



County of Los Angeles
CHIEF EXECUTIVE OFFICE

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SACHI A. HAMAI
Interim Chief Executive Officer

"To Enrich Lives Through Effective And Caring Service"

May 26, 2015

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

Dear Supervisors:

30 May 26, 2015


PATRICK O'QUINN
ACTING EXECUTIVE OFFICER

**PUBLIC LIBRARY:
QUARTZ HILL LIBRARY PROJECT
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM
APPROVE PROJECT, EXERCISE OPTION TO LEASE AND
EXECUTE LEASE AGREEMENT
AUTHORIZE DEPