area surrounding the Project Site, as compared with 232 units of indirect housing demand for the Project. This difference is a function of Alternative 10's larger number of direct jobs, a different distribution of jobs by industry sector, and a different mix of employee preferences for home locations, as derived from the survey for existing Project Site employees used for analyzing the Project. As with the Project, the scale of Alternative 10's indirect housing impact falls within the applicable SCAG household forecasts for the Southeast San Fernando Valley and the City of Los Angeles Subregion.

However, unlike the Project, Alternative 10 would not assist the City (under the Project's annexation scenario), or the County and the City (with no annexation), in meeting its fair share of regional housing need, or assist the Subregion to achieve a better overall balance between jobs and housing, or provide new ownership housing opportunities.

In sum, the indirect housing impacts of Alternative 10 would not be adverse within the meaning of CEQA and no mitigation is required or recommended for Alternative 10 indirect housing impacts. The housing impacts of the Project, on the other hand, were considered not only not adverse, but beneficial, because the Project would help achieve the household growth targets for SCAG's City of Los Angeles Subregion.

Alternative 10's indirect housing demand plus the same proxy measure for households in "related projects" as was used in the Draft EIR analysis represent approximately 17.7 percent of forecasted households in the City of Los Angeles Subregion in 2030, as compared with 17.9 percent for the Project. Alternative 10's incremental housing effect, like the Project effect, is not "cumulatively considerable" within the meaning of CEQA, and its cumulative housing impact is therefore less than significant.

D. POPULATION IMPACTS

For the reasons described above with respect to housing, no adverse population impacts are predicted as a result of construction of Alternative 10, because construction workers are not expected to relocate their households as a consequence of working on Alternative 10.

Because Alternative 10 does not include any new housing, it would have no direct population impact. As discussed in the Draft EIR, research on the characteristics of existing Project Site employees indicates that few workers in the Project's non-residential uses are likely to relocate their households to a site closer to the Project as a direct result of taking a job there. Using an allowance for 382 units of employee-related housing demand, as discussed above, it is estimated that these units would result in an indirect population impact of 1,146 persons, as compared with the Project's indirect population impact of 696 persons.

In scale terms, this Alternative's total population impact of 1,146 persons is equal to about 0.27 percent of the 2030 population in SCAG's forecast for the Southeast San Fernando Valley and 4.31 percent of 2008-2030 population growth. This impact is also equal to about 0.03 percent of the City of Los Angeles Subregion population in 2030 (compared with 0.2% for the Project), and about 0.39 percent of 2008-2030 population growth (compared with 2.4% for the Project).

Alternative 10, including the proposed General Plan amendment and zone change, would not induce substantial population growth, because it would not exceed the population growth forecast for SCAG's City of Los Angeles Subregion. Therefore, Alternative 10, like the Project, would not have a significant adverse population impact within the meaning of CEQA. No mitigation for Project impacts is required or recommended.

Project population plus a proxy measure of population for "related projects" represent approximately 6.7 percent of forecasted population in the City of Los Angeles Subregion in 2030, as compared with 6.8 percent for the Project. Alternative 10's incremental population effect is not "cumulatively considerable" within the meaning of CEQA, and its cumulative population impact is therefore less than significant, as is the case for the Project.

II. PURPOSE AND SCOPE OF THE ANALYSIS

A. INTRODUCTION

This Report presents an assessment of the economic, employment, housing and population impacts of the Alternative 10: No Residential Alternative ("Alternative 10") for the NBC Universal Evolution Plan ("Project"). In summary, Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

The assessment presented in this Report is intended to provide data and analysis for use in preparing a Final Environmental Impact Report (EIR) on the Project, pursuant to the California Environmental Quality Act (CEQA). This Report was prepared by HR&A Advisors, Inc., an economic development, real estate advisory, public policy and sustainability consultant. A summary of HR&A Advisors' qualifications is included as Appendix C.

The analysis presented in this Report relies on the same analysis techniques and data sources that were utilized in preparing the economic, employment, housing and population impacts of the proposed Project, as presented in the Project's Draft EIR, including Appendix P (Employment, Housing and Population Report).

As in the Draft EIR, the quantitative analysis of potential impacts is presented in terms of the City of Los Angeles Subregion and the Southeast San Fernando Valley. The City of Los Angeles Subregion is the geographic area defined by the Southern California Association of Governments (SCAG) that is relevant to the Project for regional planning policy consistency evaluation purposes. It includes the City of Los Angeles, the City of San Fernando, several small unincorporated County "islands" and other small unincorporated areas (e.g., property that is owned by the federal or state government). The Southeast San Fernando Valley corresponds to the City Community Plan areas of Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass, Van Nuys-North Sherman Oaks and North Hollywood-Valley Village. Overall, the analysis for the Southeast San Fernando Valley area is provided for informational purposes, and the analysis for the City of Los Angeles Subregion serves as the basis for assessing the significance of any environmental impacts of Alternative 10.

B. DESCRIPTION OF ALTERNATIVE 10

Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the Project and increasing the studio production and entertainment elements of the Project. Alternative 10 would eliminate the proposed 2,937

residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 additional guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet).

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail, Child Care and Hotel uses proposed under the Project.

In addition, under Alternative 10, no permanent structures or parking facilities would be permitted within 100 feet of the portion of the eastern property boundary that abuts the Hollywood Manor (Blair Drive) community, although existing film set structures within the 100-foot-wide area would be permitted to remain and be maintained and rebuilt. The 100-foot-wide area would be maintained as a natural landscaped buffer. Alternative 10 also would not include the proposed North-South Road.

Figure II-1 provides an illustration of the conceptual site plan for Alternative 10.

Figure II-1
Alternative 10 Conceptual Plan

The following is a tabular comparison of the proposed net new square footage by land use under Alternative 10 and the proposed Project.

Table II-1
Project vs. Alterantive 10 Land Uses

Land Use	Net New Project Development	Net New Alternative 10 Development
Studio (sq. ft.)	307,949	307,949
Studio Office (sq. ft.)	437,326	642,320
Office (sq. ft.)	495,406	495,406
Entertainment (sq. ft.)	145,655	337,895
Entertainment Retail (sq. ft.)	39,216	39,216
Amphitheater (sq. ft.)	-50,600	-50,600
Hotel	450,000 [a]	900,000 [b]
Neighborhood Retail and Community-Serving Commercial (sq. ft.)	180,000	0
Child Care Center	15,000	5,000 [c]
Residential	2,937 units	0 units
Totals		
Commercial (sq. ft.)	**2,019,952**	**2,677,186**
Residential (dwelling units)	**2,937 units**	**0 units**

[a] *Includes up to 500 hotel guest rooms and related hotel facilities.*
[b] *Includes up to 1,000 hotel guest rooms and related hotel facilities.*
[c] *Child care center under Alternative 10 is an an expansion of the existing child care center.*
Sources: NBC Universal; Rios Celemente Hale Studios; Matrix Environmental
Prepared by: HR&A Advisors, Inc.

Under Alternative 10, changes in existing jurisdictional boundaries also would occur (i.e., annexation and detachment), but not to the same extent as the proposed Project. Most significantly, due to this alternative's elimination of the proposed residential, neighborhood retail and community-serving commercial uses of the proposed Project, no annexation or detachment actions would occur in the proposed Mixed-Use Residential Area (existing Back Lot Area) of the Project Site.

Other jurisdictional boundary adjustments as provided for in the Project would be made with refinements to reflect the land use configurations associated with this alternative. For example, similar to the proposed Project, portions of the Project Site along the Hollywood Freeway and Universal Hollywood Drive would be annexed into the City to reflect the Applicant's anticipated use of these portions of the Project Site and to correct the current situation in which the jurisdictional boundary runs through the middle of certain existing structures. Compared with the proposed Project, the portion of the Project Site along Universal Hollywood Drive which would be

annexed into the City would be shifted east slightly, so as to include a different area of frontage along the north side of Universal Hollywood Drive.

Overall, this alternative would involve the annexation of approximately 3 acres of the Project Site from the County's jurisdiction into the City of Los Angeles. This alternative would also involve detachment of approximately 31 acres of the Project Site from the City's jurisdiction into the County. The jurisdictional boundary adjustments proposed under Alternative 10 will therefore result in an overall net change of approximately 28 acres from the City to the County. Should the annexation and detachment process be completed, approximately 67 acres of the Project Site would be located within the City of Los Angeles, and the remaining approximately 324 acres of the Project Site would be located within the unincorporated area of Los Angeles County.

Should the proposed annexation and detachment not occur under this alternative, the 95 acres within the Project Site currently located within the City of Los Angeles would remain located in the City of Los Angeles, while the balance, 296 acres, would remain under the jurisdiction of the County of Los Angeles. If the proposed annexation and detachment does not occur, this alternative's proposed development of approximately 2.67 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail, Amphitheater, Hotel and related space that supports the various on-site production and entertainment activities would still occur; however, these uses would be situated based on existing jurisdictional boundaries.

Under Alternative 10, development in the County portions of the Project Site would occur in accordance with the provisions set forth in a modified County Specific Plan, the boundaries of which would reflect the above discussed annexation and detachment actions. Development in the County portions of the Project Site would include Studio, Studio Office, Office, Entertainment, Entertainment Retail, and Amphitheater uses proposed in the County under the Project, and 450,000 square feet of Hotel uses proposed in the County under the Project, plus an additional 192,240 net new square feet of Entertainment uses. In addition, due to Alternative 10's eastward shift of area fronting Universal Hollywood Drive that would be annexed to the City, 250,000 square feet of Studio Office uses proposed to be in City jurisdiction under the Project will shift to County jurisdiction under Alternative 10. As with the proposed Project, Alternative 10 would also include an equivalency program in the County that allows for the development of a different land use mix as long as the overall character of development within the County Specific Plan area and each Development Area located in the County is maintained.

Development in the City portions of the Project Site under Alternative 10 would occur in accordance with a modified City Specific Plan, the boundaries of which would reflect the above discussed annexation and detachment actions. Development in the City portions of the Project Site would include the 50,000 square feet of Studio uses proposed in the City under the Project, plus 450,000 square feet of Hotel uses in the Entertainment Area, as well as approximately 200,000 new square feet of Studio Office uses, which would be located in the northeastern portion of the Project Site near Barham Boulevard and Lakeside Plaza Drive. Alternative 10 would also include a 5,000 square foot expansion to the existing child care center in the northeastern portion of the Project Site, which would be located entirely within the City. Accordingly, under Alternative 10, the existing child care center would not be demolished and relocated to County jurisdiction, as it would be under the proposed Project. Furthermore, Alternative 10 would include an equivalency program in the City that would allow flexibility for modifications to land uses and square footages.

C. ORGANIZATION OF THE REPORT

The remaining Chapters of this Report are:

- *Economic and Employment Impacts*. This Chapter evaluates the number and character of jobs supported by construction and operation of a completed Alternative 10, and the relationships between these impacts and adopted employment growth and economic development policies and, in particular, its relationship to SCAG's 2030 employment growth forecast for the Southeast San Fernando Valley and the City of Los Angeles Subregion. These impacts are also compared with those for the proposed Project.
- *Indirect Housing Impacts*. Because Alternative 10 does not include any residential development, its housing impacts are limited to those resulting from indirect housing demand associated with the number of net new jobs that would result from implementation of this Alternative. Accordingly, this Chapter provides an estimate of indirect housing demand and then evaluates the result in terms of adopted County and City housing growth policies and SCAG's households growth forecast for the Southeast San Fernando Valley and the City of Los Angeles Subregion. Cumulative impacts are also evaluated. These impacts are also compared with those for the proposed Project.
- *Indirect Population Impacts*. Once again, because Alternative 10 does not include any housing, its population impacts are limited to those resulting from indirect housing demand associated with the number of net new jobs that would result from implementation of this Alternative. Accordingly, this Chapter provides an estimate of the indirect population impact associated with the indirect housing demand, and then evaluates the result in terms of SCAG's population growth forecast for the Southeast San Fernando Valley and the City of Los Angeles Subregion. Cumulative impacts are also evaluated. These impacts are also compared with those for the proposed Project.

III. ECONOMIC AND EMPLOYMENT IMPACTS

A. INTRODUCTION

This Chapter evaluates the economic and employment impacts associated with Alternative 10 against the applicable CEQA thresholds, individually and together with related projects, and compares these results with the proposed Project. As noted in Chapter II, the analysis presented in this Chapter relies on the same analysis techniques and data sources that were utilized in preparing the economic impacts analysis of the proposed Project, as presented in the Project's Draft EIR, including Appendix P (Employment, Housing and Population Report).

B. ALTERNATIVE 10 IMPACTS

1. Threshold of Significance

As in the Draft EIR analysis of the Project's impacts, the following thresholds of significance are used with respect to employment:

- Would the Project cause growth (i.e., new employment), or accelerate development in an undeveloped area, that exceeds projected/planned levels for the year of Project buildout?
- Would the Project be incompatible with adopted local and regional employment growth policies, including jobs/housing balance, as set forth in the County's General Plan, the City's General Plan and the Southern California Association of Government's Regional Comprehensive Plan and Guide?

Operationally, employment growth impacts are assessed in terms of the Alternative 10's relationship to applicable adopted growth forecasts, economic development policies and certain other growth inducement issues, as discussed below.

2. Impact Analysis Methodology

As discussed in the Draft EIR, the "economic impact" of a new development project refers to the incremental difference that its construction and operation make in terms of people employed, employee compensation paid and total value of goods and services circulating in the economy (i.e., "total economic output"). These impacts are generally classified into three categories, as follows:

- *Direct Impacts*. These include, for example, all jobs, compensation and spending resulting directly from the Applicant's substantial investment in development and construction of Alternative 10. Direct impacts also include those net new jobs, compensation and spending that will occur on the Project Site once it is completed. These impacts represent the "first round" of impact on the County's economy.
- *Indirect Impacts*. Indirect impacts are created by business purchases of goods and services that are used as inputs to the construction process and the on-going operation of the

completed Alternative 10, as well as successive rounds of spending to produce these goods and services. This impact category includes, for example, jobs, compensation paid and total spending that result when construction contractors purchase materials, supplies and services, or when the Applicant or other business entities located in the completed Alternative 10 purchase goods and services to supply, repair and maintain their operations.

- *Induced Impacts*. Induced impacts are created when direct and indirect employees spend their earnings for a variety of household goods and services, including convenience goods (e.g., supermarkets), comparison shopping goods (e.g., car dealers, household appliances and furniture stores) and consumer services (e.g., banks). These impacts typically occur near to where direct and indirect employee households reside, and therefore may be spread over a large geographic area.

Indirect and induced impacts were estimated for employment, compensation (i.e., wages and benefits) and total economic output, for both the construction of Alternative 10 and its annual operation after construction of all proposed improvements are completed and they achieve stabilized operation.

As in the Draft EIR analysis of the Project, construction and operational employment, compensation and total economic output for Alternative 10 were estimated using the IMPLAN input-output model of the Los Angeles County economy, as of 2007, the most recent year for which IMPLAN data on the County economy were available at the time the Draft EIR was prepared. Direct employment, following completion of construction, was estimated by HR&A based on a detailed analysis of existing employment and floor area by land use at the project Site, which generated employment density factors by land use, that were then applied to the characteristics of Alternative 10, as discussed below.

3. Construction-Related Economic and Employment Impacts

Using the same construction cost factors utilized in preparing the economic and employment impact analysis in the Draft EIR, but applied to the specific gross new floor area by land use that is associated with Alternative 10, it is estimated that Alternative 10 will require a hard cost construction budget of about $1.619 billion or about 47 percent less than the proposed Project overall. Construction spending for non-residential floor area would be twice the amount for the Project, but Alternative 10 would not include about $1.878 billion associated with the Project's residential and neighborhood retail and community-serving uses.

a. Construction Employment Impacts

Entering the Project's estimated construction cost as final demand into the relevant "new construction" sectors of the IMPLAN model produced an estimate of 11,048 jobs directly associated with the construction of Alternative 10, as compared with 16,559 direct jobs associated with Project construction. Alternative 10's direct construction jobs will support another 3,137 indirect jobs (compared with 7,668 for the Project) in a wide range of industries throughout the County resulting from purchases of construction-related supplies, goods and services.

Compensation paid to Alternative 10's number of direct and indirect workers will support another 4,366 induced jobs in the County economy, compared with 7,170 for the Project. These results are summarized in Table III-1. The details of the IMPLAN construction investment impacts are included in Appendix A.

Table III-1
Project vs. Alternative 10 Construction Jobs Impact

	Project	Alternative 10
Direct Jobs		
Non-Residential Construction	8,309	11,048
Residential Construction	8,250	-
Subtotal Direct Jobs	16,559	11,048
Indirect Jobs	7,668	3,137
Induced Jobs	7,170	4,366
Totals	31,397	18,551

Sources: IMPLAN v.2; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

b. Other Construction Economic Impacts

Based on IMPLAN model analysis, it is estimated that construction-related employee earnings (wages and benefits) in Los Angeles County will total about $878.2 million for Alternative 10, as compared with $1.458 billion for the Project (all in 2007 dollars). About 61 percent of the earnings ($534.8 million) associated with Alternative 10 construction would be paid to workers directly involved in construction of Alternative 10, as compared with $802.3 million for the Project. These results are shown in the top panel of Table III-2.

Table III-2
Project vs. Alternative 10 Construction
Worker Compensation and Total Economic Output

	Project	Alternative 10
Worker Compensation		
Direct Compensation	$ 802,321,152	$ 534,842,016
Indirect Compensation	$ 364,104,462	$ 165,535,930
Induced Compensation	$ 291,818,499	$ 177,793,899
Total Compensation [a]	**$ 1,458,224,115**	**$ 878,171,843**
Total Economic Output		
Direct Output	$ 3,041,409,024	$ 1,619,319,040
Indirect Output	$ 1,184,295,741	$ 546,726,496
Induced Output	$ 1,013,119,397	$ 617,425,467
Total Output [a]	**$ 5,238,824,155**	**$ 2,783,471,001**

[a] Subtotals and totals may not sum precisely due to independent rounding
Sources: IMPLAN v.2; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

"Total economic output" refers to total economic activity associated with either the construction or annual operation of completed development, including employee earnings, profits and indirect business taxes. The total one-time, economic output impact within Los Angeles County resulting from the construction of Alternative 10 is estimated to be $2.783 billion, as compared with $5.238 billion for the Project (all in 2007 dollars), as shown in the bottom panel of Table III-2.

4. Project Operational Economic and Employment Impacts

The economic and employment impacts of the completed Project are analyzed from several different, but related, perspectives. First, the analysis presents a projection of the number of direct jobs that would be associated with net new floor area constructed as part of Alternative 10, using current employment density factors for similar uses and the number of jobs on site. Next, the projected scale of Project employment is compared with applicable local and regional employment growth forecasts. Finally, the scale of Alternative 10 employment is compared with applicable local and regional economic development and employment policies.

a. *Annual Employment Impacts*

Using employment density factors for similar uses that were utilized in preparing the Draft EIR analysis of the Project, it is estimated that Alternative 10 would add 6,368 new on-site jobs once all proposed non-residential improvements have been constructed by the year 2030, as compared with 5,193 direct on-site jobs for the Project (i.e., not including an additional 2,635 jobs that would be generated by household spending from the Project's 2,937 dwelling units). Table III-3 presents an estimate of the number of direct, indirect and induced jobs for Alternative 10 and compares the results with the Project, as presented in the Draft EIR. Table III-4 presents a comparison between the number of direct new jobs for each of Alternative 10's general land use

categories and land uses in the proposed Project. The details of the IMPLAN annual operations impacts are included in Appendix B.

Table III-3
Project vs. Alternative 10 Annual Operations Jobs Impact

	Project	Alternative 10
Non-Residential Uses		
Direct Jobs	5,193	6,368
Indirect Jobs	2,140	2,728
Induced Jobs	2,147	2,673
Subtotal Non-Residential Uses [a]	9,481	11,769
Household Spending		
Direct Jobs	1,718	-
Indirect Jobs	460	-
Induced Jobs	457	-
Subtotal Non-Residential Uses [a]	2,635	-
Total Jobs		
Direct Jobs	6,911	6,368
Indirect Jobs	2,600	2,728
Induced Jobs	2,604	2,673
Totals [a]	**12,115**	**11,769**

[a] Subtotals and totals may not sum precisely due to independent rounding.
Sources: IMPLAN v.3; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

Table III-4
Project vs. Alternative 10 Direct On-Site Jobs by Land Use

Land Use	Project [a]	Alternative 10
Studio	953	953
Studio Office	1,133	1,723
Office	1,329	1,329
Entertainment	561	1,302
Entertainment Retail	193	193
Amphitheater	-	-
Hotel	424	848
Neighborhood Retail and Community-Serving Commercial	540	0
Child Care Center	60	20
Residential	-	-
Total	**5,193**	**6,368**

[a] Does not include 1718 direct off-site jobs associated with household spending generated by the Project's residential units.
Sources: NBC Universal; Rios Clementi Hale Studios; Matrix Environmental
Prepared by: HR&A Advisors, Inc.

b. Other Annual Economic Impacts

Table III-5 compares the worker compensation and total economic output impacts for annual operation of Alternative 10 and the Project.

Employee earnings associated with the ongoing operation of Alternative 10 (direct, indirect and induced employees within Los Angeles County) are estimated to total $647.8 million annually, as compared with $540.3 million for the Project's on-site uses (all in 2007 dollars) and $646.4 million overall, including earnings associated with the Project's household spending. About 61.2 percent of Alternative 10 earnings ($396.2 million) would go to employees directly located on the Project Site, as compared with $332.1 for the Project's on-site uses only. About $251.5 million for Alternative 10 would go to employees whose jobs are indirectly created and induced by direct, on-site employment, as compared with $208.3 million for the Project's on-site uses, and $249.9 million for the Project overall, including the impact of the project's household spending.

The on-going operation of the Alternative 10 is expected to contribute an additional $1.900 billion (in 2007 dollars) annually to the Los Angeles County economy, as compared with $1.927 billion for the Project.

Table III-5
Project vs. Alternative 10 Annual Operations
Worker Compensation and Total Economic Output

	Project	Alternative 10
Worker Compensation		
Non-Residential Uses		
Direct Compensation	$ 332,129,669	$ 396,209,148
Indirect Compensation	$ 116,026,691	$ 142,696,122
Induced Compensation	$ 92,276,703	$ 108,842,986
Subtotal Non-Residential Uses [a]	$ 540,433,070	$ 647,748,256
Household Spending		
Direct Compensation	$ 64,351,854	$ -
Indirect Compensation	$ 23,048,624	$ -
Induced Compensation	$ 18,592,224	$ -
Subtotal Non-Residential Uses [a]	$ 105,992,702	$ -
Totals Compensation		
Direct Compensation	$ 396,481,523	$ 396,209,148
Indirect Compensation	$ 139,075,315	$ 142,696,122
Induced Compensation	$ 110,868,927	$ 108,842,986
Totals [a]	**$ 646,425,772**	**$ 647,748,256**
Total Economic Output		
Non-Residential Uses		
Direct Output	$ 865,565,700	$ 1,068,400,810
Indirect Output	$ 369,998,395	$ 453,906,256
Induced Output	$ 319,272,082	$ 377,978,576
Subtotal Non-Residential Uses [a]	$ 1,554,836,231	$ 1,900,285,642
Household Spending		
Direct Output	$ 228,489,888	$ -
Indirect Output	$ 79,757,031	$ -
Induced Output	$ 64,547,359	$ -
Subtotal Non-Residential Uses [a]	$ 372,794,279	$ -
Totals Economic Output		
Direct Output	$ 1,094,055,588	$ 1,068,400,810
Indirect Output	$ 449,755,426	$ 453,906,256
Induced Output	$ 383,819,441	$ 377,978,576
Totals [a]	**$ 1,927,630,510**	**$ 1,900,285,642**

[a] Subtotals and totals may not sum precisely due to independent rounding.
Sources: IMPLAN v.3; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

5. Project Employment Consistency With Adopted Employment Growth Forecasts

Table III-6 shows that the 6,368 full-time and part-time jobs directly associated with the Alternative 10's net new floor area represent about 3.1 percent of 2030 employment in the Southeast San Fernando Valley (as compared with 3.3% for the Project), and 21.8 percent of employment growth between 2008 and 2030 (as compared with 23.7% for the Project).

Table III-6 also shows that Alternative 10's direct employment equals about 0.3 percent of projected 2030 employment in the City of Los Angeles Subregion (as compared with 0.3% for the Project), and 2.0 percent of employment growth between 2008 and 2030 (as compared with 2.2% for the Project). Alternative 10 employment is therefore consistent with SCAG's forecast for the City of Los Angeles Subregion.

Table III-6
Comparison of Alternative 10 Employment With Adopted SCAG Employment Forecast

Projection	Employment
SCAG Forecasts [a]	
SCAG City of Los Angeles Subregion 2030	2,265,000
SCAG City of Los Angeles Subregion 2008-2030 Growth	312,764
Southeast San Fernando Valley 2030	207,920
Southeast San Fernando Valley 2008-2030 Growth	29,160
Alternative 10 Jobs [b]	
Direct Jobs	6,368
Proposed Project [c]	6,911
Change from Proposed Project	
Number	(543)
Percent	-7.9%
Alternative 10 Percentage of SCAG Forecasts	
Share of SCAG City of Los Angeles Subregion 2030	0.28%
Share of SCAG City of Los Angeles Subregion 2008-2030 Growth	2.04%
Share of Southeast San Fernando Valley 2030	3.06%
Share of Southeast San Fernando Valley 2008-2030 Growth	21.84%

[a] See Draft EIR analysis of Project.
[b] From Table III-4.
[c] Includes direct on-site jobs associated with non-residential uses and direct off-site jobs associated with household spending.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

6. Consistency With Adopted Plans and Policies

In addition to the foregoing assessment of consistency with adopted local and regional employment growth forecasts, the following sections provide a qualitative assessment of the degree to which Alternative 10 is consistent with economic development and employment policies in the County General Plan, City General Plan and SCAG's Regional Comprehensive Plan and Guide.

a. Consistency With the County General Plan

As noted in the Draft EIR analysis of the Project, the County General Plan includes several employment-related policies: encourage the location of employment opportunities in regional centers (Policy #50); encourage a strong diversified economy that will provide business opportunities, an adequate number of jobs for the County's labor force and an improved standard of living (Policy #64); and promote jobs within commuting range of urban residential areas (Policy #65). Alternative 10, like the Project, is consistent with these County General Plan goals and policies in that it: (i) concentrates growth in an urbanized regional center, proximate to the Universal City Metro Red Line Station and the regional highway system; (ii) would support the creation of a number of new jobs (direct, indirect and induced; construction-related and permanent); and (iii) supports the growth and retention of one of the most important industries in the region's economic base.

The Economic Development Chapter of the County General Plan also includes an Economic Development and Revitalization Policy map. The Project Site is located in an area designated as "major industrial revitalization/intensification" area and is identified as a "major office/commercial job center." The jobs goal of the Chapter is to create jobs and increase incomes for County residents. Alternative 10, like the Project, is consistent with these policies in that it would directly create 6,368 net new job opportunities in an area already designated for concentrated employment growth.

b. Consistency With the City of Los Angeles General Plan Framework Element

Alternative 10: (i) concentrates growth in one of the City's urbanized regional centers, which also features the Universal City Metro Red Line Station; (ii) would support the creation of new jobs; (iii) would include a mix of entertainment retail, entertainment, studio, office and hotel uses, all in the same development (i.e., mixed-use); (iv) involves the expansion of relatively "clean" industry; and (v) is a type of project that will yield a net fiscal surplus for the City. Thus, Alternative 10, like the Project, is consistent with the non-quantitative policies in the City's General Plan Framework Element.

More specifically, Alternative 10 compares with each of the Framework Element's economic development polices as follows:

> *7.2.2 Concentrate commercial development entitlements in areas best able to support them, including community and regional centers, transit stations, and mixed-use corridors. This concentration prevents commercial development from encroaching on existing residential neighborhoods.*

Like the Project, Alternative 10 would be located immediately adjacent to an area designated as a regional center in the Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass Community Plan, and adjacent to the Universal City Metro Red Line Station. The relatively undeveloped Back Lot area provides a buffer between the non-residential uses and the existing Blair Drive residential neighborhood. Alternative 10, like the Project, is therefore consistent with this Framework Element objective.

7.2.3 Encourage new commercial development in proximity to rail and bus transit corridors and stations.

Like the Project, Alternative 10 would be immediately adjacent to the Universal City Metro Red Line Station and Metro park-and-ride facility on Lankershim Boulevard, and therefore Alternative 10, like the Project, is consistent with this objective.

7.2.5 Promote and encourage the development of retail facilities appropriate to serve the shopping needs of the local population when planning new residential neighborhoods or major residential developments.

For the following reasons, this policy is no longer applicable to Alternative 10. Alternative 10 would not include any of the Project's neighborhood retail and community-serving uses that were intended to serve the Project's residential population. Although Alternative 10 would include additional entertainment, and perhaps some convenience retail to meet the needs of Project Site visitors and employees, this retail is not intended to serve the consumer needs of the off-site residential population surrounding the Project Site.

7.2.6 Concentrate office development in regional mixed-use centers, around transit stations, and within community centers.

Like the Project, Alternative 10's net additional floor area for studio office and office space would be located adjacent to a regional center with the Universal City Metro Red Line Station. Alternative 10, like the Project, is therefore consistent with this Framework Element policy.

7.5.4 Proactively market Los Angeles to emerging industries to encourage them to locate within the City, with an emphasis on the attraction of environmentally-oriented and "clean" industries.

The entertainment industry and visitor-serving uses planned for the Project Site will help anchor these industry sectors in the region. Like the Project, Alternative 10 would also incorporate Universal's existing environmental management strategies, and implement feasible mitigation measures required to reduce environmental impacts. Alternative 10, like the Project, is therefore consistent with this policy.

7.6.3 Facilitate the inclusion of shopping facilities in mixed-use developments that serve the needs of local residents and workers. If necessary, consider utilizing financing techniques such as land write-downs and density bonuses.

As noted above with respect to Policy 7.2.5, this policy is no longer applicable to Alternative 10. Alternative 10 does not include any of the Project's neighborhood retail and community-serving uses that were intended to serve the Project's residential population. Alternative 10 would include additional entertainment retail, and perhaps some convenience retail, but only to meet the needs of Project Site visitors and employees.

7.8.1 Place the highest priority on attracting new development projects to Los Angeles which have the potential to generate a net fiscal surplus for the City.

Like the Project, Alternative 10 would include a number of land uses that generally generate more tax and other revenues than they consume in City services, thereby producing a net positive fiscal impact. Therefore, Alternative 10, like the Project, would be consistent with this policy.

> *7.8.3 Encourage mixed-use development projects, which include revenue generating retail, to offset the fiscal costs associated with residential development.*

This policy is no longer applicable to Alternative 10, because Alternative 10 does not include any residential uses whose net fiscal costs might need to be offset with revenues from non-residential uses. Alternative 10 would, however, include a number of land uses that generate more tax and other revenues than they consume in City services, thereby producing an overall net positive fiscal impact for the City.

c. *Consistency with the Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass Community Plan*

As with the Project, Alternative 10's entertainment industry uses are part of a relatively "clean" industry that creates a variety of employment opportunities for City residents. Therefore, like the Project, Alternative 10 is consistent with the applicable industrial land use goals, policies and objectives in the Community Plan, as listed above.

d. *Consistency With SCAG's 1996 Regional Comprehensive Plan and Guide*

Like the Project, Alternative 10 would: (i) concentrate growth in one of the City's urbanized regional centers, which also features a the Universal City Metro Red Line Station; (ii) support the creation of new jobs; and (iii) include a mix of entertainment retail, entertainment, hotel, studio, and office uses, all in the same development (i.e., mixed-use). Thus, like the Project, Alternative 10 is consistent with the non-quantitative policies of the 1996 RCPG's Growth Management Chapter.

Furthermore, the Project and Alternative 10 would directly support the growth and retention of the entertainment industry in southern California, which is consistent with other themes in the Economy Chapter. The 1996 RCPG identifies this industry as one of several "industrial clusters" that should be the focus of a regional economic development strategy. The 1996 RCPG identifies the entertainment and entertainment-related industries, which include the Project, as particularly important to the region's economic base because they combine relatively minimal demands on infrastructure and the environment with large and diverse expenditures and high-wage employment (in its film, television and commercial components), and they are on the brink of a technological transition that is closely linked with the State's computer and telecommunications industries. These advances have resulted in expansions by the film industry into themed entertainment and merchandising enterprises with yet additional multiplier potential for the regional economy.

Like the Project, Alternative 10's variety of lower-wage jobs provides important employment opportunities for students, part-time workers and low-skill workers, and provides a possible career path to higher-skilled, higher-wage positions within the entertainment industry.

It can therefore be concluded that, like the Project, Alternative 10 is consistent with the qualitative policies in the Economy Chapter of the 1996 RCPG.

7. Conclusions Regarding Significance of Impacts

In sum, Alternative 10 would be consistent with applicable SCAG, County, and City employment growth plans and policies. Like the Project, Alternative 10 would: (1) concentrate growth in an urbanized regional center, proximate to the Universal City Metro Red Line Station as well as numerous regional and local bus lines; (2) support the creation of new jobs (construction-related and permanent; direct, indirect, and induced); and (3) support the growth and retention of one of the most important industries in the region. The Project would result not only in a substantial number of new jobs and new economic activity, but it would also help to anchor the entertainment and tourism sector in Los Angeles County. The variety of jobs generated by Alternative 10 and the Project would provide important employment opportunities for students, part-time and entry level workers, whose numbers are increasing and who are not likely to find sufficient employment in the region's new high technology sectors. Alternative 10 would similarly create career paths to higher-skilled, higher-wage positions in the increasingly multi-dimensional entertainment industry. In addition, both Alternative 10 and the Project would constitute a new source of revenue for the City and County of Los Angeles, both of which face on-going challenges in balancing revenues and the costs of the public's demand for services. In sum, Alternative 10, like the Project, would have a less-than-significant impact with respect to employment.

8. Other Growth Inducement Issues

While Alternative 10's addition of new employment is consistent with various regional and local policies, it will not, in and of itself, foster new growth in the area by removing impediments to growth, as was the case with the Project. As described in the land use section of the Draft EIR, the property surrounding the Project Site is already developed with single-family and multi-family homes, and commercial uses. All roads planned for the Project Site are planned primarily for internal circulation and would not open any large undeveloped areas for new use. Similarly, utility and other infrastructure upgrades planned for the Project Site are intended primarily to meet demand. Alternative 10 would not create any new household demand for commercial goods and services. No new development specifically to meet Alternative 10's scale of commercial demand would be needed. On the contrary, and like the Project, Alternative 10's new uses would help support the viability of existing businesses in the Project Site vicinity.

C. CUMULATIVE IMPACTS

The sum of direct, indirect and induced Alternative 10 employment is projected to total 11,769 full-time and part-time jobs across a wide range of industry sectors. Although these jobs would be spread over the entire County, even if they were concentrated in just the City of Los Angeles Subregion, Alternative 10's total employment impact would be less than SCAG's employment forecast for the Subregion in 2030 (i.e., 2,265,000 jobs), and forecasted employment growth over the period 2008-2030 (312,754). Further, development of studio and theme park uses would also help anchor the entertainment industry in the Los Angeles area, and therefore would

not cause any growth shifts from, or to, other areas. The net additional specialized entertainment retail floor area would not cause any change in current retail market dynamics.

Table III-7 shows the cumulative employment impact of total Alternative 10 employment with all other forecasted employment growth for the City of Los Angeles Subregion between 2008 and 2030. The 2008-2030 forecasted employment growth is used as a proxy for "related projects," because the employment impacts of individual developments that may actually occur between 2008 and 2030 cannot be reasonably foreseen over the period of Alternative 10 buildout.

Table III-7
Comparison of Alternative 10 Employment With Adopted SCAG Employment Forecast

Projection	Employment
SCAG Forecasts [a]	
SCAG City of Los Angeles Subregion 2030	2,265,000
SCAG City of Los Angeles Subregion 2008-2030 Growth	312,764
Alternative 10 Jobs [b]	
Direct Jobs	6,368
Indirect Jobs	2,728
Induced Jobs	2,673
Total Alternative 10 Jobs	11,769
"Related Project" Jobs	312,764
Cumulative Employment	324,533
Proposed Project [c]	324,879
Change from Proposed Project	
Number	(346)
Percent	-0.1%
Alternative 10 Percentage of SCAG Forecasts	
Alternative 10 Share of SCAG City of Los Angeles Subregion 2030	0.52%
Alternative 10 Share of SCAG City of Los Angeles Subregion 2008-2030 Growth	3.76%
Cumulative Share of SCAG City of Los Angeles Subregion 2030	14.33%

[a] See Draft EIR analysis of Project.
[b] From Table III-4.
[c] Includes direct on-site jobs associated with non-residential uses and direct off-site jobs associated with household spending.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

Table III-7 compares the resulting sum of total employment and the forecasted employment growth, with the employment forecasted in the Subregion for 2030. Table III-7 shows that: (1) Alternative 10's total employment impact accounts for 0.52 percent of 2030 employment in the Subregion (compared with 0.53% for the Project); (2) total employment impact also accounts for 3.76 percent of the 2008-2030 employment growth forecast in the Subregion (compared with 3.87% for the Project); and (3) cumulative employment (i.e., total employment plus forecasted

2008-2030 employment growth in the Subregion) represents 14.33 percent of 2030 employment in the Subregion (compared with 14.34% for the Project).

Thus, like the Project, Alternative 10's incremental effect is not "cumulatively considerable" within the meaning of CEQA, and hence its cumulative impact is less than significant.

D. MITIGATION MEASURES

As Alternative 10 employment impacts, like Project impacts, are less than significant, no mitigation measures are required or recommended.

E. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Like the Project, neither Alternative 10 considered alone, nor Alternative 10 in combination with "related projects," would exceed SCAG's adopted employment forecast for the City of Los Angeles Subregion. Alternative 10, like the Project, would be consistent with adopted economic and employment policies of SCAG's RCPG, the Los Angeles County General Plan and the City of Los Angeles General Plan Framework Element and the Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass Community Plan. Therefore, Alternative 10, like the Project, would not result in any significant and unavoidable environmental impacts with respect to employment.

IV. HOUSING IMPACTS

A. INTRODUCTION

This Chapter evaluates the indirect housing impacts of Alternative 10 against the applicable CEQA threshold, focusing on consistency between Alternative 10 and applicable housing growth policies and growth forecasts, as compared to Project impacts. As noted in Chapter II, the analysis presented in this Chapter relies on the same analysis techniques and data sources that were utilized in preparing the housing impacts analysis of the proposed Project, as presented in the Project's Draft EIR, including Appendix P (Employment, Housing and Population Report).

B. HOUSING IMPACTS

Alternative 10 does not include construction of any residential units, but could result in an indirect need for housing due to the residential location choices made by some direct employees.

1. Threshold of Significance

Based on the criteria set forth in the City of Los Angeles 2006 CEQA Thresholds Guide, the Project would have a significant impact on housing if:

- It would cause growth or accelerate development in an undeveloped area that exceeds projected/planned levels for the year of projected occupancy/buildout, and that would result in an adverse physical change in the environment.
- It is not compatible with adopted local and regional housing growth policies, including jobs/housing balance, as set forth in the County's General Plan, the City's General Plan and the Southern California Association of Government's Regional Comprehensive Plan and Guide.
- It would introduce unplanned infrastructure that was not previously evaluated in the adopted Community Plan or General Plan; and
- It represents a substantial amount of growth to occur which would not occur without implementation of the Project.

Operationally, housing growth impacts are assessed in terms of the Project's relationship to applicable adopted growth forecasts, County and City housing policies and certain other growth inducement issues, as discussed below.

2. Construction-Related Housing Impacts

Due to the employment patterns of construction workers in southern California, and the operation of the market for construction labor, construction workers are not likely, to any significant degree, to relocate their households as a consequence of the job opportunities presented by the Project.

The construction industry differs from most other industry sectors in several important ways that are relevant to potential impacts on housing:

- There is no regular place of work. Construction workers commute to job sites that change many times in the course of a year. These often lengthy daily commutes are made possible by the off-peak starting and ending times of the typical construction work day.
- Many construction workers are highly specialized (e.g., crane operators, steel workers, masons), and move from job site to job site as dictated by the demand for their skills.
- The work requirements of most construction projects are also highly specialized and workers are employed on a job site only as long as their skills are needed to complete a particular phase of the construction process.

It is reasonable to assume, therefore, that construction workers for Alternative 10 would not relocate their households' places of residence as a consequence of their work, and there would not be any significant housing impacts on City or Subregional housing due to construction of this Alternative.

3. Indirect Housing Impacts of Project Employees

Based on the results of the 2008 employee survey results for existing Project Site employees reported in the Draft EIR analysis of the Project, it is estimated that about six percent of Alternative 10 direct employees, or 382 employees, would move to a city that is closer to the Project Site, as compared with 232 for the Project.

4. Project Dwelling Units Housing Impacts

a. *Consistency With Adopted Growth Forecasts*

As shown in Table IV-1, an allowance for 382 households of indirect housing demand generated by Alternative 10 employees represent about two-tenths of one percent (0.21%) of the households forecasted for 2030 in the Southeast San Fernando Valley (compared with 1.7% for the Project), and about 1.2 percent of the remaining household growth forecasted between 2008 and 2030 (compared with 10.3% for the Project).

As also shown in Table IV-1, the households associated with indirect housing demand generated by Alternative 10's direct new employees, represent about two one-hundredths of one percent (0.02%) of the households forecasted for 2030 in the City of Los Angeles Subregion (as compared with 0.19% for the Project's on-site housing and indirect housing demand), or just over one-tenth of one percent (0.13%) of the remaining growth forecasted between 2008 and 2030 (as compared with about 1.08% for the Project). Therefore, like the Project, Alternative 10 would not induce substantial housing growth, because it would meet a portion of forecasted housing need rather than exceeding the households growth forecast for the Southeast San Fernando Valley and SCAG's City of Los Angeles Subregion.

Table IV-1
Comparison of Alternative 10 Indirect Households With Adopted SCAG Households Forecast

Projection	Households
SCAG Forecasts [a]	
SCAG City of Los Angeles Subregion 2030	1,663,000
SCAG City of Los Angeles Subregion 2008-2030 Growth	294,530
Southeast San Fernando Valley 2030	182,541
Southeast San Fernando Valley 2008-2030 Growth	30,826
Alternative 10 Households [b]	
Indirect Households	382
Proposed Project [c]	3,169
Change from Proposed Project	
Number	(2,787)
Percent	-87.9%
Alternative 10 Percentage of SCAG Forecasts	
Share of SCAG City of Los Angeles Subregion 2030	0.02%
Share of SCAG City of Los Angeles Subregion 2008-2030 Growth	0.13%
Share of Southeast San Fernando Valley 2030	0.21%
Share of Southeast San Fernando Valley 2008-2030 Growth	1.24%

[a] See Draft EIR analysis of Project.
[b] 6% x 6,368 Alternative 10 direct jobs = 382 indirect households.
[c] Includes direct on-site households and indirect households associated with employment.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

b. Consistency With City, County and Regional Housing Policies

(1) Consistency With City of Los Angeles General Plan Housing Goals and Policies

Because Alternative 10 does not include any residential development, none of the housing goals or policies in the City's General Plan, including the Housing Element and the Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass Community Plan, applies to Alternative 10.

(2) Consistency With County of Los Angeles Housing Element Goals

Here again, because Alternative 10 does not include any residential development, none of the goals or policies in the 1998-2005 County Housing Element, or the 2008-2014 County Housing Element, apply.

(3) Consistency With SCAG Housing Policies

The degree to which the Project is consistent with policies included in the Growth Management Chapter of the 1996 RCPG relevant to population and housing is presented below.

3.01 The population, housing and jobs forecasts, which are adopted by SCAG's Regional Council and reflect local plans and policies, shall be used by SCAG in all phases of implementation review.

The Project Site is located in the City of Los Angeles Subregion. As presented in the above analysis, as well as the preceding Chapter III analysis of Alternative 10 employment impacts, and the subsequent Chapter V analysis of population impacts, Alternative 10 falls within all SCAG forecasts. Alternative 10's 6,368 on-site jobs represents 2.03 percent of forecasted employment growth for the City of Los Angeles Subregion between 2008 and 2030; its 382 households from indirect housing demand represent approximately 0.13 percent of forecasted households growth between 2008 and 2030; and the indirect employment-related population impact of 1,146 persons represents about 0.39 percent of SCAG's population growth forecast for the Subregion between 2008 and 2030. The Project would be consistent with this policy.

3.04 Encourage local jurisdictions' efforts to achieve a balance between the types of jobs they seek to attract and housing prices.

According to the SCAG regional growth forecast, the Los Angeles Subregion's ratio of jobs to households (1.38) currently exceeds the regional ratio (1.34), and it is therefore considered "jobs rich-housing poor." By 2030, the SCAG forecast indicates the Subregional ratio will decline to 1.36, rendering it slightly "housing rich-jobs poor," as compared to the region in that year (i.e., 1.36 vs. 1.38). Alternative 10 would add jobs and only a small amount of indirect households, which would result in a 2030 Subregional jobs/housing ration of 1.37. This result would slightly exceed the forecasted Subregional jobs/housing balance ratio of 1.36 in 2030, but remains below the 1.38 ratio for the region as a whole. Alternative 10, like the Project, would be consistent with this policy.

3.24 Encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the 2007 Regional Housing Needs Assessment (RHNA).

Because Alternative 10 does not include any residential development, the 1996 RCPG housing goals do not apply to Alternative 10.

c. Other Growth Inducement Issues

Like the Project, Alternative 10 would not, in and of itself, foster new growth in the area by removing impediments to growth. As described in the land use section of the Draft EIR, the property surrounding the Project Site is already developed with single-family and multi-family homes. Roads planned for the Project are primarily for internal circulation and would not open any large undeveloped areas for new use. Similarly, utility and other infrastructure upgrades planned for the Project Site are intended primarily to meet Project-related demand. No new development specifically to meet Alternative 10's scale of indirect household demand would be needed.

5. Conclusions Regarding Significance of Impacts

Due to the employment patterns of construction workers in southern California, and the operation of the market for construction labor, construction workers are not likely, to any significant degree, to relocate their households as a consequence of the job opportunities presented by the Project.

As discussed above, even assuming some new Alternative 10 employees would relocate their households closer to the Project Site to be closer to their work, thereby indirectly generating demand for new households, the number of such households would fall within applicable forecasts of housing or household growth.

For all these reasons, Alternative 10's housing effects would not be adverse and thus are less than significant. The Project's housing effects were, however, considered beneficial, due to the number of on-site dwelling units included in the Project.

C. CUMULATIVE IMPACTS

Table IV-2 shows the cumulative housing impact of indirect households associated with net new Alternative 10 direct employment, in combination with all other forecasted household growth for the City of Los Angeles Subregion between 2008 and 2030. The 2008-2030 forecasted household growth is used as a proxy for "related projects," because the housing impacts of individual developments that may actually occur between 2008 and 2030 cannot be reasonably foreseen over the period of Project buildout. Table IV-6 compares the resulting total of indirect Alternative 10 households and forecasted household growth with the number of households forecasted to exist in the Subregion in 2030.

Table IV-2 shows that: (1) Alternative 10 indirect households account for 0.02 percent of households in the Subregion in 2030 (compared with 0.19% for the Project); (2) the Project's households account for 0.13 percent projected household growth in the Subregion between 2008 and 2030 (compared with 1.08% for the Project); and (3) cumulative households (i.e., Project households plus forecasted 2008-2030 household growth in the Subregion) represents 17.7 percent of the forecasted number of households in the Subregion in 2030 (compared with 17.9% for the Project).

Thus, Alternative 10's incremental housing effect, like the effect of the Project, is not "cumulatively considerable" within the meaning of CEQA, and hence its cumulative housing impact is less than significant.

Table IV-2
Comparison of Alternative 10 Indirect Households With Adopted SCAG Households Forecast

Projection	Households
SCAG Forecasts [a]	
SCAG City of Los Angeles Subregion 2030	1,663,000
SCAG City of Los Angeles Subregion 2008-2030 Growth	294,530
Alternative 10 Indirect Households [b]	
Total Alternative 10 Indirect Households	382
"Related Project" Households	294,530
Cumulative Households	294,912
Proposed Project [c]	297,699
Change from Proposed Project	
Number	(2,787)
Percent	-0.9%
Alternative 10 Percentage of SCAG Forecasts	
Alternative 10 Share of SCAG City of Los Angeles Subregion 2030	0.02%
Alternative 10 Share of SCAG City of Los Angeles Subregion 2008-203(	0.13%
Cumulative Share of SCAG City of Los Angeles Subregion 2030	17.73%

[a] See Draft EIR analysis of Project.
[b] See Footnote [b], Table IV-1.
[c] Includes the Project's direct on-site households and off-site households indirectly associated with on-site employment.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

D. MITIGATION MEASURES

For all of the reasons described above, Alternative 10, like the Project would not have an adverse housing effect and would not cause any significant adverse Project impacts to housing; therefore, no mitigation measures are required or recommended.

E. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Like the proposed Project, neither Alternative 10 taken alone, nor in combination with "related projects," would exceed SCAG's housing forecast for the City of Los Angeles Subregion. Therefore, Alternative 10 would not result in any significant and unavoidable environmental impacts with respect to housing.

V. POPULATION IMPACTS

A. INTRODUCTION

This Chapter evaluates Alternative 10's indirect population impacts, and cumulative impacts, against the applicable CEQA thresholds and regional population growth forecasts, as compared to Project impacts. As noted in Chapter II, the analysis presented in this Chapter relies on the same analysis techniques and data sources that were utilized in preparing the population impacts analysis of the proposed Project, as presented in the Project's Draft EIR, including Appendix P (Employment, Housing and Population Report).

B. POPULATION IMPACTS

As noted in Chapter IV, Alternative 10 does not include any new residential development, and therefore it will not have any direct population impacts. But indirect housing demand associated with net new employees could generate indirect housing impacts, and hence indirect population impacts.

1. Threshold of Significance

Based on the criteria set forth in the City of Los Angeles 2006 CEQA Thresholds Guide, the Project would have a significant impact on population if:

- It would cause growth or accelerate development in an undeveloped area that exceeds projected/planned levels for the year of projected occupancy/buildout, and that would result in an adverse physical change in the environment.
- It is not compatible with adopted local and regional population growth policies, including jobs/housing balance, as set forth in the County's General Plan, the City's General Plan and the Southern California Association of Government's Regional Comprehensive Plan and Guide.
- It would introduce unplanned infrastructure that was not previously evaluated in the adopted Community Plan or General Plan; and
- It represents a substantial amount of growth to occur which would not occur without implementation of the Project.

Operationally, population impacts are assessed in terms of Alternative 10's relationship to applicable adopted population growth forecasts only, because there are no other population growth policies *per se* in City, County or regional plans.

a. *Construction-Related Population Impacts*

For the reasons described in Chapter IV with respect to housing impacts, no adverse population impacts are predicted as a result of construction, since few construction workers are expected to relocate their households as a consequence of working on Alternative 10.

b. *Indirect Population Impacts*

Based on the analysis in Chapter IV, it is predicted that the scale of any population impacts associated with Alternative 10 would be proportional to the number of employee households who are likely to move closer to Universal City within one year after the employee takes a job at the Project Site. All other household moves would occur for reasons unrelated to development.

The analysis presented in Chapter IV estimates that 382 employee households would move closer to Universal City under Alternative 10. To the extent that such demand is not met by then-existing housing supply, a resulting increase in the number of housing units, and hence population, may occur. If, as a worst case estimate, all such employees form themselves into separate households and they are equal in size to the overall average forecasted by SCAG in 2030 (i.e., 3.0 persons/household, as assumed in the Draft EIR analysis of the Project), the resulting numerical indirect population impact of Alternative employment would total 1,146 persons (as compared with 696 for the Project).

As shown in Table V-1, an Alternative 10 indirect population impact of 1,146 persons, were they to be realized by 2030, would represent 0.3 percent of the forecasted population of the Southeast San Fernando Valley in that year (compared with 1. 7% for the Project's on-site households and indirect household demand). Alternative 10's indirect population impact also represents about 4.3 percent of the remaining population growth forecasted between 2008 and 2030 for the Southeast San Fernando Valley (compared with 26.9% for the Project).

As also shown in Table V-1, Alternative 10's indirect population impact also represents about 0.03 percent of the population forecasted for 2030 in the City of Los Angeles Subregion (compared with 0.2% for the Project), and 0.4 percent of the remaining population growth forecasted between 2008 and 2030 in that Subregion (compared with 2.4% for the Project).

c. *Conclusions Regarding Significance of Impacts*

For the reasons noted above, and in Chapter IV with regard to housing, Alternative 10, like the Project, would not induce substantial population growth, nor would it exceed the population forecast for SCAG's City of Los Angeles Subregion.

With regard to infrastructure-induced population growth, the roads planned for the Project Site are primarily for internal circulation and would not open any large undeveloped areas for new use. Similarly, utility and other infrastructure upgrades planned for the Project Site are intended primarily to meet demand. No new development specifically to meet the indirect household or commercial demand would be needed. Therefore, Alternative 10, like the Project, would not have a significant impact on population.

Table V-1
Comparison of Alternative 10 Indirect Population With Adopted SCAG Population Forecast

Projection		Population
SCAG Forecasts [a]		
SCAG City of Los Angeles Subregion 2030		4,413,000
SCAG City of Los Angeles Subregion 2008-2030 Growth		294,363
Southeast San Fernando Valley 2030		424,658
Southeast San Fernando Valley 2008-2030 Growth		26,577
Alternative 10 Population [b]		
Indirect Population		1,146
	Proposed Project [c]	7,146
	Change from Proposed Project	
	Number	(6,000)
	Percent	-84.0%
Alternative 10 Percentage of SCAG Forecasts		
Share of SCAG City of Los Angeles Subregion 2030		0.03%
Share of SCAG City of Los Angeles Subregion 2008-2030 Growth		0.39%
Share of Southeast San Fernando Valley 2030		0.27%
Share of Southeast San Fernando Valley 2008-2030 Growth		4.31%

[a] See Draft EIR analysis of Project.
[b] 382 indirect househiolds x 3.00 persons per household.
[c] Includes direct on-site population and indirect population associated with employment.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

C. CUMULATIVE IMPACTS

Table V-2 shows the cumulative population impact of indirect Alternative 10 population in combination with all other forecasted population growth for the City of Los Angeles Subregion between 2008 and 2030. The 2008-2030 forecasted population growth is used as a proxy for "related projects," because the population impacts of individual developments that may actually occur between 2008 and 2030 cannot be reasonably foreseen over the period of buildout. Table V-2 compares the resulting total of indirect population and the forecasted population growth in the Subregion with the number of people forecasted to reside in the Subregion in 2030.

Table V-2
Comparison of Alternative 10 Indirect Population With Adopted SCAG Population Forecast

Projection	Population
SCAG Forecasts [a]	
SCAG City of Los Angeles Subregion 2030	4,413,000
SCAG City of Los Angeles Subregion 2008-2030 Growth	294,363
Alternative 10 Indirect Population [b]	
Total Alternative 10 Indirect Population	1,146
"Related Project" Population	294,363
Cumulative Population	295,509
Proposed Project [c]	301,509
Change from Proposed Project	
Number	(6,000)
Percent	-2.0%
Alternative 10 Percentage of SCAG Forecasts	
Alternative 10 Share of SCAG City of Los Angeles Subregion 2030	0.03%
Alternative 10 Share of SCAG City of Los Angeles Subregion 2008-2030 Growth	0.39%
Cumulative Share of SCAG City of Los Angeles Subregion 2030	6.70%

[a] See Draft EIR analysis of Project.
[b] See Footnote [b], Table V-1.
[c] Includes population from the Project's direct on-site households and population from off-site households indirectly associated with on-site employment.
Sources: SCAG 2008 Regional Growth Forecast; HR&A Advisors, Inc.
Prepared by: HR&A Advisors, Inc.

Table V-2 shows that: (1) Alternative 10 indirect population represents 0.03 percent of the population in the Subregion in 2030 (compared with 0.16% for the Project); (2) 0.39 percent of forecasted population growth in the Subregion between 2008 and 2030 (compared with 2.43% for the Project); and (3) cumulative population (i.e., Alternative 10 indirect population plus 2008-2030 forecasted population growth in the Subregion) represents 6.7 percent of the forecasted population in the Subregion in 2030 (compared with 6.8% for the Project).

Thus, like the Project, Alternative 10's incremental population effect is not "cumulatively considerable" within the meaning of CEQA, and hence its cumulative population impact is less than significant.

D. MITIGATION MEASURES

For all of the reasons described above, Alternative 10 would not cause any significant adverse impacts on population; therefore, no mitigation measures are required or recommended.

E. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Like the Project, neither Alternative 10, nor Alternative 10 in combination with "related projects," would exceed SCAG's population forecasts for the City of Los Angeles Subregion. In addition, Alternative 10 would be consistent with adopted policies of the 1996 Regional Comprehensive Plan and Guide, the Los Angeles County General Plan and the City of Los Angeles General Plan Framework and General Plan Housing Elements. Therefore, Alternative 10, like the Project, would not result in any significant environmental impacts with respect to population.

APPENDIX A

IMPLAN Analysis Results for Alternative 10 Construction

A-1 Employment
A-2 Worker Compensation
A-3 Total Economic Output

IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
34 Construct new nonresidential commercial and h	11,047.60	0	0	11,047.60	59.6%	59.6%
369 Architectural- engineering- and related servi	0	774.3	12.9	787.1	4.2%	63.8%
413 Food services and drinking places	0	123.1	478	601.2	3.2%	67.0%
319 Wholesale trade businesses	0	337.5	216.1	553.6	3.0%	70.0%
394 Offices of physicians- dentists- and other he	0	0	259.9	259.9	1.4%	71.4%
360 Real estate establishments	0	90.9	151.5	242.4	1.3%	72.7%
382 Employment services	0	134.2	82.9	217.1	1.2%	73.9%
397 Private hospitals	0	0	199.4	199.4	1.1%	75.0%
329 Retail Stores - General merchandise	0	16.1	136.9	153	0.8%	75.8%
324 Retail Stores - Food and beverage	0	15.7	136.3	152.1	0.8%	76.6%
426 Private household operations	0	0	133.7	133.7	0.7%	77.3%
398 Nursing and residential care facilities	0	0	129.2	129.2	0.7%	78.0%
354 Monetary authorities and depository credit in	0	68.5	56.1	124.6	0.7%	78.7%
320 Retail Stores - Motor vehicle and parts	0	14.7	104.9	119.6	0.6%	79.4%
367 Legal services	0	69.3	49.3	118.6	0.6%	80.0%
335 Transport by truck	0	80.2	33.5	113.7	0.6%	80.6%
414 Automotive repair and maintenance- except car	0	62.5	48.5	111	0.6%	81.2%
388 Services to buildings and dwellings	0	65.4	44.8	110.2	0.6%	81.8%
425 Civic- social- professional- and similar orga	0	51.6	50.5	102.2	0.6%	82.3%
356 Securities- commodity contracts- investments-	0	36.9	60.5	97.4	0.5%	82.9%
400 Individual and family services	0	0	95.1	95.1	0.5%	83.4%
368 Accounting- tax preparation- bookkeeping- and	0	57.1	35.9	93	0.5%	83.9%
392 Private junior colleges- colleges- universiti	0	1.2	89.5	90.7	0.5%	84.4%
331 Retail Nonstores - Direct and electronic sale	0	8.3	75.5	83.7	0.5%	84.8%
327 Retail Stores - Clothing and clothing accesso	0	6.7	70.9	77.6	0.4%	85.2%
330 Retail Stores - Miscellaneous	0	8.5	66.7	75.1	0.4%	85.7%
381 Management of companies and enterprises	0	45.7	27.6	73.3	0.4%	86.0%
357 Insurance carriers	0	11.3	55.4	66.7	0.4%	86.4%
325 Retail Stores - Health and personal care	0	7.1	57.3	64.4	0.3%	86.8%
411 Hotels and motels- including casino hotels	0	32.6	31.1	63.6	0.3%	87.1%
396 Medical and diagnostic labs and outpatient an	0	0	61.5	61.5	0.3%	87.4%
323 Retail Stores - Building material and garden	0	5.5	52.6	58.1	0.3%	87.7%
295 Wood kitchen cabinet and countertop manufactu	0	53.8	3.3	57.1	0.3%	88.0%
399 Child day care services	0	0	56.8	56.8	0.3%	88.4%
387 Investigation and security services	0	38.3	15.4	53.7	0.3%	88.6%
355 Nondepository credit intermediation and relat	0	16.7	35.3	52	0.3%	88.9%
374 Management- scientific- and technical consult	0	30.2	21.6	51.8	0.3%	89.2%
39 Maint & repair construct of nonresident struc	0	31.9	19.4	51.3	0.3%	89.5%
351 Telecommunications	0	25.6	24.9	50.4	0.3%	89.8%
99 Wood windows and doors and millwork manufactu	0	47.2	1.1	48.3	0.3%	90.0%
419 Personal care services	0	0	45.4	45.4	0.2%	90.3%
395 Home health care services	0	0	44.2	44.2	0.2%	90.5%
393 Other private educational services	0	0.9	43.2	44.1	0.2%	90.7%
417 Commercial and industrial machinery and equip	0	38.2	5.6	43.8	0.2%	91.0%
391 Private elementary and secondary schools	0	0	43.7	43.7	0.2%	91.2%
386 Business support services	0	30.1	12.9	43	0.2%	91.4%
427 US Postal Service	0	18.2	24	42.2	0.2%	91.7%
149 Other plastics product manufacturing	0	34.4	5	39.4	0.2%	91.9%
401 Community food- housing- and other relief ser	0	0	39	39	0.2%	92.1%
302 Showcase- partition- shelving- and locker man	0	36.7	0.9	37.6	0.2%	92.3%
409 Amusement parks- arcades- and gambling indust	0	0	36.3	36.3	0.2%	92.5%
365 Commercial and industrial machinery and equip	0	34	2.2	36.2	0.2%	92.7%
328 Retail Stores - Sporting goods- hobby- book a	0	4.2	31.4	35.6	0.2%	92.9%
321 Retail Stores - Furniture and home furnishing	0	8	27.5	35.5	0.2%	93.1%
336 Transit and ground passenger transportation	0	11.1	22.2	33.3	0.2%	93.2%
372 Computer systems design services	0	24.2	9.1	33.3	0.2%	93.4%
338 Scenic and sightseeing transportation and sup	0	18.9	14.3	33.2	0.2%	93.6%
322 Retail Stores - Electronics and appliances	0	4.6	27.9	32.5	0.2%	93.8%
339 Couriers and messengers	0	16.7	15.5	32.2	0.2%	94.0%
407 Fitness and recreational sports centers	0	7.6	24.2	31.8	0.2%	94.1%
424 Grantmaking- giving- and social advocacy orga	0	0	30.5	30.5	0.2%	94.3%
432 Other state and local government enterprises	0	5.2	25.2	30.4	0.2%	94.4%
377 Advertising and related services	0	13.7	15.9	29.6	0.2%	94.6%
358 Insurance agencies- brokerages- and related a	0	5.2	23.1	28.4	0.2%	94.8%
431 * Not unique commod (S&LG electricity)	0	11.6	15.2	26.8	0.1%	94.9%
326 Retail Stores - Gasoline stations	0	2.1	22.9	25	0.1%	95.0%
340 Warehousing and storage	0	11.1	13.2	24.4	0.1%	95.2%
159 Glass product manufacturing made of purchased	0	22.8	1.3	24.1	0.1%	95.3%
421 Dry-cleaning and laundry services	0	2.3	21.6	24	0.1%	95.4%
376 Scientific research and development services	0	11.4	12.4	23.8	0.1%	95.6%
384 Office administrative services	0	14.6	8.4	22.9	0.1%	95.7%
422 Other personal services	0	1.3	21	22.3	0.1%	95.8%
403 Spectator sports companies	0	6.8	15.2	22	0.1%	95.9%
All Other Sectors	0.00	372.60	383.70	756.30	4.1%	100.0%
Total	**11,047.60**	**3,137.10**	**4,365.90**	**18,550.60**	**100.0%**	

	IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
34	Construct new nonresidential commercial and h	534,842,016	0	0	534,842,016	60.9%	60.9%
369	Architectural- engineering- and related servi	0	49,387,208	820,049	50,207,256	5.7%	66.6%
319	Wholesale trade businesses	0	20,178,704	12,919,539	33,098,244	3.8%	70.4%
394	Offices of physicians- dentists- and other he	0	46	14,117,061	14,117,107	1.6%	72.0%
397	Private hospitals	0	57	14,083,311	14,083,368	1.6%	73.6%
413	Food services and drinking places	0	2,657,271	10,315,286	12,972,556	1.5%	75.1%
356	Securities- commodity contracts- investments-	0	3,678,367	6,038,945	9,717,311	1.1%	76.2%
354	Monetary authorities and depository credit in	0	4,634,823	3,790,447	8,425,269	1.0%	77.1%
381	Management of companies and enterprises	0	5,241,184	3,159,335	8,400,519	1.0%	78.1%
367	Legal services	0	4,858,167	3,452,177	8,310,344	0.9%	79.0%
320	Retail Stores - Motor vehicle and parts	0	770,044	5,506,752	6,276,796	0.7%	79.8%
382	Employment services	0	3,414,513	2,109,809	5,524,322	0.6%	80.4%
357	Insurance carriers	0	884,820	4,328,755	5,213,574	0.6%	81.0%
324	Retail Stores - Food and beverage	0	482,583	4,181,968	4,664,551	0.5%	81.5%
335	Transport by truck	0	2,980,602	1,245,237	4,225,840	0.5%	82.0%
425	Civic- social- professional- and similar orga	0	2,115,738	2,068,694	4,184,432	0.5%	82.5%
355	Nondepository credit intermediation and relat	0	1,337,378	2,835,527	4,172,906	0.5%	82.9%
329	Retail Stores - General merchandise	0	415,361	3,540,084	3,955,445	0.5%	83.4%
351	Telecommunications	0	1,970,486	1,915,449	3,885,936	0.4%	83.8%
368	Accounting- tax preparation- bookkeeping- and	0	2,303,975	1,449,214	3,753,189	0.4%	84.3%
427	US Postal Service	0	1,533,012	2,018,592	3,551,604	0.4%	84.7%
431	* Not unique commod (S&LG electricity)	0	1,534,857	1,998,242	3,533,099	0.4%	85.1%
360	Real estate establishments	0	1,284,774	2,141,592	3,426,367	0.4%	85.5%
392	Private junior colleges- colleges- universiti	0	41,633	3,233,238	3,274,870	0.4%	85.8%
414	Automotive repair and maintenance- except car	0	1,708,046	1,325,757	3,033,803	0.3%	86.2%
374	Management- scientific- and technical consult	0	1,711,250	1,223,220	2,934,470	0.3%	86.5%
388	Services to buildings and dwellings	0	1,656,073	1,134,780	2,790,853	0.3%	86.8%
396	Medical and diagnostic labs and outpatient an	0	1,307	2,738,100	2,739,407	0.3%	87.1%
432	Other state and local government enterprises	0	450,164	2,201,198	2,651,363	0.3%	87.5%
295	Wood kitchen cabinet and countertop manufactu	0	2,424,471	150,762	2,575,233	0.3%	87.7%
39	Maint & repair construct of nonresident struc	0	1,563,272	949,101	2,512,373	0.3%	88.0%
398	Nursing and residential care facilities	0	0	2,472,816	2,472,816	0.3%	88.3%
325	Retail Stores - Health and personal care	0	262,890	2,126,878	2,389,768	0.3%	88.6%
338	Scenic and sightseeing transportation and sup	0	1,330,325	1,003,624	2,333,949	0.3%	88.8%
411	Hotels and motels- including casino hotels	0	1,142,584	1,090,097	2,232,681	0.3%	89.1%
400	Individual and family services	0	0	2,199,169	2,199,169	0.3%	89.4%
323	Retail Stores - Building material and garden	0	204,694	1,970,169	2,174,864	0.2%	89.6%
149	Other plastics product manufacturing	0	1,816,134	264,150	2,080,284	0.2%	89.8%
327	Retail Stores - Clothing and clothing accesso	0	172,640	1,827,076	1,999,716	0.2%	90.1%
358	Insurance agencies- brokerages- and related a	0	357,744	1,580,789	1,938,534	0.2%	90.3%
365	Commercial and industrial machinery and equip	0	1,809,683	116,963	1,926,646	0.2%	90.5%
417	Commercial and industrial machinery and equip	0	1,673,467	247,439	1,920,906	0.2%	90.7%
31	Electric power generation- transmission- and	0	792,444	1,041,702	1,834,146	0.2%	90.9%
117	Asphalt shingle and coating materials manufac	0	1,806,341	26,606	1,832,947	0.2%	91.1%
302	Showcase- partition- shelving- and locker man	0	1,743,584	43,161	1,786,744	0.2%	91.3%
384	Office administrative services	0	1,096,496	631,521	1,728,016	0.2%	91.5%
322	Retail Stores - Electronics and appliances	0	243,442	1,471,987	1,715,429	0.2%	91.7%
372	Computer systems design services	0	1,221,188	460,088	1,681,275	0.2%	91.9%
99	Wood windows and doors and millwork manufactu	0	1,625,060	37,818	1,662,878	0.2%	92.1%
115	Petroleum refineries	0	1,103,649	536,501	1,640,150	0.2%	92.3%
377	Advertising and related services	0	756,357	881,585	1,637,943	0.2%	92.5%
20	Extraction of oil and natural gas	0	1,059,245	577,942	1,637,187	0.2%	92.7%
424	Grantmaking- giving- and social advocacy orga	0	308	1,596,192	1,596,500	0.2%	92.9%
386	Business support services	0	1,106,061	473,234	1,579,295	0.2%	93.0%
391	Private elementary and secondary schools	0	0	1,577,518	1,577,518	0.2%	93.2%
330	Retail Stores - Miscellaneous	0	171,418	1,352,961	1,524,378	0.2%	93.4%
376	Scientific research and development services	0	717,537	782,599	1,500,136	0.2%	93.6%
332	Transport by air	0	510,448	937,859	1,448,306	0.2%	93.7%
395	Home health care services	0	0	1,341,690	1,341,690	0.2%	93.9%
346	Motion picture and video industries	0	220,574	1,104,741	1,325,314	0.2%	94.0%
321	Retail Stores - Furniture and home furnishing	0	285,067	974,489	1,259,557	0.1%	94.2%
387	Investigation and security services	0	883,010	355,234	1,238,245	0.1%	94.3%
331	Retail Nonstores - Direct and electronic sale	0	121,870	1,111,102	1,232,972	0.1%	94.5%
393	Other private educational services	0	24,089	1,182,123	1,206,212	0.1%	94.6%
340	Warehousing and storage	0	538,636	640,852	1,179,488	0.1%	94.7%
339	Couriers and messengers	0	603,191	558,010	1,161,200	0.1%	94.9%
409	Amusement parks- arcades- and gambling indust	0	602	1,149,067	1,149,669	0.1%	95.0%
159	Glass product manufacturing made of purchased	0	1,067,087	59,749	1,126,837	0.1%	95.1%
426	Private household operations	0	0	1,075,313	1,075,313	0.1%	95.2%
399	Child day care services	0	0	1,025,235	1,025,235	0.1%	95.4%
336	Transit and ground passenger transportation	0	331,997	664,136	996,133	0.1%	95.5%
328	Retail Stores - Sporting goods- hobby- book a	0	112,314	833,385	945,699	0.1%	95.6%
401	Community food- housing- and other relief ser	0	1	916,637	916,638	0.1%	95.7%
	All Other Sectors	0	17,403,567	20,481,471	37,885,037	4.3%	100.0%
	Total	**534,842,016**	**165,535,930**	**177,793,899**	**878,171,843**	**100.0%**	

	IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
34	Construct new nonresidential commercial and h	1,619,319,040	0	0	1,619,319,040	58.2%	58.2%
369	Architectural- engineering- and related servi	0	104,858,960	1,741,129	106,600,088	3.8%	62.0%
319	Wholesale trade businesses	0	58,991,120	37,769,424	96,760,544	3.5%	65.5%
361	Imputed rental activity for owner-occupied dw	0	0	68,272,376	68,272,376	2.5%	67.9%
115	Petroleum refineries	0	38,918,364	18,918,804	57,837,168	2.1%	70.0%
360	Real estate establishments	0	18,093,984	30,160,882	48,254,864	1.7%	71.7%
413	Food services and drinking places	0	7,605,977	29,525,722	37,131,700	1.3%	73.1%
354	Monetary authorities and depository credit in	0	18,181,770	14,869,400	33,051,170	1.2%	74.3%
394	Offices of physicians- dentists- and other he	0	103	31,244,516	31,244,618	1.1%	75.4%
397	Private hospitals	0	102	25,180,172	25,180,274	0.9%	76.3%
356	Securities- commodity contracts- investments-	0	8,819,906	14,480,048	23,299,954	0.8%	77.1%
351	Telecommunications	0	11,633,872	11,308,930	22,942,802	0.8%	78.0%
367	Legal services	0	13,198,075	9,378,452	22,576,528	0.8%	78.8%
357	Insurance carriers	0	3,555,283	17,393,316	20,948,598	0.8%	79.5%
381	Management of companies and enterprises	0	10,929,432	6,588,157	17,517,588	0.6%	80.1%
335	Transport by truck	0	11,751,294	4,909,462	16,660,756	0.6%	80.7%
320	Retail Stores - Motor vehicle and parts	0	1,713,031	12,250,257	13,963,288	0.5%	81.2%
365	Commercial and industrial machinery and equip	0	11,797,543	762,497	12,560,040	0.5%	81.7%
355	Nondepository credit intermediation and relat	0	3,805,221	8,067,880	11,873,100	0.4%	82.1%
20	Extraction of oil and natural gas	0	7,434,220	4,056,236	11,490,456	0.4%	82.5%
324	Retail Stores - Food and beverage	0	1,187,692	10,292,302	11,479,994	0.4%	83.0%
414	Automotive repair and maintenance- except car	0	6,061,576	4,704,896	10,766,471	0.4%	83.3%
31	Electric power generation- transmission- and	0	4,541,638	5,970,182	10,511,820	0.4%	83.7%
396	Medical and diagnostic labs and outpatient an	0	4,586	9,604,864	9,609,450	0.3%	84.1%
144	Plastics pipe and pipe fitting manufacturing	0	9,188,309	221,776	9,410,085	0.3%	84.4%
368	Accounting- tax preparation- bookkeeping- and	0	5,691,758	3,580,150	9,271,908	0.3%	84.7%
329	Retail Stores - General merchandise	0	934,313	7,963,063	8,897,376	0.3%	85.1%
149	Other plastics product manufacturing	0	7,648,692	1,112,472	8,761,164	0.3%	85.4%
99	Wood windows and doors and millwork manufactu	0	8,479,837	197,341	8,677,178	0.3%	85.7%
295	Wood kitchen cabinet and countertop manufactu	0	7,777,357	483,623	8,260,980	0.3%	86.0%
432	Other state and local government enterprises	0	1,329,848	6,502,647	7,832,495	0.3%	86.3%
349	Cable and other subscription programming	0	3,263,561	4,374,000	7,637,560	0.3%	86.5%
380	All other miscellaneous professional- scienti	0	5,391,490	2,234,958	7,626,448	0.3%	86.8%
32	Natural gas distribution	0	2,964,226	4,523,888	7,488,114	0.3%	87.1%
382	Employment services	0	4,591,211	2,836,884	7,428,095	0.3%	87.3%
374	Management- scientific- and technical consult	0	4,266,504	3,049,745	7,316,249	0.3%	87.6%
117	Asphalt shingle and coating materials manufac	0	7,082,228	104,317	7,186,545	0.3%	87.9%
411	Hotels and motels- including casino hotels	0	3,583,280	3,418,676	7,001,956	0.3%	88.1%
388	Services to buildings and dwellings	0	4,145,096	2,840,316	6,985,412	0.3%	88.4%
302	Showcase- partition- shelving- and locker man	0	6,649,193	164,595	6,813,788	0.2%	88.6%
425	Civic- social- professional- and similar orga	0	3,375,278	3,300,228	6,675,505	0.2%	88.9%
431	* Not unique commod (S&LG electricity)	0	2,886,678	3,758,188	6,644,866	0.2%	89.1%
392	Private junior colleges- colleges- universiti	0	84,245	6,542,533	6,626,778	0.2%	89.3%
327	Retail Stores - Clothing and clothing accesso	0	571,669	6,050,063	6,621,732	0.2%	89.6%
331	Retail Nonstores - Direct and electronic sale	0	649,203	5,918,868	6,568,071	0.2%	89.8%
417	Commercial and industrial machinery and equip	0	5,638,410	833,694	6,472,104	0.2%	90.0%
39	Maint & repair construct of nonresident struc	0	3,723,737	2,260,774	5,984,511	0.2%	90.2%
384	Office administrative services	0	3,739,510	2,153,750	5,893,260	0.2%	90.5%
323	Retail Stores - Building material and garden	0	530,088	5,102,072	5,632,160	0.2%	90.7%
325	Retail Stores - Health and personal care	0	598,528	4,842,310	5,440,838	0.2%	90.9%
159	Glass product manufacturing made of purchased	0	5,119,409	286,651	5,406,061	0.2%	91.1%
359	Funds- trusts- and other financial vehicles	0	106,853	5,088,073	5,194,926	0.2%	91.2%
398	Nursing and residential care facilities	0	0	5,110,787	5,110,787	0.2%	91.4%
332	Transport by air	0	1,787,786	3,284,743	5,072,529	0.2%	91.6%
228	Material handling equipment manufacturing	0	4,995,886	15,121	5,011,008	0.2%	91.8%
427	US Postal Service	0	2,013,362	2,651,092	4,664,454	0.2%	92.0%
377	Advertising and related services	0	2,066,700	2,408,878	4,475,578	0.2%	92.1%
358	Insurance agencies- brokerages- and related a	0	825,650	3,648,355	4,474,005	0.2%	92.3%
338	Scenic and sightseeing transportation and sup	0	2,507,852	1,891,976	4,399,828	0.2%	92.4%
409	Amusement parks- arcades- and gambling indust	0	2,295	4,382,837	4,385,132	0.2%	92.6%
422	Other personal services	0	243,556	3,972,218	4,215,775	0.2%	92.7%
400	Individual and family services	0	0	4,207,369	4,207,369	0.2%	92.9%
362	Automotive equipment rental and leasing	0	1,808,012	2,359,324	4,167,336	0.1%	93.0%
330	Retail Stores - Miscellaneous	0	467,743	3,691,795	4,159,538	0.1%	93.2%
372	Computer systems design services	0	2,915,741	1,098,518	4,014,259	0.1%	93.3%
321	Retail Stores - Furniture and home furnishing	0	885,705	3,027,738	3,913,443	0.1%	93.5%
326	Retail Stores - Gasoline stations	0	303,679	3,284,193	3,587,872	0.1%	93.6%
386	Business support services	0	2,454,150	1,050,021	3,504,171	0.1%	93.7%
322	Retail Stores - Electronics and appliances	0	483,538	2,923,747	3,407,285	0.1%	93.9%
376	Scientific research and development services	0	1,593,880	1,738,405	3,332,286	0.1%	94.0%
346	Motion picture and video industries	0	553,358	2,771,487	3,324,845	0.1%	94.1%
59	Animal (except poultry) slaughtering- renderi	0	80,839	3,236,406	3,317,245	0.1%	94.2%
146	Polystyrene foam product manufacturing	0	2,821,754	207,881	3,029,635	0.1%	94.3%
	All Other Sectors	0	64,820,750	93,267,017	158,087,769	5.7%	100.0%
	Total	**1,619,319,040**	**546,726,496**	**617,425,467**	**2,783,471,001**	**100.0%**	

APPENDIX B
IMPLAN Analysis Results for Annual Operations of Alternative 10

B-1 Employment
B-2 Worker Compensation
B-3 Total Economic Output

IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
346 Motion picture and video industries	3,009.00	333.5	7.6	3,350.00	28.5%	28.5%
409 Amusement parks- arcades- and gambling indust	1,302.00	0	22.2	1,324.30	11.3%	39.7%
411 Hotels and motels- including casino hotels	848	23.3	19	890.3	7.6%	47.3%
377 Advertising and related services	332	114	9.8	455.8	3.9%	51.2%
368 Accounting- tax preparation- bookkeeping- and	332	100.1	22	454.1	3.9%	55.0%
374 Management- scientific- and technical consult	332	104.4	13.2	449.6	3.8%	58.8%
413 Food services and drinking places	0	145.2	292.6	437.8	3.7%	62.6%
382 Employment services	0	309.4	50.8	360.1	3.1%	65.6%
360 Real estate establishments	0	206.6	92.8	299.4	2.5%	68.2%
329 Retail Stores - General merchandise	193	1.9	83.8	278.7	2.4%	70.5%
319 Wholesale trade businesses	0	39.3	132.3	171.5	1.5%	72.0%
394 Offices of physicians- dentists- and other he	0	0	159.1	159.1	1.4%	73.3%
388 Services to buildings and dwellings	0	110.6	27.4	138	1.2%	74.5%
397 Private hospitals	0	0	122.1	122.1	1.0%	75.5%
367 Legal services	0	75.3	30.2	105.5	0.9%	76.4%
324 Retail Stores - Food and beverage	0	1.5	83.5	84.9	0.7%	77.2%
381 Management of companies and enterprises	0	65.2	16.9	82.1	0.7%	77.9%
426 Private household operations	0	0	81.8	81.8	0.7%	78.6%
398 Nursing and residential care facilities	0	0	79.1	79.1	0.7%	79.2%
427 US Postal Service	0	63.8	14.7	78.5	0.7%	79.9%
354 Monetary authorities and depository credit in	0	40.6	34.3	74.9	0.6%	80.5%
320 Retail Stores - Motor vehicle and parts	0	1.4	64.2	65.6	0.6%	81.1%
357 Insurance carriers	0	30.4	33.9	64.3	0.5%	81.6%
400 Individual and family services	0	0	58.2	58.2	0.5%	82.1%
356 Securities- commodity contracts- investments-	0	19	37	56.1	0.5%	82.6%
392 Private junior colleges- colleges- universiti	0	0.4	54.8	55.2	0.5%	83.1%
399 Child day care services	20	0	34.8	54.8	0.5%	83.5%
414 Automotive repair and maintenance- except car	0	24.8	29.7	54.5	0.5%	84.0%
39 Maint & repair construct of nonresident struc	0	41.1	11.9	52.9	0.4%	84.5%
387 Investigation and security services	0	43.4	9.4	52.9	0.4%	84.9%
405 Independent artists- writers- and performers	0	51.5	1.1	52.6	0.4%	85.4%
425 Civic- social- professional- and similar orga	0	20.2	30.9	51.1	0.4%	85.8%
339 Couriers and messengers	0	40.3	9.5	49.8	0.4%	86.2%
335 Transport by truck	0	27.3	20.5	47.8	0.4%	86.6%
331 Retail Nonstores - Direct and electronic sale	0	0.8	46.2	47	0.4%	87.0%
327 Retail Stores - Clothing and clothing accesso	0	0.6	43.4	44	0.4%	87.4%
355 Nondepository credit intermediation and relat	0	21.2	21.6	42.8	0.4%	87.8%
330 Retail Stores - Miscellaneous	0	0.8	40.8	41.6	0.4%	88.1%
384 Office administrative services	0	36.1	5.1	41.2	0.4%	88.5%
386 Business support services	0	30.4	7.9	38.3	0.3%	88.8%
396 Medical and diagnostic labs and outpatient an	0	0.1	37.6	37.7	0.3%	89.1%
325 Retail Stores - Health and personal care	0	0.7	35.1	35.8	0.3%	89.4%
404 Promoters of performing arts and sports and a	0	28.9	5.8	34.7	0.3%	89.7%
351 Telecommunications	0	19.3	15.2	34.6	0.3%	90.0%
403 Spectator sports companies	0	24.3	9.3	33.6	0.3%	90.3%
323 Retail Stores - Building material and garden	0	0.5	32.2	32.7	0.3%	90.6%
372 Computer systems design services	0	27.1	5.6	32.7	0.3%	90.8%
380 All other miscellaneous professional- scienti	0	27.9	3.9	31.8	0.3%	91.1%
375 Environmental and other technical consulting	0	28.1	3.5	31.6	0.3%	91.4%
340 Warehousing and storage	0	20.5	8.1	28.6	0.2%	91.6%
419 Personal care services	0	0	27.8	27.8	0.2%	91.9%
393 Other private educational services	0	0.8	26.4	27.3	0.2%	92.1%
358 Insurance agencies- brokerages- and related a	0	13.1	14.2	27.2	0.2%	92.3%
395 Home health care services	0	0	27.1	27.1	0.2%	92.5%
369 Architectural- engineering- and related servi	0	19.1	7.9	27	0.2%	92.8%
336 Transit and ground passenger transportation	0	13.2	13.6	26.8	0.2%	93.0%
391 Private elementary and secondary schools	0	0	26.8	26.8	0.2%	93.2%
431 * Not unique commod (S&LG electricity)	0	15.9	9.3	25.2	0.2%	93.4%
362 Automotive equipment rental and leasing	0	17.5	7	24.6	0.2%	93.7%
432 Other state and local government enterprises	0	9.1	15.4	24.5	0.2%	93.9%
338 Scenic and sightseeing transportation and sup	0	15.4	8.7	24.1	0.2%	94.1%
421 Dry-cleaning and laundry services	0	10.9	13.3	24.1	0.2%	94.3%
401 Community food- housing- and other relief ser	0	0	23.9	23.9	0.2%	94.5%
348 Radio and television broadcasting	0	21.6	2	23.6	0.2%	94.7%
113 Printing	0	20.7	2.6	23.3	0.2%	94.9%
349 Cable and other subscription programming	0	21.2	2.1	23.3	0.2%	95.1%
407 Fitness and recreational sports centers	0	5	14.8	19.8	0.2%	95.2%
328 Retail Stores - Sporting goods- hobby- book a	0	0.4	19.2	19.6	0.2%	95.4%
424 Grantmaking- giving- and social advocacy orga	0	0	18.7	18.7	0.2%	95.6%
417 Commercial and industrial machinery and equip	0	14.5	3.5	18	0.2%	95.7%
321 Retail Stores - Furniture and home furnishing	0	0.8	16.8	17.6	0.1%	95.9%
322 Retail Stores - Electronics and appliances	0	0.4	17.1	17.5	0.1%	96.0%
422 Other personal services	0	3.7	12.9	16.6	0.1%	96.2%
All Other Sectors	0.00	222.40	229.20	451.80	3.8%	100.0%
Total	**6,368.00**	**2,727.50**	**2,672.70**	**11,768.30**	**100.0%**	

IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
346 Motion picture and video industries	269,314,080	29,846,672	676,294	299,837,056	46.3%	46.3%
409 Amusement parks- arcades- and gambling indust	41,189,796	776	703,445	41,894,016	6.5%	52.8%
411 Hotels and motels- including casino hotels	29,765,624	818,255	667,320	31,251,198	4.8%	57.6%
374 Management- scientific- and technical consult	18,812,454	5,914,938	748,846	25,476,238	3.9%	61.5%
377 Advertising and related services	18,372,090	6,311,019	539,677	25,222,784	3.9%	65.4%
368 Accounting- tax preparation- bookkeeping- and	13,402,962	4,040,025	887,202	18,330,190	2.8%	68.2%
319 Wholesale trade businesses	0	2,347,092	7,908,465	10,255,556	1.6%	69.8%
413 Food services and drinking places	0	3,133,244	6,314,587	9,447,831	1.5%	71.3%
381 Management of companies and enterprises	0	7,473,585	1,934,142	9,407,727	1.5%	72.7%
382 Employment services	0	7,871,134	1,291,623	9,162,757	1.4%	74.1%
394 Offices of physicians- dentists- and other he	0	163	8,642,658	8,642,821	1.3%	75.5%
397 Private hospitals	0	200	8,622,712	8,622,912	1.3%	76.8%
367 Legal services	0	5,275,279	2,113,474	7,388,753	1.1%	78.0%
329 Retail Stores - General merchandise	4,991,100	48,444	2,166,947	7,206,490	1.1%	79.1%
427 US Postal Service	0	5,370,467	1,235,736	6,606,203	1.0%	80.1%
356 Securities- commodity contracts- investments-	0	1,900,043	3,696,978	5,597,021	0.9%	80.9%
354 Monetary authorities and depository credit in	0	2,744,204	2,320,483	5,064,686	0.8%	81.7%
357 Insurance carriers	0	2,375,247	2,649,834	5,025,081	0.8%	82.5%
360 Real estate establishments	0	2,920,691	1,311,314	4,232,006	0.7%	83.2%
405 Independent artists- writers- and performers	0	4,121,303	89,144	4,210,447	0.7%	83.8%
388 Services to buildings and dwellings	0	2,802,889	694,686	3,497,574	0.5%	84.4%
320 Retail Stores - Motor vehicle and parts	0	73,232	3,370,778	3,444,010	0.5%	84.9%
355 Nondepository credit intermediation and relat	0	1,699,442	1,735,785	3,435,227	0.5%	85.4%
431 * Not unique commod (S&LG electricity)	0	2,102,909	1,223,446	3,326,354	0.5%	85.9%
348 Radio and television broadcasting	0	2,884,691	264,653	3,149,344	0.5%	86.4%
384 Office administrative services	0	2,720,240	386,616	3,106,855	0.5%	86.9%
351 Telecommunications	0	1,489,445	1,172,701	2,662,146	0.4%	87.3%
324 Retail Stores - Food and beverage	0	45,894	2,559,854	2,605,748	0.4%	87.7%
39 Maint & repair construct of nonresident struc	0	2,011,626	581,048	2,592,674	0.4%	88.1%
432 Other state and local government enterprises	0	793,024	1,347,631	2,140,656	0.3%	88.4%
425 Civic- social- professional- and similar orga	0	828,452	1,266,411	2,094,863	0.3%	88.8%
392 Private junior colleges- colleges- universiti	0	14,339	1,979,315	1,993,654	0.3%	89.1%
349 Cable and other subscription programming	0	1,809,339	181,392	1,990,731	0.3%	89.4%
358 Insurance agencies- brokerages- and related a	0	894,378	967,677	1,862,056	0.3%	89.7%
339 Couriers and messengers	0	1,451,448	341,593	1,793,041	0.3%	89.9%
335 Transport by truck	0	1,014,347	762,340	1,776,687	0.3%	90.2%
369 Architectural- engineering- and related servi	0	1,217,734	502,038	1,719,772	0.3%	90.5%
31 Electric power generation- transmission- and	0	1,079,219	637,793	1,717,012	0.3%	90.7%
338 Scenic and sightseeing transportation and sup	0	1,078,753	614,400	1,693,153	0.3%	91.0%
396 Medical and diagnostic labs and outpatient an	0	4,573	1,676,392	1,680,965	0.3%	91.3%
372 Computer systems design services	0	1,367,643	281,658	1,649,302	0.3%	91.5%
398 Nursing and residential care facilities	0	0	1,514,045	1,514,045	0.2%	91.8%
414 Automotive repair and maintenance- except car	0	678,704	811,600	1,490,305	0.2%	92.0%
386 Business support services	0	1,115,890	289,703	1,405,593	0.2%	92.2%
340 Warehousing and storage	0	992,407	392,294	1,384,701	0.2%	92.4%
400 Individual and family services	0	0	1,346,417	1,346,417	0.2%	92.6%
325 Retail Stores - Health and personal care	0	25,001	1,301,898	1,326,899	0.2%	92.8%
375 Environmental and other technical consulting	0	1,147,531	144,808	1,292,339	0.2%	93.0%
323 Retail Stores - Building material and garden	0	19,467	1,205,974	1,225,441	0.2%	93.2%
387 Investigation and security services	0	1,002,007	217,470	1,219,477	0.2%	93.4%
113 Printing	0	1,082,748	136,111	1,218,859	0.2%	93.6%
327 Retail Stores - Clothing and clothing accesso	0	16,418	1,118,384	1,134,802	0.2%	93.8%
380 All other miscellaneous professional- scienti	0	993,703	139,700	1,133,404	0.2%	93.9%
404 Promoters of performing arts and sports and a	0	884,210	177,221	1,061,431	0.2%	94.1%
342 Periodical publishers	0	888,147	147,164	1,035,310	0.2%	94.3%
257 Software- audio- and video media for reproduc	0	982,654	7,077	989,731	0.2%	94.4%
399 Child day care services	361,042	0	627,658	988,701	0.2%	94.6%
424 Grantmaking- giving- and social advocacy orga	0	175	977,247	977,422	0.2%	94.7%
391 Private elementary and secondary schools	0	0	965,548	965,548	0.1%	94.9%
332 Transport by air	0	390,592	574,125	964,717	0.1%	95.0%
322 Retail Stores - Electronics and appliances	0	23,152	901,029	924,181	0.1%	95.2%
376 Scientific research and development services	0	373,843	479,080	852,923	0.1%	95.3%
403 Spectator sports companies	0	614,746	235,892	850,638	0.1%	95.4%
330 Retail Stores - Miscellaneous	0	16,302	828,170	844,472	0.1%	95.6%
395 Home health care services	0	0	821,448	821,448	0.1%	95.7%
336 Transit and ground passenger transportation	0	395,753	406,626	802,379	0.1%	95.8%
417 Commercial and industrial machinery and equip	0	635,617	151,478	787,095	0.1%	95.9%
390 Waste management and remediation services	0	481,583	289,852	771,435	0.1%	96.0%
393 Other private educational services	0	22,587	723,607	746,194	0.1%	96.2%
362 Automotive equipment rental and leasing	0	531,985	213,237	745,222	0.1%	96.3%
350 Internet publishing and broadcasting	0	655,179	81,598	736,777	0.1%	96.4%
331 Retail Nonstores - Direct and electronic sale	0	11,590	680,125	691,715	0.1%	96.5%
426 Private household operations	0	0	658,224	658,224	0.1%	96.6%
All Other Sectors	0	8,817,733	13,209,088	22,026,823	3.4%	100.0%
Total	**396,209,148**	**142,696,122**	**108,842,986**	**647,748,265**	**100.0%**	

IMPLAN Industry Sector	Direct	Indirect	Induced	Total	% Total	Cum %
346 Motion picture and video industries	675,634,048	74,876,992	1,696,634	752,207,680	39.6%	39.6%
409 Amusement parks- arcades- and gambling indust	157,108,416	2,960	2,683,118	159,794,496	8.4%	48.0%
411 Hotels and motels- including casino hotels	93,348,560	2,566,144	2,092,795	98,007,496	5.2%	53.2%
377 Advertising and related services	50,200,608	17,244,472	1,474,634	68,919,712	3.6%	56.8%
374 Management- scientific- and technical consult	46,903,396	14,747,180	1,867,030	63,517,608	3.3%	60.1%
360 Real estate establishments	0	41,133,244	18,467,756	59,601,000	3.1%	63.3%
368 Accounting- tax preparation- bookkeeping- and	33,110,782	9,980,510	2,191,751	45,283,044	2.4%	65.6%
361 Imputed rental activity for owner-occupied dw	0	0	41,791,300	41,791,300	2.2%	67.8%
319 Wholesale trade businesses	0	6,861,569	23,119,878	29,981,446	1.6%	69.4%
349 Cable and other subscription programming	0	26,708,708	2,677,634	29,386,342	1.5%	71.0%
413 Food services and drinking places	0	8,968,368	18,074,412	27,042,780	1.4%	72.4%
357 Insurance carriers	0	9,543,952	10,647,265	20,191,216	1.1%	73.4%
367 Legal services	0	14,331,235	5,741,629	20,072,864	1.1%	74.5%
354 Monetary authorities and depository credit in	0	10,765,132	9,102,933	19,868,064	1.0%	75.5%
381 Management of companies and enterprises	0	15,584,654	4,033,262	19,617,916	1.0%	76.6%
394 Offices of physicians- dentists- and other he	0	360	19,128,320	19,128,680	1.0%	77.6%
115 Petroleum refineries	0	4,988,622	11,582,277	16,570,899	0.9%	78.5%
329 Retail Stores - General merchandise	11,226,979	108,969	4,874,329	16,210,277	0.9%	79.3%
351 Telecommunications	0	8,793,771	6,923,699	15,717,470	0.8%	80.1%
397 Private hospitals	0	357	15,416,927	15,417,284	0.8%	81.0%
356 Securities- commodity contracts- investments-	0	4,555,881	8,864,533	13,420,414	0.7%	81.7%
382 Employment services	0	10,583,658	1,736,737	12,320,395	0.6%	82.3%
405 Independent artists- writers- and performers	0	11,138,283	240,921	11,379,204	0.6%	82.9%
380 All other miscellaneous professional- scienti	0	9,732,076	1,368,187	11,100,262	0.6%	83.5%
384 Office administrative services	0	9,277,157	1,318,522	10,595,679	0.6%	84.0%
31 Electric power generation- transmission- and	0	6,185,197	3,655,307	9,840,504	0.5%	84.6%
355 Nondepository credit intermediation and relat	0	4,835,394	4,938,801	9,774,194	0.5%	85.1%
388 Services to buildings and dwellings	0	7,015,538	1,738,776	8,754,313	0.5%	85.5%
427 US Postal Service	0	7,053,235	1,622,938	8,676,172	0.5%	86.0%
320 Retail Stores - Motor vehicle and parts	0	162,911	7,498,594	7,661,506	0.4%	86.4%
348 Radio and television broadcasting	0	6,976,549	640,055	7,616,604	0.4%	86.8%
335 Transport by truck	0	3,999,155	3,005,594	7,004,749	0.4%	87.2%
324 Retail Stores - Food and beverage	0	112,951	6,300,094	6,413,045	0.3%	87.5%
432 Other state and local government enterprises	0	2,342,705	3,981,091	6,323,795	0.3%	87.8%
431 * Not unique commod (S&LG electricity)	0	3,955,040	2,300,992	6,256,032	0.3%	88.2%
39 Maint & repair construct of nonresident struc	0	4,791,724	1,384,065	6,175,788	0.3%	88.5%
396 Medical and diagnostic labs and outpatient an	0	16,041	5,880,544	5,896,585	0.3%	88.8%
414 Automotive repair and maintenance- except car	0	2,408,611	2,880,238	5,288,848	0.3%	89.1%
32 Natural gas distribution	0	2,505,984	2,769,726	5,275,710	0.3%	89.4%
362 Automotive equipment rental and leasing	0	3,603,337	1,444,334	5,047,670	0.3%	89.6%
358 Insurance agencies- brokerages- and related a	0	2,064,165	2,233,334	4,297,499	0.2%	89.9%
392 Private junior colleges- colleges- universiti	0	29,015	4,005,191	4,034,207	0.2%	90.1%
339 Couriers and messengers	0	3,225,442	759,096	3,984,538	0.2%	90.3%
375 Environmental and other technical consulting	0	3,520,385	444,240	3,964,625	0.2%	90.5%
372 Computer systems design services	0	3,265,423	672,495	3,937,918	0.2%	90.7%
20 Extraction of oil and natural gas	0	1,362,763	2,483,291	3,846,054	0.2%	90.9%
257 Software- audio- and video media for reproduc	0	3,785,293	27,261	3,812,553	0.2%	91.1%
342 Periodical publishers	0	3,248,691	538,300	3,786,991	0.2%	91.3%
327 Retail Stores - Clothing and clothing accesso	0	54,366	3,703,346	3,757,712	0.2%	91.5%
331 Retail Nonstores - Direct and electronic sale	0	61,740	3,623,039	3,684,779	0.2%	91.7%
369 Architectural- engineering- and related servi	0	2,585,493	1,065,928	3,651,421	0.2%	91.9%
332 Transport by air	0	1,368,003	2,010,807	3,378,811	0.2%	92.1%
425 Civic- social- professional- and similar orga	0	1,321,646	2,020,330	3,341,976	0.2%	92.2%
359 Funds- trusts- and other financial vehicles	0	153,421	3,114,297	3,267,718	0.2%	92.4%
338 Scenic and sightseeing transportation and sup	0	2,033,604	1,158,231	3,191,835	0.2%	92.6%
323 Retail Stores - Building material and garden	0	50,412	3,123,065	3,173,477	0.2%	92.7%
398 Nursing and residential care facilities	0	0	3,129,210	3,129,210	0.2%	92.9%
422 Other personal services	0	696,735	2,431,692	3,128,427	0.2%	93.1%
386 Business support services	0	2,475,960	642,798	3,118,758	0.2%	93.2%
350 Internet publishing and broadcasting	0	2,745,744	341,962	3,087,705	0.2%	93.4%
325 Retail Stores - Health and personal care	0	56,921	2,964,061	3,020,981	0.2%	93.6%
347 Sound recording industries	0	2,474,246	515,114	2,989,360	0.2%	93.7%
365 Commercial and industrial machinery and equip	0	2,473,778	466,792	2,940,570	0.2%	93.9%
113 Printing	0	2,409,204	302,857	2,712,061	0.1%	94.0%
417 Commercial and industrial machinery and equip	0	2,141,581	510,376	2,651,957	0.1%	94.1%
59 Animal (except poultry) slaughtering- renderi	0	608,477	1,981,516	2,589,993	0.1%	94.3%
400 Individual and family services	0	0	2,575,915	2,575,915	0.1%	94.4%
340 Warehousing and storage	0	1,829,662	723,258	2,552,919	0.1%	94.6%
390 Waste management and remediation services	0	1,589,493	956,675	2,546,169	0.1%	94.7%
404 Promoters of performing arts and sports and a	0	2,108,040	422,512	2,530,552	0.1%	94.8%
399 Child day care services	868,021	0	1,509,022	2,377,043	0.1%	94.9%
330 Retail Stores - Miscellaneous	0	44,483	2,259,811	2,304,294	0.1%	95.1%
383 Travel arrangement and reservation services	0	1,822,369	387,776	2,210,145	0.1%	95.2%
All Other Sectors	0	33,841,075	57,717,346	91,558,428	4.8%	100.0%
Total	**1,068,400,810**	**453,906,256**	**377,978,576**	**1,900,285,644**	**100.0%**	

APPENDIX C

HR&A Advisors, Inc.
Summary of Qualifications

HR&A Analyze. Advise. Act.
2800 28th Street, Suite 325, Santa Monica, CA 90405
T: 310-581-0900 | F: 310-581-0910 | www.hraadvisors.com

SERVICES TO THE PUBLIC AND PRIVATE DEVELOPMENT COMMUNITY

HR&A Advisors, Inc. (HR&A) is a full service economic development, real estate advisory and public policy consulting firm. Founded in 1976, the firm has a distinguished track record of providing realistic answers to complex housing, real estate, economic development, public finance and strategic planning problems. HR&A clients include Fortune 500 corporations, all levels of government, the nation's leading foundations and not-for-profit agencies. The firm has extensive experience working for the legal community in such roles as court-appointed special master, consent decree monitor, technical advisor and expert witness.

HR&A practice lines include real estate analysis and advisory services, local and regional economic analysis, economic development program formulation and analysis, fiscal impact analysis, land use policy analysis, development impact fees, housing policy research and analysis, population forecasting and demographic analysis, and transportation system and other capital facilities analysis and financing.

Among the qualities for which HR&A is widely known and respected are the impeccable quality of its analysis, ability to invent new analytic methods and approaches to suit the needs of a particular client, independent professional judgment honed through extensive exposure to the rigors of the public review process and the scrutiny of the judicial system, the ability to translate complex technical analysis for a variety of non-technical audiences, and the extensive involvement of its Partners in every project it accepts.

HR&A's domestic and international consulting is provided by a staff of 20 people located in offices in the Los Angeles area and New York City. Staff members include public finance professionals, planners, economists, architects, lawyers and experienced project managers. Virtually every member of the firm has substantial public or private sector experience in financial and policy analysis, real estate development and planning.

HR&A provides the following analytic services to the real estate development community:

- ***Strategic Positioning and Project Management.*** HR&A has been retained by developers and public agencies to perform a variety of management assignments ranging from project conceptualization to management of the technical team responsible for project development. In addition to a thorough understanding of the development business, our clients particularly value our ability to think strategically about their projects. This has propelled the firm into the forefront of reuse planning for closed military bases and development of downtown and urban waterfront revitalization strategies. HR&A has been awarded multiple assignments to manage the interdisciplinary teams of architects, urban designers, engineers and others to develop market-sensitive urban development and redevelopment strategies such projects require.

- ***Financial Feasibility Analysis.*** HR&A has frequently been retained to provide specialized analytic services in all areas of real estate feasibility analysis. This includes pro forma development and review, cash flow modeling, investment return analysis, deal structuring, and the identification of equity, debt and subsidy resources. We have led and/or been key participants in negotiating many different kinds of real estate transactions on behalf of private and public clients, including experience with public ground lease deals.

- ***Economic and Fiscal Impact Analysis.*** HR&A regularly prepares analyses of the impacts development projects and planning proposals may have on the revenues and expenditures of local public agencies, and/or the regional economies in which they are situated. HR&A has analyzed the impacts of high-rise office buildings, shopping centers, hospital campuses, regional performing arts centers, museums, convention centers, major airports, large single-family subdivisions and condominium developments, and mixed-use developments.

- ***Developer Negotiations.*** All of HR&A's principles and senior staff are very experienced negotiators, and the firm has particular expertise in negotiating real estate transactions, often in the context of public-private development projects. These services have been performed on behalf of both private and public real estate clients, owing to our keen understanding of each party's interests and needs. HR&A has been involved in all aspects of the formal real estate negotiations process, from structuring the process through direct participation on behalf of clients and/or acting as technical advisor during the negotiation process. HR&A has participated in drafting Exclusive Negotiating Agreements, Memoranda of Understanding, Owner-Participation Agreements and Development Agreements, particularly with respect to financial terms and conditions.

- ***Other Socio-Economic Impacts Analyses.*** HR&A has a long history of experience in all aspects of population, housing, employment forecasting and analysis and public school impacts analysis. This includes special expertise in dealing with regional planning policies promoting "jobs-housing balance." The firm's population and public school enrollment forecasting has been relied on by several school districts in making long-term facilities decisions, and was cited in a State Appellate court case which determined that the Santa Barbara campus of the University of California was exempt from school impact fees.

- ***Developer Fees and Exactions.*** In the early 1980s HR&A was retained by several jurisdictions to design exaction systems in which the firm followed the basic principles of nexus and "fair share" later codified in the Nollan and Dolan decisions by the U.S. Supreme Court, the Ehrlich decision by the California Supreme Court and California Government Code Section 66000, et seq. More recently HR&A has been retained by a number of developers and developer/owner organizations to evaluate, critique and participate in seeking changes to adopted and proposed developer fee programs. The firm's technical rigor and thoughtfulness about these issues is respected by all sides in the continuing debate about this method of infrastructure financing. A related area of expertise is in the analysis of project impacts on school facilities, a topic of significant interest for many developers and school districts.

- ***Energy Efficiency Solutions.*** HR&A is one of the few national consulting firms able to blend its practices in real estate and economic development advisory services into energy efficiency program development for our clients' benefit. Our work achieves environmental benefits while maximizing the opportunities for job creation and workforce development. In the past decade, we have emerged as a leader in economic feasibility assessment and management of large-scale energy efficiency initiatives for existing buildings, helping clients advance environmental responsibility through innovative strategies grounded in market pragmatism. We work with government clients to design meaningful public policy that adequately addresses private risk and advances public energy efficiency objectives. As experienced project leaders, we bring together the brightest minds in multidisciplinary fields and fuse their efforts into a cohesive whole. We also work with property owners and managers to project the accrual of energy savings given current lease structures and investment objectives, and quantify the combined impact of the investments on net operating income and overall asset value. HR&A carried out this practice area through **G.Works**, a unique partnership with global leader Buro Happold Engineers to provide a single source for energy efficiency projects from planning through implementation.

Private commercial development-related clients have included 20th Century Fox, Universal Studios, The Walt Disney Company, Olympia & York, Maguire Thomas Partners, JMB Realty Corporation, Gerald Hines Interests, Trammell Crow Company, General Growth Properties, Westfield Corporation, The Maserich Company, Tishman Speyer Properties, Reliance Development Group, Millenium Partners and the Trump Organization. Residential development clients include Centex Homes, K. Hovnanian Companies of California, Castle & Cook, Newhall Land & Farming Co., Olympia & York, Starrett Housing Corp., William Lyon Homes, Casden Properties, Inc., and Bisno Development Company.

Public clients have included a variety of cities, counties, redevelopment agencies, school districts, universities and colleges, special authorities and transportation agencies. HR&A has also represented large foundations with land holdings that need to be converted to cash to further their charitable purposes.

The firm also has a long history of consulting for all of the players in the housing development business, including private housing developers, HUD, private housing lenders, public lenders, national intermediaries (e.g., NEF, CEF, LISC, Enterprise Foundation) and community-based, non-profit developers around the nation.

REPRESENTATIVE LIST OF CLIENTS
Real Estate Advisory Services

Financial Institutions & Investment Companies

American Council on Life Insurance
Citibank Private Banking Group
Citicorp Real Estate, Inc.
Community Preservation Corporation
First Union National Bank
Fleet Financial Group
Goldman Sachs
Hartland Asset Management
Lehman Bros.
Shorebank Corporation

Real Estate Development Organizations and Private Companies

ARC Development
ARCORP Properties
Bermant Development Company
Boeing Realty Corporation
Casden Properties, Inc.
Castle & Cook Development Company
Centex Homes
Continental Development Corporation
Daniel Island Development Company
Disney Development Corporation
Edward J. Minskoff Equities
Gaylord Entertainment
General Growth Properties
Gibson Speno LLC
Home Depot Company
JMB Urban Realty Corporation
K. Hovnanian Companies of California
Landmark Land Company
Madison Square Garden
Maefield Development Corporation
Maserich Company
Maguire Thomas Partners
Millennium Partners
Newhall Land & Farming Company
New York Times Company
Olympia & York (USA)
The Related Companies
Reliance Development Group
Santa Monica Beach Development Corporation
Starrett Housing Corporation
Sunset Development Corporation
Tishman Speyer Properties
Trammell Crow Company
Trammell Crow Residential
TransAction Companies, Ltd.
Twentieth Century Fox
Universal Studios, Inc.
The Walt Disney Company
Westfield Corporation, Inc.
William Lyon Homes
World Financial Properties

Public Development Agencies

Alliance for Downtown New York
Battery Park City Authority
Brooklyn Bridge Park Development
Brooklyn Navy Yard Development Corporation
Catskill Watershed Corporation
Catholic Charities of Brooklyn
Cincinnati Business Committee
Columbus Downtown Redevelopment Corporation
Downtown Brooklyn Local Development Corporation
Economic Development Growth Enterprises, Oneida Co., NY
Empire State Development Corporation
Inland Valley Development Agency
Memphis Riverfront Development Corp.
National Capital Revitalization Corp.
New York City Economic Development Corporation
New York State Urban Development Corporation
Penmar Development Corporation
Port Authority of New York and New Jersey
Queens West Development Corporation

Cultural, Recreational & Special Events Clients

American Museum of Natural History
Brooklyn Academy of Music Corporation
Brooklyn Museum of Art
City of New Haven Arts & Entertainment Facilities Committee
Lincoln Center for the Performing Arts
Madison Square Garden
New Jersey Performing Arts Center
NYC2008
Public Space for Public Life
Randall's Island Sports Foundation
The Trust for Public Land

Other Quasi-Public and Non-Profit Organizations and Foundations

Apartment Association of Greater Los Angeles
The Bowery Mission
Common Ground Community
Cornell University
Corporation for Supportive Housing
Community Services Society of New York
The Enterprise Foundation
Ford Foundation
Gay Men's Health Crisis

Griffiss Local Development Corporation
Harry Frank Guggenheim Foundation
Kaiser Permanente
Local Initiatives Support Corporation
Los Angeles Collaborative for Community Development
Metropolitan Boston Housing Partnership
Metropolitan Jewish Geriatric Center
National Equity Fund
Neighborhood Progress, Inc.
New York Blood Center
Newark Alliance
Saint John's Hospital and Health Center
Saint Vincent's Hospital
San Gabriel Valley Council of Governments
Spanish-American Merchant's Assoc.
University of California, Los Angeles
University of California, Santa Barbara
Upper Manhattan Empowerment Zone Development Corp.
Williamsburg Affordable Housing
Westside Urban Forum

Governmental Agencies

Boulder Urban Renewal Authority
City of Berkeley Rent Stabilization Board
City of Beverly Hills
City of Chester (PA)
City of Columbus
City of Culver City (CA)
City of Detroit
City of Houston
City of Huntington Beach (CA)
City of Indianapolis
City of Los Angeles
City of New York
City of Olathe (KS)
City of Phoenix
City of San Luis Obispo (CA)
City of Santa Monica
City of West Hollywood (CA)
City of Yonkers
Community Redevelopment Agency of the City of Los Angeles
Compton Unified School District (CA)
County of Santa Barbara
District of Columbia
New Jersey Department of Commerce and Economic Development
Redevelopment Authority of the City of Philadelphia
San Diego Association of Governments
Santa Ana Unified School District (CA)
Santa Monica-Malibu Unified School District
Southern California Association of Governments
Yonkers Office of Downtown & Waterfront Development

Transportation Agencies

City of Chicago Department of Airports
Connecticut Dept. of Transportation
Delaware Dept. of Transportation
Los Angeles County Metropolitan Transportation Authority
Los Angeles World Airports
Massachusetts Bay Transportation Authority
New Jersey Transportation Corp.
New York Metropolitan Transportation Authority
San Diego County Regional Airport Authority
U.S. Dept. of Transportation

Housing Agencies

Chicago Housing Authority
Community Redevelopment Agency of the City of Los Angeles
Cuyahoga Metropolitan Housing Authority (IN)
Detroit Housing Commission
Housing Authority of Baltimore City
Housing Authority of the City of Houston
Housing Authority of the County of Los Angeles
Housing Authority of the City of Santa Monica
Housing Bureau, City of Long Beach
Indianapolis Housing Authority
Los Angeles Housing Department
New York City Housing Authority
New York City Housing Development Corporation
New York State Housing Finance Agency
Omaha Housing Authority (NE)
Philadelphia Housing Authority
Redevelopment Authority of the City of Philadelphia
St. Louis Housing Authority (MO)
United States Department of Housing and Urban Development

Appendix FEIR-31

Alternative 10: No Residential Alternative
Climate Change

Climate Change Technical Report – No Residential Alternative (Alternative 10) NBC Universal Evolution Plan

Prepared for:
Universal City Studios
Los Angeles, California

Prepared by:
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Stanley Hayes, Principal
ENVIRON International Corporation
Irvine, California

Date:
August 2012

Project Number:
03-17201A

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Appendix A: CalEEMod Output Files

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Acronyms and Abbreviations

ARB	Air Resources Board
BAU	Business-As-Usual
CalEEMod	California Emission Estimator Model
CARB	California Air Resources Board
CEC	California Energy Commission
CEUS	California End Use Survey
CEQA	California Environmental Quality Act
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
Draft EIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
EMFAC	EMission FACtors software program
ENVIRON	ENVIRON International Corporation
FED	Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document
FEIR	Final Environmental Impact Report
GHGs	greenhouse gases
GWP	global warming potential
IPCC	Intergovernmental Panel on Climate Change
LADWP	Los Angeles Department of Water and Power
LCFS	low-carbon fuel standard
MMT	Million metric tonne
MSW	municipal solid waste
$MTCO_2e$	metric tonnes of CO_2 equivalent
OFFROAD	Offroad Emissions Inventory Program model
RASS	Residential Appliance Saturation Survey
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
the City	City of Los Angeles
the County	County of Los Angeles
the proposed Project	NBC Universal Evolution Plan
the Project Site	391 acres located approximately two miles north of Hollywood and 10 miles northwest of downtown Los Angeles
tonnes	Metric tonnes; 1,000 kilograms
TDM	Transportation Demand Management
USEPA	United States Environmental Protection Agency
Working Group	Threshold Working Group

1 Executive Summary

In support of the Final Environmental Impact Report (EIR) Climate Change section, ENVIRON International Corporation (ENVIRON) prepared this Climate Change Technical Report to assess the Greenhouse Gas (GHG) emissions associated with the No Residential Alternative (Alternative 10), including emissions generated during construction and operation. This analysis follows the same methodology as the Climate Change Technical Report for the NBC Universal Evolution Plan Project (the proposed Project) prepared by ENVIRON dated June 2012.

As discussed in Section 2, Alternative 10 represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the proposed Project and increasing the studio production and entertainment elements of the proposed Project. Alternative 10 would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

As discussed in Section 3, the regulatory setting has changed since the completion of the Draft EIR. On August 19, 2011, CARB released a Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document ("FED" or "2011 Scoping Plan") that updated the AB 32 Scoping Plan originally adopted in 2008. In the FED, CARB updated the projected Business-As-Usual (BAU) emissions for 2020 based on updated economic forecasts due to the economic downturn. The CARB 2020 BAU projection for GHG emissions in California was originally estimated to be 596 MMTCO2e. The updated CARB 2020 BAU projection in the FED is approximately 545 MMTCO2e.[1,2] Considering the updated BAU estimate of 545 MMTCO2e by 2020, CARB now estimates a 21.7 percent reduction below the estimated statewide BAU levels is necessary to return to 1990 emission levels (i.e., 427 MMTCO2e) by 2020, instead of the 28.5% BAU reduction previously reported under the AB 32 Scoping Plan (2008).

Section 4 describes the CEQA significance threshold utilized in the Draft EIR and herein. Section 5 describes the standard emission estimation methods employed to determine Alternative 10 GHG emissions from construction and operations. Section 6 presents the Alternative 10's GHG emission inventories and compares them to the CEQA significance threshold. The potential GHG impacts of Alternative 10 are then compared to the potential GHG impacts of the proposed Project

[1] CARB, 2011. Attachment D, Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. August 19. Available at: http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf. Accessed: June 2012.

[2] CARB, 2011. Status of Scoping Plan Measures. Available at: http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed: June 2012.

Summary Table 8b shows total GHG emissions for construction and operation of the Alternative 10 and the CARB 2020 BAU scenario. The CARB 2020 BAU GHG emissions inventory is 41,531 MT CO_2e per year. The Alternative 10 GHG emissions inventory is 31,960 MT CO_2e per year. Alternative 10 represents a 23.0 percent reduction from a CARB 2020 BAU scenario due to the Alternative 10's sustainability commitments and changes in emission factors due to implementation of statewide GHG emissions reduction measures. The analysis set forth herein shows that the Alternative 10 would be consistent with both the AB 32 Scoping Plan (2008) and the FED. Therefore, similar to the proposed Project, Alternative 10's climate change impacts would be less than significant.

2 Introduction

This report evaluates the greenhouse gas (GHG) emissions associated with the development of the No Residential Alternative (Alternative 10). This analysis includes the GHG emission inventory that is used to determine climate change impacts as proposed by the South Coast Air Quality Management District (SCAQMD). This report documents the methodologies used by ENVIRON in developing the GHG emission inventory and determining significance under the California Environmental Quality Act (CEQA) GHG thresholds. This analysis follows the same methodology as the Climate Change Technical Report for the NBC Universal Evolution Plan Project (the proposed Project) prepared by ENVIRON dated June 2012.

2.1 Alternative 10 Description

Alternative 10 is described in more detail in the Final EIR for the proposed Project. For the convenience of the reader, the Alternative 10 description is summarized here. The No Residential Alternative represents a significant reduction in the overall density of the proposed Project by eliminating the entire residential portion of the proposed Project and increasing the studio production and entertainment elements of the proposed Project. The No Residential Alternative would eliminate the proposed 2,937 residential units and 180,000 square feet of neighborhood retail and community-serving commercial uses of the proposed Project and add approximately 210,000 additional net new square feet of Studio Office uses, an additional 150,000 net new square feet of Entertainment uses in the Entertainment Area, and an additional 450,000 square feet of Hotel uses (up to 500 guest rooms) in the Entertainment Area. In addition, Alternative 10 would include additional parking structures.

Due to the elimination of the proposed residential, neighborhood and community-serving commercial uses in the existing Back Lot Area, Alternative 10 also would retain the existing 42,240 square feet of Entertainment uses in the existing Back Lot Area proposed to be demolished under the proposed Project. Thus, Alternative 10 would result in an additional 192,240 net new square feet of Entertainment uses as compared to the proposed Project (the 150,000 new square feet described above and the retained 42,240 existing square feet). Alternative 10 would also include a 5,000 square foot expansion to the existing child care center in the northeastern portion of the Project Site, which would be located entirely within the City. Accordingly, under Alternative 10, the existing child care center would not be demolished and relocated to County jurisdiction, as it would be under the proposed Project.

Overall, the approximately 852,240 additional square feet of net new Studio Office, Hotel, and Entertainment uses under Alternative 10 would be in addition to the approximately 1.8 million square feet of net new Studio, Studio Office, Office, Entertainment, Entertainment Retail and Hotel uses proposed under the proposed Project.

2.2 Report Overview

The analysis set forth herein has been prepared to evaluate the potential GHG impacts of Alternative 10 and compare those impacts to the potential GHG impacts of the proposed Project. The remaining sections of this report describe the methods used to conduct this analysis and the results of the analyses.

3 Regulatory Environment for the GHG Inventory

The climate change regulatory setting – federal, state and local – is complex and rapidly evolving. This section highlights key regulatory developments germane to this GHG emissions report. More detailed regulatory discussion is included in the Draft EIR.

3.1 California Legislation

California has enacted several pieces of legislation that relate to GHG emissions and climate change, much of which sets aggressive goals for GHG reductions within the state. Per Senate Bill 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines, which address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment. However, neither a threshold of significance nor any specific mitigation measures are included or provided in these CEQA Guideline amendments.

3.1.1 Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires the California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a statewide GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. As previously determined by CARB, California had to reduce GHG emissions to a level approximately 28.4% below CARB's 2020 "business-as-usual" GHG emission projections (as set forth in the 2008 Scoping Plan) to achieve this goal.[3] The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones were as follows:

June 30, 2007—Identification of discrete early action greenhouse gas emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures. These were later supplemented by adding six other discrete early action measures.

January 1, 2008—Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.

January 1, 2009—Adoption of a scoping plan for achieving GHG emission reductions. On October 15, 2008, CARB issued a "discussion draft" Scoping Plan entitled "Climate Change

[3] CARB has not calculated the percent reduction required to achieve AB 32's mandate of returning to 1990 levels of GHG emissions by 2020. The value of 28.4% as the required reduction to achieve 1990 emissions in 2020 is an approximate value. Based on the Scoping Plan estimates and conservative rounding, the value could be 28.5%.

Draft Scoping Plan: A Framework for Change" (Draft Scoping Plan). CARB adopted the Draft Scoping Plan at its December 11, 2008 meeting.

January 1, 2010—Adoption and enforcement of regulations to implement the “discrete” actions.

January 1, 2011—Adoption of GHG emissions limits and reduction measures by regulation.

January 1, 2012—GHG emissions limits and reduction measures adopted in 2011 become enforceable.

Emission reduction measures that cannot be initiated in the 2007-2012 timeframe were considered in the Scoping Plan, which was published by CARB in December 2008. The Scoping Plan is defined by AB 32 as “achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020.” Scoping Plan measures include direct emission reductions, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives for sources for categories. By January 1, 2014 and every five years thereafter, CARB will update its Scoping Plan.

As discussed above, CARB developed a list of “discrete early actions” to reduce GHG emissions. Early action measures are those that were developed for implementation by January 2010. CARB approved the expanded list of early action measures on October 25, 2007. The nine discrete early action measures are:

- Increased Methane Capture from Landfills: On June 17, 2010, the regulation to reduce CH_4 emissions from municipal solid waste (MSW) landfills became effective. It requires owners and operators of certain uncontrolled MSW landfills to install gas collection and control systems, and requires existing and newly installed gas collection and control systems to operate in an optimal manner. The regulation is a discrete early action measure to reduce greenhouse gas emissions in California as described in the Global Warming Solutions Act. The Landfill Methane Control Measure incorporates the Intergovernmental Panel on Climate Change (IPCC’s) calculation methods, as indicated in Appendix I of the final rule.[4]
- Low-carbon fuel standard (LCFS): Requires the implementation of a low carbon fuel standard that reduces the carbon content of fuels used for motor vehicles.
- Reduction of Motor Vehicle A/C Refrigerant Losses: This measure restricts the sale of "do-it-yourself" automotive refrigerants to the public. This will restrict the refrigerant changes to professionals and will, as a result, reduce losses of these high global warming potential (GWP) gases.
- Smartway Truck Efficiency: Requires existing trucks and trailers to be retrofitted with devices that reduce aerodynamic drag, thus resulting in a 1.3 million metric tonne (MMT) reduction of GHG equivalents as well as reducing fuel consumption.

[4] Available at: http://www.arb.ca.gov/regact/2009/landfills09/landfillfinalfro.pdf. Accessed: August 2011.

- Port electrification: This measure will require docked ships to shut off their auxiliary engines by plugging into shoreside electrical outlets. This project will also reduce GHG emissions by 500,000 MT every year.
- Reduction of perfluorocarbons from the semiconductor industry: Alternative chemistry development, emissions abatement, and recovery and recycling will lessen GHG emissions by 500,000 MT annually.
- Reduction of propellants in consumer products: Aerosols, tire inflators, electronics cleaning, and dust removal products all contain propellants that contribute an estimated 300,000 MT of GHG emissions in California every year.
- Tire inflation: CARB will craft regulations requiring tune-up, smog check, and oil change mechanics to ensure proper tire inflation as part of overall service. California will see a 200,000 MT reduction in GHG emissions.
- SF_6 reductions from non-electricity sector: CARB proposes to ban the use of SF_6 from non-essential uses if viable alternatives are available.

As of April 22, 2010, 14 of 30 CARB regulations were approved, including all nine discrete early actions as required by AB 32.[5] It is estimated that the nine proposed discrete early actions will provide approximately 16 $MMTCO_2e$ of GHG reductions while the other early actions will provide approximately 26 $MMTCO_2e$ of GHG reductions. It also is anticipated that an additional 30 $MMTCO_2e$ in reductions will be achieved from the passage of anti-idling measures and AB 1493.[6] The remaining reductions necessary to achieve the goals of AB 32 (*i.e.,* 1990 levels by 2020) are expected to be achieved through CARB's Scoping Plan and other emission reduction efforts by members of the Climate Action Team (CAT).

On August 19, 2011, CARB released a Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document ("FED" or "2011 Scoping Plan") that updated the AB 32 Scoping Plan originally adopted in 2008. In the FED, CARB updated the projected Business-As-Usual (BAU) emissions for 2020 based on updated economic forecasts due to the economic downturn. The CARB 2020 BAU projection for GHG emissions in California was originally estimated to be 596 $MMTCO_2e$. The updated CARB 2020 BAU projection in the FED is approximately 545 $MMTCO_2e$.[7, 8] Considering the updated BAU estimate of 545 $MMTCO_2e$ by 2020, CARB now estimates a 21.7 percent reduction below the estimated statewide BAU levels is necessary

[5] CARB, 2010. AB 32 Climate Change Scoping Plan Implementation Update. April 22. http://www.arb.ca.gov/board/books/2010/042110/10-4-1pres.pdf. Accessed: June 2011.

[6] AB 1493 (Pavley) requires a reduction in GHG emissions from passenger vehicles in California. Setting GHG emission standards for California passenger vehicles requires a waiver from the USEPA.

[7] CARB, 2011. Attachment D, Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. August 19. Available at: http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf. Accessed: June 2012.

[8] CARB, 2011. Status of Scoping Plan Measures. Available at: http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed: June 2012.

to return to 1990 emission levels (i.e., 427 $MMTCO_2e$) by 2020, instead of the approximate 28.4% BAU reduction previously reported under the AB 32 Scoping Plan (2008).[9]

3.1.2 California Senate Bills 1078, 107, and 2; Renewables Portfolio Standard

Established in 2002 under California Senate Bill 1078 and accelerated in 2006 under California Senate Bill 107, California's RPS requires retail suppliers of electric services to increase procurement from eligible renewable energy resources by at least 1 percent of their retail sales annually, until they reach 20 percent by 2010.

On April 2, 2011, Governor Jerry Brown signed California Senate Bill 2 to increase California's RPS to 33 percent by 2020. This new standard also requires regulated sellers of electricity to procure 25 percent of their energy supply from certified renewable resources by 2016.

3.1.3 Low Carbon Fuel Standard

California Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average carbon intensity for transportation fuels in California regulated by CARB. CARB identified the LCFS as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.[10]

[9] Note that CARB also provided an even lower emissions 2020 BAU inventory forecast of approximately 507 MMTCO2e, which took credit for certain GHG reduction measures already in place. If this lower forecast is used, the necessary reduction from BAU is approximately 16%. However, in order to be consistent with the analysis in the 2008 Scoping Plan, which did not take credit for any GHG reduction measures, this analysis uses a comparison to the BAU inventory that only accounted for the economic adjustments to the BAU inventory (*i.e.*, 545 MMTCO2e).

[10] Available at: www.arb.ca.gov/fuels/lcfs/lcfs.htm. Accessed: June 2012.

4 GHG Significance Threshold

As described in the Draft EIR, a project would be inconsistent with Assembly Bill 32 and thus have a significant climate change impact if project-wide emissions reduction does not constitute an equivalent or larger break from “business-as-usual” than has been determined by the California Air Resources Board to be necessary to meet the state Assembly Bill 32 goals.

This analysis follows the same method of determining significance by analyzing consistency with AB 32 through evaluating Alternative 10’s break from a CARB 2020 BAU projection. However, CARB has approved an update to the 2008 AB 32 Scoping Plan (*i.e.*, the FED) as discussed in Section 3. This update included lower state-wide growth projections and, thus, a lower break from CARB 2020 BAU projection that is necessary to achieve AB 32’s goals. Based on current state-wide growth projections, CARB has indicated that achieving AB 32’s goals would require approximately a 21.7% break from the CARB 2020 BAU projection. To be consistent with updated regulations and methodologies, this analysis uses the more recently approved value from CARB (*i.e.*, 21.7%) to determine significance of Alternative 10’s GHG emissions.

5 Emission Estimation Methods

This section describes the methodology that was used to develop the GHG emissions inventories for construction and operational emissions associated with Alternative 10. Legislation and rules regarding climate change, as well as the scientific understanding of the extent to which different activities emit GHGs, continue to evolve. As such, the inventories in this report are a reflection of the guidance and knowledge currently available.

ENVIRON primarily utilized CalEEMod version 2011.1.1[11] to assist in quantifying the GHG emissions in the inventories presented in this report for Alternative 10. CalEEMod is a statewide program designed to calculate both criteria and GHG emissions from development projects in California. This model was developed under the auspices of the SCAQMD and received input from other California air districts. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors,[12] CARB's on-road and off-road equipment emission models such as the EMission FACtor model (EMFAC) and the Offroad Emissions Inventory Program model (OFFROAD), and studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle.

OFFROAD is an emissions factor model used to calculate emission rates from off-road mobile sources (*e.g.*, construction equipment, agricultural equipment).[13] EMFAC is an emissions factor model used to calculate emissions rates from on-road vehicles (*e.g.*, passenger vehicles, haul trucks).[14] The off-road diesel emission factors used by CalEEMod are based on the CARB OFFROAD2007 program.[15]

ENVIRON used LA South Coast County CalEEMod defaults in the model runs unless otherwise noted in the methodology descriptions below. Both Los Angeles Department of Water and Power (LADWP) will supply electrical power to the Project Site for the City areas and Southern California Edison (SCE) for the County areas. Accordingly, indirect GHG emissions from electricity usage are calculated using the LADWP's and SCE's carbon-intensity factors in CalEEMod based on the 2008 Power/Utility Reporting Protocol. Details regarding the specific methodologies used by CalEEMod can be found in the CalEEMod User's Guide and associated

[11] SCAQMD, 2011, California Emissions Estimator Model. Available at: http://www.caleemod.com/, Accessed: December 2011.

[12] The USEPA maintains a compilation of Air Pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: http://epa.gov/ttnchie1/ap42/, Accessed: December 2011

[13] SCAQMD, 1993. Off Road Mobile Source Emission factors. Available at:http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html, Accessed December 2011.

[14] CARB, 2010. EMFAC 2007 Release. Available at: http://arb.ca.gov/msei/onroad/latest_version.htm, December 2011.

[15] Correction factor of 33% reduction in emission factors as suggested by CARB in 2010 for programs like CalEEMod using OFFROAD 2007 was not considered in this analysis. While CARB finds that it is justifiable to include this correction factor, the analysis conservatively evaluates the emissions without this reduction.

appendices.[16] The CalEEMod output files are provided for reference in Appendix A to this report, which includes separate runs for the LADWP and SCE jurisdictions.

5.1 Greenhouse Gas Emission Estimation – Construction

GHG emissions from construction of Alternative 10 were calculated as described in the Air Quality Technical Report for Alternative 10 and corresponding appendices.[17] For each construction zone in Alternative 10, the anticipated development mix was established (*e.g.*, office/studio office, studio, entertainment, entertainment retail, amphitheater) and an approximate construction schedule that included four main categories (demolition, site preparation, building, finishing) was developed. The primary emission sources during construction include combustion sources from construction equipment and offsite mobile emissions (*i.e.*, worker commuting vehicles, delivery trucks, and haul trucks). The emission estimates are based on emission factors as provided by the SCAQMD and USEPA. On-Road emission factors were obtained from the SCAQMD[18] and are based on an EMFAC2007 model run that is specific to the SOCAB. Off-Road emission factors were also obtained from the SCAQMD[19] and are based on an OFFROAD2007 model run. Additional assumptions within each construction activity included equipment mix, hours of operation, and disturbed area. The Alternative 10 construction offsite emissions were estimated based on mobile source emission factors as provided by the SCAQMD for passenger vehicles, delivery trucks, and heavy-heavy duty trucks.[20] Additional assumptions within each construction activity included number of vehicles or trucks and total vehicle miles traveled per vehicle or truck on a per day basis.

Due to the complexity of the potential construction schedule for Alternative 10, the construction assumptions were not modeled in CalEEMod. However, the construction emissions estimated were completed using the same methodology as that used in CalEEMod. The construction emissions for Alternative 10 are shown in Table 2.

5.2 Greenhouse Gas Emission Estimation – Operations

Five sub-categories of GHG emissions are included: building energy use; mobile sources; solid waste; water and wastewater; and vegetation. The sections below describe specific sources of GHGs during operation of Alternative 10. A 30-year annualized construction value is added to operational emissions, as discussed in Section 5.1. Use of a 30-year project life is based on draft guidance provided by SCAQMD. The total emissions are compared to the significance threshold described in Section 4. The subsections below describe the methodology used in developing the GHG emission inventories and, in particular, any project specific assumptions. The methodology and calculations are more fully described in CalEEMod User's Guide Appendix A. The CalEEMod output files are provided for reference in Appendix A to this report.

[16] SCAQMD, 2011. California Emissions Estimator Model User's Guide. Version 2011.1.1. February. Available at: http://www.caleemod.com/.Accessed: April 2012.
[17] ENVIRON, 2012. Air Quality Technical Report for Alternative 10, Appendix G. August.
[18] SCAQMD. http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html.
[19] SCAQMD. http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html.
[20] SCAQMD. http://www.aqmd.gov/CEQA/handbook/onroad/onroad.html.

5.2.1 Building Energy Usage

The energy intensity value was estimated based on site specific data and the CalEEMod default energy intensity values specific to land use were used in the analysis. As with the proposed Project, Alternative 10 was assumed to exceed Title 24 (2005) standards by 15%. The program uses the California Commercial End Use Survey (CEUS)[21] database to develop energy intensity values (electricity or natural gas usage per square feet per year) for non-residential buildings. CalEEMod converts the resulting energy intensity quantities to GHG emissions by multiplying the energy intensity by the appropriate emission factors obtained by incorporating information on local electricity production. ENVIRON used both LADWP and SCE as the utility providers for Alternative 10 consistent with the specific buildings areas expected in each jurisdiction based on the Alternative 10 description. It is assumed that LADWP and SCE will meet the 33% RPS requirements and that the LADWP served areas would obtain an additional 20% green power. This calculation of the LADWP and SCE emission factors are shown in Table 3. The inventory also includes an estimate of the growth of the existing liquid fuel, natural gas, and electricity uses. These emissions were estimated to increase in proportion to the square footage increase of Alternative 10.

The CARB 2020 BAU scenario assumes Title 24 (2005) standards to estimate the energy intensity values and default emission factors for each utility for the local electricity production.

5.2.2 Mobile Sources

CalEEMod calculates the emissions associated with on-road mobile sources. These are associated with workers, customers, and delivery vehicles visiting the Project Site. Alternative 10-specific traffic information was obtained from the traffic consultant.[22] The Alternative 10 assumptions include the Transportation Demand Management (TDM) trip reductions,[23] and implementation of Pavley[24] and LCFS regulations which reduce the emissions from mobile sources.

Consistent with the AB 32 Scoping Plan, the CARB 2020 BAU scenario assumes that the Pavley and LCFS regulations are not in place, that Alternative 10 is not an infill development and Alternative 10 has not incorporated the various TDM features. The trip characteristics for Alternative 10 and CARB 2020 BAU scenario are shown in Table 4.

5.2.3 Solid Waste

GHG emissions from solid waste disposal were calculated using Alternative 10-specific waste generation information as provided by Matrix Environmental and assuming waste is sent to a landfill with landfill gas capture flaring. Defaults from CalEEMod were used for other

[21] Itron, 2006. California Commercial End Use Survey. CEC-400-2006-005. March. Available at: http://www.energy.ca.gov/ceus/. Accessed: December 2011.

[22] Gibson Transportation Consulting, Inc. Table 14 of the Alternative 10 Transportation Analysis, 2012.

[23] The TDM program includes trip reductions due to measures such as increases in transit, transit incentives, carpooling, bicycle-oriented infrastructure, etc.

[24] As discussed in the CTG Energetics Global Warming Technical Report, California Assembly Bill 1493 ("the Pavley Standard"), requires the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State.

assumptions (*e.g.*, method of disposal); these defaults are based on data from CalRecycle[25] and CARB Local Government Operations Protocol for degradation of solid waste material. CalEEMod captures all of the future GHG emissions resulting from the waste degradation in the landfill and attributes it to the year it was placed into the landfill. As with the proposed Project, the analysis herein assumes Alternative 10 would divert 65% of the non-hazardous operational waste. The analysis does not quantify the Alternative's additional construction and demolition debris waste diversion commitment. The CARB 2020 BAU scenario assumed 49% of the waste would be diverted based on the LA regional solid waste diversion rate.[26] The solid waste GHG emissions and waste diversion assumptions are shown in Tables 5a and 5b.

5.2.4 Water and Wastewater

Water use and wastewater generation by a project will result in indirect GHG emissions. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. ENVIRON used Alternative 10-specific information for water usage as provided by Matrix Environmental. As with the proposed Project, it is assumed that Alternative 10 would include water conservation features that were estimated to reduce the domestic, potable water usage by 20%. CalEEMod allows the user to enter an overall water reduction value. The domestic, potable water was 60% of the total water usage, so an overall reduction factor of 12% (*i.e.*, 20% reduction of 60% of the total water) was used in CalEEMod. CalEEMod defaults were otherwise used to estimate the GHG emissions associated with water and wastewater.

The CARB 2020 BAU scenario assumed zero water reduction. The water and wastewater assumptions are shown in Tables 6a and 6b.

5.2.5 Vegetation Changes

The permanent removal of existing vegetation can contribute to net GHG increases by reducing existing carbon sequestration capacity. When vegetation is removed, it may undergo biodegradation or it may be combusted. Either pathway results in the carbon (C) present in the plants being combined with oxygen (O_2) to form CO_2. The addition of vegetation can contribute to net GHG decreases by increasing carbon sequestration capacity. Alternative 10 involves both the removal and planting of trees.

CalEEMod calculates GHG emissions due to vegetation changes by accepting inputs regarding the number and species of trees planted. The model then calculates net sequestration changes by assuming a 20-year active growth period and carbon sequestration rate specific to the species selected.

Because Alternative 10 involves both the removal and planting of trees, a net weighted number of trees was calculated for input into CalEEMod. This methodology parallels that used in the climate change analysis of the proposed Project Draft EIR. The net weighted number was calculated by multiplying the number of trees by the percent to full growth. The result was a negative number as shown in Table 7, which suggests that Alternative 10 would reduce the

[25] CalRecycle, 2011. Available at: http://www.calrecycle.ca.gov/, Accessed: December 2011.
[26] CTG, Global Warming Technical Report. March 2010. Page 24. (Appendix Q of the Draft EIR)

overall mass of trees compared to what currently exists. It is assumed that Alternative 10 would include the same proposed tree regulations as the proposed Project. Although Alternative 10 would plant more trees than currently exists, the trees being removed are closer to their full growth than the new trees will be in the 20-year active growth period assumed by CalEEMod. The weighted number was entered into CalEEMod and the result was assumed to be a positive emission, indicating that Alternative 10 reduces the sequestration capacity of the site.

6 Results

The Alternative 10 GHG emissions inventory was compared to the GHG emissions that would occur from a development that would be built without the project design features and energy reduction commitments that would be included with Alternative 10, and without the regulations that have been promulgated to comply with AB 32 (*i.e.*, the CARB 2020 Business-As-Usual Scenario). The CARB 2020 BAU scenario represents the GHG emission inventory if projects continued to be built according to standards at the time AB 32 was enacted, and was the scenario that the CARB used to estimate the percent reduction in GHG emissions required to return to 1990 levels by 2020.

Alternative 10 would be consistent with AB 32. Table 8a and Table 8b show total GHG emissions for construction and operation of Alternative 10 and the CARB 2020 BAU scenario. The Alternative 10 GHG emissions inventory is 31,960 MT CO_2e per year. The CARB 2020 BAU GHG emissions inventory is 41,531 MT CO_2e per year. Alternative 10 represents a 23.0 percent reduction from a CARB 2020 BAU scenario taking into consideration Alternative 10's sustainability commitments (e.g., 20% green power commitment for LADWP serviced buildings that are 15% better than Title 24 (2005) standards) and changes in emission factors due to implementation of the Renewables Portfolio Standard of 33 percent, the Pavley regulation mandating higher fuel efficiency standards for light-duty vehicles, and the LCFS.

Both the proposed Project and Alternative 10 would be consistent with AB32 and, therefore, result in less than significant climate change impacts. In comparison to the proposed Project, Alternative 10 would result in fewer annual GHG emissions (31,960 MTCO_2e versus the 59,715 MTCO_2e of the proposed Project). However, given the different land uses in the proposed Project compared to Alternative 10 (*i.e.*, the residential development), Alternative 10's reduction from a CARB 2020 BAU scenario would be less than the proposed Project.

Tables

Table 1. Comparison of Net New Square Footage

Land Use	Net New Project Development	Net New Alternative 10 Development
Studio	307,949	307,949
Studio Office[1]	437,326	647,320
Office	495,406	495,406
Entertainment	145,655	337,895
Entertainment Retail	39,216	39,216
Amphitheater	-50,600	-50,600
Hotel[2,3]	450,000	900,000
Neighborhood Retail and Community-Serving Commercial	180,000	0
Residential	2937 units	0 units
Total		
Commercial	2,004,952	2,677,186
Residential	2937 units	0 units

1. Studio Office uses under Alternative 10 include a 5,000 square foot expansion of an existing child care center.
2. The hotel under the Project includes up to 500 hotel guest rooms and related hotel facilities.
3. The hotel under Alternative 10 includes up to 1,000 hotel guest rooms and related hotel facilities.

Table 2. Alternative 10 Construction Emissions Summary

Source	Total Emissions ($MT\ CO_2e$)	Annualized Emissions ($MT\ CO_2e/yr$)
Water (construction-related)	307	10
Construction	69,329	2,311
Total	69,636	2,321

Ref: ENVIRON, 2012. Alternative 10 Air Quality Technical Report. August. Appendix G.
Note:

The water related GHG emissions are conservatively assumed to be the same as the Project.

Table 3. Utility Carbon Intensity Factors

	LADWP	SCE
% of Total Energy From Renewables[1,2]	13%	13%
% of Total Energy From Non-Renewables	87%	87%
Total Energy Delivery (MWh)[3,4]	29,141,703	83,958,770
from renewables (MWh)	3,671,855	11,234,288
from non-renewables (MWh)	25,469,848	72,724,482
CO_2 Emissions per Total Energy Delivered (lb CO_2/MWh)	1228	631
Total CO_2 Emissions (MT CO_2)[5,6]	16,230,815	24,026,108
CO_2 Emissions per Total Non-Renewable Energy (lb CO_2/MWh)[7]	1405	728
Estimated Emission Factors for Total Energy Delivered[8]		
2010 RPS (20%) (lb CO_2/MWh)	1123.93	583
2020 RPS (33%) (lb CO_2/MWh)	941	488

Notes

1. The renewable energy portfolio for LADWP. The total energy is based on information available at: http://www.ladwpnews.com/go/doc/1475/161230/

2. The renewable energy portfolio for Southern California Edison, the power utility that is most likely to provide power to the Project. The renewable energy distribution is based on the 2008 data available at http://www.sce.com/PowerandEnvironment/renewables/

3. Total energy value reported for 2007 by LADWP in California Climate Action Registry. Available at: http://www.climateregistry.org/CarrotDocs/16/2007/LADWP_2007_PUP_Report.pdf

4. Total energy value reported for 2007 by Southern California Edison in california Climate Action Registry. Available at: http://www.climateregistry.org/CarrotDocs/26/2007/SCEPUP07r3.xls

5. The amount of CO_2 emissions is provided in LADWP's Power/Utility Protocol (PUP) report for 2007 available at: http://www.climateregistry.org/CarrotDocs/16/2007/LADWP_2007_PUP_Report.pdf

6. The amount of CO_2 emissions is provided in Southern California Edison's Power/Utility Protocol (PUP) report for 2007 available at: http://www.climateregistry.org/CarrotDocs/26/2007/SCEUPU07r3.xls

7. The emissions metric presented here is calculated based on the total CO_2 emissions divided by the energy delivered from non-renewable sources.

8. The emission factors for total energy delivered are estimated by multiplying the percentage of energy delivered from non-renewable energy by the CO_2 emissions per total non-renewable energy metric calculated above. Two emission factors are presented here for the current 20% RPS goal for 2010 and the presumed 33% RPS for 2020. The estimate provided here and the 2007 PUP report issued by Southern California Edison assume that renewable energy sources do not result in any CO_2 emissions. This is not necessarily true for biogas- and biomass-sourced energy but some consider these sources to be "carbon neutral."

Table 4. Alternative 10 Traffic/Transportation Assumptions

Land Use	Proposed Alternative 10	Metric	Alternative 10		BAU	
			growth trips/day/size metric[1, 2]	Trip Length (miles)	growth trips/day/size metric[1, 2]	Trip Length (miles)
SCE Jurisdiction						
Studio, Business, and Entertainment						
Studio	257.949	1000 sq ft	2.95	Defaults	3.77	Defaults
Studio Office	442.320	1000 sq ft	1.33	Defaults	1.70	Defaults
Office	495.406	1000 sq ft	1.27	Defaults	1.63	Defaults
Total General Office Building[3]			1.30		1.66	
Entertainment	337.895	1000 sq ft	0.92	Defaults	1.18	Defaults
Entertainment Retail	39.216	1000 sq ft	1.34	Defaults	1.71	Defaults
Amphitheatre		acre				
Hotel	500	room	1.21	Defaults	1.54	Defaults
LADWP Jurisdiction						
Studio, Business, and Entertainment						
Studio	50.000	1000 sq ft	2.95	Defaults	3.77	Defaults
Studio Office						
Studio Office (not "child care" land use)	200.000	1000 sq ft	1.33	Defaults	1.70	Defaults
Child Care	5.000	1000 sq ft	1.33	Defaults	1.70	Defaults
Hotel	500	room	1.21	Defaults	1.54	Defaults

Notes

1. Growth trips are calculated based on information as provided by the traffic consultant (Gibson Transportation Consulting, Inc.). Ref: Table 14 of the Atlernative 10 Traffic Analysis.

2. The analysis assumes that certain trips to and from the Project are not new trips in the context of Global Climate Change and would occur even if the Project is not implemented. Specifically, all commercial non-work trips were derived using default percent trip purpose values from CalEEMod and are included in the GHG inventory.

3. Total general office building is the combination of Studio Office and Office.

Table 5a. Alternative 10 Solid Waste Generation

Land Use	Solid Waste Generated[1,2] (ton/day)	Solid Waste Generated[2,3] (ton/year)
SCE Jurisdiction		
Studio, Business, and Entertainment		
Studio	2.82	1,031
Studio Office	3.58	1,307
Office	3.58	1,307
Total General Office Building[4]	7.16	2,614
Entertainment	6.20	2,263
Entertainment Retail	0.92	335
Amphitheatre	--	--
Hotel	3.52	1,285
LADWP Jurisdiction		
Studio, Business, and Entertainment		
Studio	0.55	200
Studio Office	--	--
Studio Office (not "child care" land use)	0.76	278
Child Care	0.10	35
Hotel	3.52	1,285

Notes
1. The solid waste generated is estimated based on information provided by Matrix.
2. Solid waste generated is the same for the Project and BAU scenarios.
3. Annual solid waste generated is calculated by assuming the daily solid waste generated occurs 365 days of the year.
4. Total general office building is the sum of Studio Office and Office.

5b. Alternative 10 Waste Diversion

	Alternative 10 (% Diversion)	BAU (% Diversion)
Assumption	Divert 65% of solid waste	Divert 49% of solid waste

Note: Project Design Feature targets a higher waste diversion rate for operations.

Table 6a. Alternative 10 Water Usage Assumptions

Land Use	Alternative 10 Water Demand[1] (gal/yr)	BAU Water Demand[1] (gal/yr)
SCE Jurisdiction		
Studio, Business, and Entertainment		
Studio	6,628,283	7,532,140
Studio Office	25,573,302	29,060,570
Office	28,642,368	32,548,145
Total General Office Building[2]	54,215,669	61,608,715
Entertainment	19,535,705	22,199,665
Entertainment Retail	5,139,200	5,840,000
Amphitheatre	--	--
Hotel	41,756,000	47,450,000
Irrigation[3]	36,080,980	36,080,980
LADWP Jurisdiction		
Studio, Business, and Entertainment		
Studio	1,284,800	1,460,000
Studio Office		
Studio Office (not "child care" land use)	11,563,200	13,140,000
Child Care	128,480	146,000
Hotel	41,756,000	47,450,000
Irrigation[3]	2,153,500	2,153,500

Notes

1. The water demand is estimated based on information provided by Matrix.
2. Total general office building is the sum of Studio Office and Office.
3. This analysis conservatively assumes irrigation water is potable water and does not take credit for potential use of recalimed water.

6b. Alternative 10 Water Project Design Feature Assumptions

	Alternative 10 (% Reduction)	BAU (% Reduction)
Assumption	Reduce potable water consumption by 20% for 60% of non-landscaping related, indoor water uses. Assume this results in an overall reduction of 12%.	0%
Note: Project Design Feature targets reduced potable water consumption.		

Table 7. Alternative 10 Vegetation Change Evaluation

Category	City of LA			County of LA	
	Coast Live Oak	So Cal Black Walnut	California Sycamore	Coast Live Oak	Coast Live Oak
Existing					
Number of trees[1]	52	12	30	131	252
Growth (% to full population maturity)[2]	100%	73%	75%	81%	85%
Weighted number of trees[3]	52	8.76	22.5	106.11	214.2
Alt 10					
Number of trees[4]	104	24	60	262	504
Growth (% to full population maturity)[2]	37%	37%	37%	37%	37%
Weighted number of trees[3]	38.48	8.88	22.2	96.94	186.48
Increment					
Weighted number of trees[5]	-13.52	0.12	-0.3	-9.17	-27.72
TOTAL[6]	-13.7			-36.89	

1. Dudek, 2012. NBC Universal Evolution Plan Tree Impact Evaluation. August. Table 1 (City of LA) and Table 7 (County of LA).

2. Percent to full maturity is assumed to be the same as for the Project and is obtained from CTG Global Warming Technical Report Appendix A. Page 29 (Appendix A is in Appendix Q).

3. The weighted number of trees is calculated as follows: weighted = number of trees * (growth % to full maturity). Note that mortality is not taken into account because CalEEMod accounts for it.

4. The number of trees replaced by Alt 10 is assumed to be the same ratio as that for the Project as obtained from CTG Global Warming Technical Report Appendix A. Page 29 (Appendix A is in Appendix Q). This ratio assumes two trees are replaced for every one removed.

5. The incremental change due to Alt 10.

6. The total number of weighted trees is entered into CalEEMod as a positive number and CalEEMod estimates the resulting GHG emissions change. Because the number is negative, indicating that there is less sequestration potential after implementation, the result from CalEEMod is assumed to be a net increase in emissions.

Table 8a. Alternative 10 and CARB 2020 BAU GHG inventories (detailed)

	Alternative 10 (metric tonnes)	BAU (metric tonnes)	% change from BAU
Alternative 10 (building energy usage including: electricity and natural gas; and other fossil fuels)	23,438	29,729	-21%
Direct Combustion[1]	6,501	6,501	0%
Natural Gas	3,584	3,584	0%
All Other Fuel	2,917	2,917	0%
Process Loads	6,338	8,184	-23%
Studio	1,317	1,833	-28%
Studio (LADWP)	1,016	1,337	-24%
Studio (SCE)	300	495	-39%
Studio Office	2,777	4,144	-33%
Studio Office (SCE)	1,666	2,269	-27%
Studio Office (not "child care" land use) (LADWP)	1,097	1,852	-41%
Child Care (LADWP)	14	23	-38%
Office (SCE)	1,871	2,543	-26%
Entertainment (SCE)	1,231	1,600	-23%
Entertainment Retail (SCE)	135	186	-27%
Amphitheatre[2]	0	0	--
Hotel	3,267	4,739	-31%
Hotel (SCE)	1,403	1,817	-23%
Hotel (LADWP)	1,864	2,922	-36%
Water	939	1,321	-29%
Solid Waste	1,485	2,164	-31%
Transportation	3,740	5,958	-37%
Subtotal	29,602	39,173	-24%
Construction[3]	2,321	2,321	0%
Trees[4]	37	37	0%
Total	31,960	41,531	-23.0%

Notes

1. Direct combustion data were obtained from NBCU data for 2006. Direct combustion emissions were calculated by applying a growth factor to reflect Alternative 10 development and subtracting the baseline (i.e., 2006) to represent incremental emissions.

2. Amphitheatre emissions are conservatively assumed to be zero although there is an area reduction (i.e., resulting in fewer emissions).

3. Construction emissions were obtained from Ref: ENVIRON, 2012. Alternative 10 Air Quality Technical Report. August. Appendix G.

4. Positive emissions for Trees represent a loss of sequestration ability.

Table 8b. Alternative 10 and CARB 2020 BAU GHG inventories

	Alternative 10 (metric tonnes)	BAU (metric tonnes)	% change from BAU
Alternative 10 (building energy usage including: electricity and natural gas; and other fossil fuels)	23,438	29,729	-21%
Water	939	1,321	-29%
Solid Waste	1,485	2,164	-31%
Transportation	3,740	5,958	-37%
Subtotal	29,602	39,173	-24%
Construction[1]	2,321	2,321	0%
Trees[2]	37	37	0%
Total	31,960	41,531	-23.0%

Notes

1. Construction emissions were obtained from Ref: ENVIRON, 2012. Alternative 10 Air Quality Technical Report. August. Appendix G.
2. Positive emissions for Trees represent a loss of sequestration ability.

Appendix A

CalEEMod Output File

NBCU ALT10 LADWP GHG

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	200	1000sqft
Day-Care Center	5	1000sqft
Refrigerated Warehouse-No Rail	50	1000sqft
Hotel	500	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	12		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics - Alt10 GHG

Land Use - According to Alt10 Project Description, area of hotel (500 rooms) = 450,000 sq.ft.

Construction Phase - Construction calculated separately.

Off-road Equipment -

Vehicle Trips - Mobile trip/day/size based on traffic data.

Area Coating -

Energy Use - Using Title 24 - 2005

Water And Wastewater - Indoor water use is based on information from matrix. Hotel outdoor water is irrigation.

Solid Waste - Solid waste generation is based on information from matrix.

Sequestration -

Energy Mitigation - Assume Title 24 - 2005 + 15%, Green Power = 20%

Water Mitigation -

Waste Mitigation - Divert 65%

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	4,189.76	4,189.76	0.12	0.05	4,209.03
Mobile											0.00	896.61	896.61	0.04	0.00	897.36
Waste											364.98	0.00	364.98	21.57	0.00	817.94
Water											0.00	315.02	315.02	1.68	0.05	364.29
Total											**364.98**	**5,401.39**	**5,766.37**	**23.41**	**0.10**	**6,288.62**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	3,261.10	3,261.10	0.09	0.04	3,276.22
Mobile											0.00	896.61	896.61	0.04	0.00	897.36
Waste											127.74	0.00	127.74	7.55	0.00	286.28
Water											0.00	315.02	315.02	1.68	0.05	364.29
Total											**127.74**	**4,472.73**	**4,600.47**	**9.36**	**0.09**	**4,824.15**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
New Trees					10.28
Total					**10.28**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	896.61	896.61	0.04	0.00	897.36
Unmitigated											0.00	896.61	896.61	0.04	0.00	897.36
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	6.65	6.65	6.65	7,647	7,647
General Office Building	266.00	266.00	266.00	586,124	586,124
Hotel	605.00	605.00	605.00	1,100,880	1,100,880
Refrigerated Warehouse-No Rail	147.50	147.50	147.50	370,649	370,649
Total	1,025.15	1,025.15	1,025.15	2,065,299	2,065,299

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Day-Care Center	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
Hotel	8.90	13.30	7.40	0.00	0.00	100.00
Refrigerated Warehouse-No Rail	8.90	13.30	7.40	0.00	0.00	100.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.00	2,599.95	2,599.95	0.08	0.03	2,611.05
Electricity Unmitigated											0.00	3,429.97	3,429.97	0.11	0.04	3,444.62
NaturalGas Mitigated											0.00	661.15	661.15	0.01	0.01	665.17
NaturalGas Unmitigated											0.00	759.79	759.79	0.01	0.01	764.42
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Day-Care Center	58950											0.00	3.15	3.15	0.00	0.00	3.16
General Office Building	2.488e+006											0.00	132.77	132.77	0.00	0.00	133.58
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	58500											0.00	3.12	3.12	0.00	0.00	3.14
Total												**0.00**	**759.79**	**759.79**	**0.01**	**0.01**	**764.41**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Day-Care Center	50917.5											0.00	2.72	2.72	0.00	0.00	2.73
General Office Building	2.12656e+006											0.00	113.48	113.48	0.00	0.00	114.17
Hotel	1.01617e+007											0.00	542.27	542.27	0.01	0.01	545.57
Refrigerated Warehouse-No Rail	50400											0.00	2.69	2.69	0.00	0.00	2.71
Total												**0.00**	**661.16**	**661.16**	**0.01**	**0.01**	**665.18**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Day-Care Center	35400					15.11	0.00	0.00	15.17
General Office Building	3.048e+006					1,300.98	0.04	0.02	1,306.54
Hotel	4.077e+006					1,740.19	0.05	0.02	1,747.62
Refrigerated Warehouse-No Rail	875500					373.69	0.01	0.00	375.29
Total						**3,429.97**	**0.10**	**0.04**	**3,444.62**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Day-Care Center	26946					11.50	0.00	0.00	11.55
General Office Building	2.29464e+006					979.42	0.03	0.01	983.61
Hotel	3.0726e+006					1,311.48	0.04	0.02	1,317.08
Refrigerated Warehouse-No Rail	697100					297.54	0.01	0.00	298.81
Total						**2,599.94**	**0.08**	**0.03**	**2,611.05**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated											0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					315.02	1.68	0.05	364.29
Unmitigated					315.02	1.68	0.05	364.29
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Day-Care Center	0.12848 / 0					0.72	0.00	0.00	0.83
General Office Building	11.5632 / 0					64.40	0.35	0.01	74.80
Hotel	41.756 / 2.1535					242.75	1.28	0.03	280.35
Refrigerated Warehouse-No Rail	1.2848 / 0					7.16	0.04	0.00	8.31
Total						**315.03**	**1.67**	**0.04**	**364.29**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Day-Care Center	0.12848 / 0					0.72	0.00	0.00	0.83
General Office Building	11.5632 / 0					64.40	0.35	0.01	74.80
Hotel	41.756 / 2.1535					242.75	1.28	0.03	280.35
Refrigerated Warehouse-No Rail	1.2848 / 0					7.16	0.04	0.00	8.31
Total						**315.03**	**1.67**	**0.04**	**364.29**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					127.74	7.55	0.00	286.28
Unmitigated					364.98	21.57	0.00	817.94
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Day-Care Center	35					7.10	0.42	0.00	15.92
General Office Building	278					56.43	3.34	0.00	126.47
Hotel	1285					260.84	15.42	0.00	584.57
Refrigerated Warehouse-No Rail	200					40.60	2.40	0.00	90.98
Total						**364.97**	**21.58**	**0.00**	**817.94**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Day-Care Center	12.25					2.49	0.15	0.00	5.57
General Office Building	97.3					19.75	1.17	0.00	44.26
Hotel	449.75					91.30	5.40	0.00	204.60
Refrigerated Warehouse-No Rail	70					14.21	0.84	0.00	31.84
Total						**127.75**	**7.56**	**0.00**	**286.27**

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					10.28	0.00	0.00	10.28
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Net New Trees

Species Class

	Number of Trees	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
		tons				MT			
Mixed Hardwood	14					10.28	0.00	0.00	10.28
Total						**10.28**	**0.00**	**0.00**	**10.28**

NBCU ALT10 SCE GHG

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	442.32	1000sqft
General Office Building	495.41	1000sqft
General Light Industry	337.89	1000sqft
Refrigerated Warehouse-No Rail	257.95	1000sqft
Hotel	500	Room
Regional Shopping Center	39.22	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	12	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics - Alt10 GHG

Land Use - According to Alt10 Project description, area of hotel (500 rooms) = 450,000 sq.ft.

Construction Phase - Construction calculated separately.

Off-road Equipment -

Vehicle Trips - Mobile trip/rate/size based on traffic data

Energy Use - Using Title 24 - 2005 for electricity intensity

Water And Wastewater - Indoor water use information from matrix. Outdoor water for hotel is irrigation water.

Solid Waste - Solid waste information from matrix.

Sequestration -

Energy Mitigation - Title 24 - 2005 + 15%

Water Mitigation -

Waste Mitigation - Divert 65%

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	7,762.24	7,762.24	0.40	0.17	7,822.68
Mobile											0.00	2,840.42	2,840.42	0.11	0.00	2,842.76
Waste											1,528.12	0.00	1,528.12	90.31	0.00	3,424.61
Water											0.00	457.00	457.00	3.91	0.11	572.20
Total											**1,528.12**	**11,059.66**	**12,587.78**	**94.73**	**0.28**	**14,662.25**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	7,265.92	7,265.92	0.38	0.16	7,322.73
Mobile											0.00	2,840.42	2,840.42	0.11	0.00	2,842.76
Waste											534.84	0.00	534.84	31.61	0.00	1,198.61
Water											0.00	457.00	457.00	3.91	0.11	572.20
Total											**534.84**	**10,563.34**	**11,098.18**	**36.01**	**0.27**	**11,936.30**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
New Trees					27.16
Total					**27.16**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	2,840.42	2,840.42	0.11	0.00	2,842.76
Unmitigated											0.00	2,840.42	2,840.42	0.11	0.00	2,842.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	310.86	310.86	310.86	781,149	781,149
General Office Building	575.02	575.02	575.02	1,267,033	1,267,033
General Office Building	644.03	644.03	644.03	1,419,110	1,419,110
Hotel	605.00	605.00	605.00	1,100,880	1,100,880
Refrigerated Warehouse-No Rail	760.95	760.95	760.95	1,912,178	1,912,178
Regional Shopping Center	52.55	52.55	52.55	89,040	89,040
Total	2,948.42	2,948.42	2,948.42	6,569,390	6,569,390

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
Hotel	8.90	13.30	7.40	0.00	0.00	100.00
Refrigerated Warehouse-No Rail	8.90	13.30	7.40	0.00	0.00	100.00
Regional Shopping Center	8.90	13.30	7.40	0.00	0.00	100.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.00	5,858.82	5,858.82	0.35	0.13	5,907.07
Electricity Unmitigated											0.00	6,142.04	6,142.04	0.36	0.14	6,192.63
NaturalGas Mitigated											0.00	1,407.09	1,407.09	0.03	0.03	1,415.66
NaturalGas Unmitigated											0.00	1,620.19	1,620.19	0.03	0.03	1,630.06
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	6.69032e+006											0.00	357.02	357.02	0.01	0.01	359.19
General Office Building	5.50246e+006											0.00	293.63	293.63	0.01	0.01	295.42
General Office Building	6.16285e+006											0.00	328.87	328.87	0.01	0.01	330.87
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	301800											0.00	16.11	16.11	0.00	0.00	16.20
Regional Shopping Center	71373.1											0.00	3.81	3.81	0.00	0.00	3.83
Total												**0.00**	**1,620.19**	**1,620.19**	**0.04**	**0.04**	**1,630.04**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	5.91232e+006											0.00	315.50	315.50	0.01	0.01	317.42
General Office Building	4.70297e+006											0.00	250.97	250.97	0.00	0.00	252.50
General Office Building	5.2674e+006											0.00	281.09	281.09	0.01	0.01	282.80
Hotel	1.01617e+007											0.00	542.27	542.27	0.01	0.01	545.57
Refrigerated Warehouse-No Rail	260013											0.00	13.88	13.88	0.00	0.00	13.96
Regional Shopping Center	63549.5											0.00	3.39	3.39	0.00	0.00	3.41
Total												**0.00**	**1,407.10**	**1,407.10**	**0.03**	**0.03**	**1,415.66**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	4.2372e+006					937.92	0.06	0.02	945.64
General Office Building	6.74096e+006					1,492.13	0.09	0.03	1,504.42
General Office Building	7.54999e+006					1,671.21	0.10	0.04	1,684.98
Hotel	4.077e+006					902.46	0.05	0.02	909.89
Refrigerated Warehouse-No Rail	4.51669e+006					999.78	0.06	0.02	1,008.02
Regional Shopping Center	625887					138.54	0.01	0.00	139.68
Total						**6,142.04**	**0.37**	**0.13**	**6,192.63**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	4.08819e+006					904.93	0.05	0.02	912.39
General Office Building	6.34353e+006					1,404.16	0.08	0.03	1,415.72
General Office Building	7.10487e+006					1,572.68	0.09	0.04	1,585.64
Hotel	3.84075e+006					850.16	0.05	0.02	857.16
Refrigerated Warehouse-No Rail	4.49541e+006					995.07	0.06	0.02	1,003.27
Regional Shopping Center	595475					131.81	0.01	0.00	132.90
Total						**5,858.81**	**0.34**	**0.13**	**5,907.08**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated											0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					457.00	3.91	0.11	572.20
Unmitigated					457.00	3.91	0.11	572.20
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	19.5357 / 0					56.53	0.60	0.02	74.10
General Office Building	54.2157 / 0					156.87	1.66	0.04	205.63
Hotel	41.756 / 36.081					209.55	1.29	0.04	247.84
Refrigerated Warehouse-No Rail	6.62828 / 0					19.18	0.20	0.01	25.14
Regional Shopping Center	5.1392 / 0					14.87	0.16	0.00	19.49
Total						**457.00**	**3.91**	**0.11**	**572.20**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	19.5357 / 0					56.53	0.60	0.02	74.10
General Office Building	54.2157 / 0					156.87	1.66	0.04	205.63
Hotel	41.756 / 36.081					209.55	1.29	0.04	247.84
Refrigerated Warehouse-No Rail	6.62828 / 0					19.18	0.20	0.01	25.14
Regional Shopping Center	5.1392 / 0					14.87	0.16	0.00	19.49
Total						**457.00**	**3.91**	**0.11**	**572.20**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					534.84	31.61	0.00	1,198.61
Unmitigated					1,528.12	90.31	0.00	3,424.61
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	2263					459.37	27.15	0.00	1,029.47
General Office Building	2614					530.62	31.36	0.00	1,189.15
Hotel	1285					260.84	15.42	0.00	584.57
Refrigerated Warehouse-No Rail	1031					209.28	12.37	0.00	469.02
Regional Shopping Center	335					68.00	4.02	0.00	152.40
Total						**1,528.11**	**90.32**	**0.00**	**3,424.61**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	792.05					160.78	9.50	0.00	360.32
General Office Building	914.9					185.72	10.98	0.00	416.20
Hotel	449.75					91.30	5.40	0.00	204.60
Refrigerated Warehouse-No Rail	360.85					73.25	4.33	0.00	164.16
Regional Shopping Center	117.25					23.80	1.41	0.00	53.34
Total						**534.85**	**31.62**	**0.00**	**1,198.62**

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					27.16	0.00	0.00	27.16
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Net New Trees

Species Class

	Number of Trees	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
		tons				MT			
Mixed Hardwood	37					27.16	0.00	0.00	27.16
Total						**27.16**	**0.00**	**0.00**	**27.16**

NBCU ALT10 BAU LADWP GHG

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	200	1000sqft
Day-Care Center	5	1000sqft
Refrigerated Warehouse-No Rail	50	1000sqft
Hotel	500	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	12		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics - Alt10 GHG

Land Use - According to Alt10 Project description, area of hotel (500 rooms) = 450,000 sq.ft.

Off-road Equipment -

Vehicle Trips - Mobile trip/day/size based on traffic data.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Area Coating -

Energy Use - Using Title 24 - 2005 values for electricity energy intensity.

Water And Wastewater - Indoor water use is based on information from matrix. Irrigation is used as outdoor water for hotel.

Solid Waste - Solid waste is based on information from matrix.

Waste Mitigation - Divert 49%

Construction Phase - Construction calculated separately.

Off-road Equipment -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	5,274.23	5,274.23	0.12	0.05	5,293.50
Mobile											0.00	1,426.66	1,426.66	0.05	0.00	1,427.61
Waste											364.98	0.00	364.98	21.57	0.00	817.94
Water											0.00	469.10	469.10	1.91	0.05	525.08
Total											**364.98**	**7,169.99**	**7,534.97**	**23.65**	**0.10**	**8,064.13**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	5,274.23	5,274.23	0.12	0.05	5,293.50
Mobile											0.00	1,426.66	1,426.66	0.05	0.00	1,427.61
Waste											186.14	0.00	186.14	11.00	0.00	417.15
Water											0.00	469.10	469.10	1.91	0.05	525.08
Total											**186.14**	**7,169.99**	**7,356.13**	**13.08**	**0.10**	**7,663.34**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	1,426.66	1,426.66	0.05	0.00	1,427.61
Unmitigated											0.00	1,426.66	1,426.66	0.05	0.00	1,427.61
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	8.50	8.50	8.50	9,774	9,774
General Office Building	340.00	340.00	340.00	749,181	749,181
Hotel	770.00	770.00	770.00	1,401,120	1,401,120
Refrigerated Warehouse-No Rail	188.50	188.50	188.50	473,677	473,677
Total	1,307.00	1,307.00	1,307.00	2,633,752	2,633,752

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Day-Care Center	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
Hotel	8.90	13.30	7.40	0.00	0.00	100.00
Refrigerated Warehouse-No Rail	8.90	13.30	7.40	0.00	0.00	100.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.00	4,514.43	4,514.43	0.11	0.04	4,529.08
Electricity Unmitigated											0.00	4,514.43	4,514.43	0.11	0.04	4,529.08
NaturalGas Mitigated											0.00	759.79	759.79	0.01	0.01	764.42
NaturalGas Unmitigated											0.00	759.79	759.79	0.01	0.01	764.42
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Day-Care Center	58950											0.00	3.15	3.15	0.00	0.00	3.16
General Office Building	2.488e+006											0.00	132.77	132.77	0.00	0.00	133.58
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	58500											0.00	3.12	3.12	0.00	0.00	3.14
Total												**0.00**	**759.79**	**759.79**	**0.01**	**0.01**	**764.41**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Day-Care Center	58950											0.00	3.15	3.15	0.00	0.00	3.16
General Office Building	2.488e+006											0.00	132.77	132.77	0.00	0.00	133.58
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	58500											0.00	3.12	3.12	0.00	0.00	3.14
Total												**0.00**	**759.79**	**759.79**	**0.01**	**0.01**	**764.41**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Day-Care Center	35400					19.89	0.00	0.00	19.95
General Office Building	3.048e+006					1,712.32	0.04	0.02	1,717.87
Hotel	4.077e+006					2,290.39	0.05	0.02	2,297.82
Refrigerated Warehouse-No Rail	875500					491.84	0.01	0.00	493.44
Total						**4,514.44**	**0.10**	**0.04**	**4,529.08**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Day-Care Center	35400					19.89	0.00	0.00	19.95
General Office Building	3.048e+006					1,712.32	0.04	0.02	1,717.87
Hotel	4.077e+006					2,290.39	0.05	0.02	2,297.82
Refrigerated Warehouse-No Rail	875500					491.84	0.01	0.00	493.44
Total						**4,514.44**	**0.10**	**0.04**	**4,529.08**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated											0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					469.10	1.91	0.05	525.08
Unmitigated					469.10	1.91	0.05	525.08
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Day-Care Center	0.146 / 0					1.07	0.00	0.00	1.20
General Office Building	13.14 / 0					96.27	0.40	0.01	108.08
Hotel	47.45 / 2.1535					361.07	1.46	0.04	403.79
Refrigerated Warehouse-No Rail	1.46 / 0					10.70	0.04	0.00	12.01
Total						**469.11**	**1.90**	**0.05**	**525.08**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Day-Care Center	0.146 / 0					1.07	0.00	0.00	1.20
General Office Building	13.14 / 0					96.27	0.40	0.01	108.08
Hotel	47.45 / 2.1535					361.07	1.46	0.04	403.79
Refrigerated Warehouse-No Rail	1.46 / 0					10.70	0.04	0.00	12.01
Total						**469.11**	**1.90**	**0.05**	**525.08**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					186.14	11.00	0.00	417.15
Unmitigated					364.98	21.57	0.00	817.94
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Day-Care Center	35					7.10	0.42	0.00	15.92
General Office Building	278					56.43	3.34	0.00	126.47
Hotel	1285					260.84	15.42	0.00	584.57
Refrigerated Warehouse-No Rail	200					40.60	2.40	0.00	90.98
Total						**364.97**	**21.58**	**0.00**	**817.94**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Day-Care Center	17.85					3.62	0.21	0.00	8.12
General Office Building	141.78					28.78	1.70	0.00	64.50
Hotel	655.35					133.03	7.86	0.00	298.13
Refrigerated Warehouse-No Rail	102					20.71	1.22	0.00	46.40
Total						**186.14**	**10.99**	**0.00**	**417.15**

9.0 Vegetation

NBCU ALT10 BAU SCE GHG

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	442.32	1000sqft
General Office Building	495.41	1000sqft
General Light Industry	337.89	1000sqft
Refrigerated Warehouse-No Rail	257.95	1000sqft
Hotel	500	Room
Regional Shopping Center	39.22	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	12		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics - Alt10 GHG

Land Use - According to Alt10 Project Description, area for hotel (500 rooms) = 450,000 sq.ft.

Off-road Equipment -

Vehicle Trips - Mobile trip/day/size based on traffic data.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Vechicle Emission Factors - CO2 emissions for 'Running' and 'Starting' have been updated based on Table 4.4 of Appendix d, CalEEMod User's Guide.

Energy Use - Using values from Title 24 2005.

Water And Wastewater - Indoor water use based on information from matrix. Outdoor water use for hotel is irrigation.

Solid Waste - Solid waste based on information from matrix.

Sequestration -

Waste Mitigation - Divert 49%

Construction Phase - Construction calculated separately.

Off-road Equipment -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	9,691.19	9,691.19	0.40	0.17	9,751.64
Mobile											0.00	4,527.72	4,527.72	0.14	0.00	4,530.70
Waste											1,528.12	0.00	1,528.12	90.31	0.00	3,424.61
Water											0.00	666.00	666.00	4.44	0.12	796.81
Total											**1,528.12**	**14,884.91**	**16,413.03**	**95.29**	**0.29**	**18,503.76**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.00	0.00	0.00	0.00	0.00	0.00
Energy											0.00	9,691.19	9,691.19	0.40	0.17	9,751.64
Mobile											0.00	4,527.72	4,527.72	0.14	0.00	4,530.70
Waste											779.34	0.00	779.34	46.06	0.00	1,746.55
Water											0.00	666.00	666.00	4.44	0.12	796.81
Total											**779.34**	**14,884.91**	**15,664.25**	**51.04**	**0.29**	**16,825.70**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	4,527.72	4,527.72	0.14	0.00	4,530.70
Unmitigated											0.00	4,527.72	4,527.72	0.14	0.00	4,530.70
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	398.71	398.71	398.71	1,001,908	1,001,908
General Office Building	734.25	734.25	734.25	1,617,903	1,617,903
General Office Building	822.38	822.38	822.38	1,812,094	1,812,094
Hotel	770.00	770.00	770.00	1,401,120	1,401,120
Refrigerated Warehouse-No Rail	972.47	972.47	972.47	2,443,698	2,443,698
Regional Shopping Center	67.07	67.07	67.07	113,626	113,626
Total	3,764.88	3,764.88	3,764.88	8,390,350	8,390,350

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
General Office Building	8.90	13.30	7.40	0.00	0.00	100.00
Hotel	8.90	13.30	7.40	0.00	0.00	100.00
Refrigerated Warehouse-No Rail	8.90	13.30	7.40	0.00	0.00	100.00
Regional Shopping Center	8.90	13.30	7.40	0.00	0.00	100.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.00	8,071.00	8,071.00	0.36	0.14	8,121.58
Electricity Unmitigated											0.00	8,071.00	8,071.00	0.36	0.14	8,121.58
NaturalGas Mitigated											0.00	1,620.19	1,620.19	0.03	0.03	1,630.06
NaturalGas Unmitigated											0.00	1,620.19	1,620.19	0.03	0.03	1,630.06
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	6.69032e+006											0.00	357.02	357.02	0.01	0.01	359.19
General Office Building	5.50246e+006											0.00	293.63	293.63	0.01	0.01	295.42
General Office Building	6.16285e+006											0.00	328.87	328.87	0.01	0.01	330.87
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	301800											0.00	16.11	16.11	0.00	0.00	16.20
Regional Shopping Center	71373.1											0.00	3.81	3.81	0.00	0.00	3.83
Total												**0.00**	**1,620.19**	**1,620.19**	**0.04**	**0.04**	**1,630.04**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	6.69032e+006											0.00	357.02	357.02	0.01	0.01	359.19
General Office Building	5.50246e+006											0.00	293.63	293.63	0.01	0.01	295.42
General Office Building	6.16285e+006											0.00	328.87	328.87	0.01	0.01	330.87
Hotel	1.16325e+007											0.00	620.75	620.75	0.01	0.01	624.53
Refrigerated Warehouse-No Rail	301800											0.00	16.11	16.11	0.00	0.00	16.20
Regional Shopping Center	71373.1											0.00	3.81	3.81	0.00	0.00	3.83
Total												**0.00**	**1,620.19**	**1,620.19**	**0.04**	**0.04**	**1,630.04**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	4.2372e+006					1,232.48	0.06	0.02	1,240.20
General Office Building	6.74096e+006					1,960.75	0.09	0.03	1,973.04
General Office Building	7.54999e+006					2,196.07	0.10	0.04	2,209.83
Hotel	4.077e+006					1,185.88	0.05	0.02	1,193.31
Refrigerated Warehouse-No Rail	4.51669e+006					1,313.77	0.06	0.02	1,322.01
Regional Shopping Center	625887					182.05	0.01	0.00	183.19
Total						**8,071.00**	**0.37**	**0.13**	**8,121.58**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	4.2372e+006					1,232.48	0.06	0.02	1,240.20
General Office Building	6.74096e+006					1,960.75	0.09	0.03	1,973.04
General Office Building	7.54999e+006					2,196.07	0.10	0.04	2,209.83
Hotel	4.077e+006					1,185.88	0.05	0.02	1,193.31
Refrigerated Warehouse-No Rail	4.51669e+006					1,313.77	0.06	0.02	1,322.01
Regional Shopping Center	625887					182.05	0.01	0.00	183.19
Total						**8,071.00**	**0.37**	**0.13**	**8,121.58**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated											0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Landscaping											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					666.00	4.44	0.12	796.81
Unmitigated					666.00	4.44	0.12	796.81
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	22.1997 / 0					84.33	0.68	0.02	104.30
General Office Building	61.6087 / 0					234.03	1.89	0.05	289.44
Hotel	47.45 / 36.081					296.84	1.46	0.04	340.25
Refrigerated Warehouse-No Rail	7.53214 / 0					28.61	0.23	0.01	35.39
Regional Shopping Center	5.84 / 0					22.18	0.18	0.00	27.44
Total						**665.99**	**4.44**	**0.12**	**796.82**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	22.1997 / 0					84.33	0.68	0.02	104.30
General Office Building	61.6087 / 0					234.03	1.89	0.05	289.44
Hotel	47.45 / 36.081					296.84	1.46	0.04	340.25
Refrigerated Warehouse-No Rail	7.53214 / 0					28.61	0.23	0.01	35.39
Regional Shopping Center	5.84 / 0					22.18	0.18	0.00	27.44
Total						**665.99**	**4.44**	**0.12**	**796.82**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					779.34	46.06	0.00	1,746.55
Unmitigated					1,528.12	90.31	0.00	3,424.61
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	2263					459.37	27.15	0.00	1,029.47
General Office Building	2614					530.62	31.36	0.00	1,189.15
Hotel	1285					260.84	15.42	0.00	584.57
Refrigerated Warehouse-No Rail	1031					209.28	12.37	0.00	469.02
Regional Shopping Center	335					68.00	4.02	0.00	152.40
Total						**1,528.11**	**90.32**	**0.00**	**3,424.61**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	1154.13					234.28	13.85	0.00	525.03
General Office Building	1333.14					270.62	15.99	0.00	606.47
Hotel	655.35					133.03	7.86	0.00	298.13
Refrigerated Warehouse-No Rail	525.81					106.73	6.31	0.00	239.20
Regional Shopping Center	170.85					34.68	2.05	0.00	77.72
Total						**779.34**	**46.06**	**0.00**	**1,746.55**

9.0 Vegetation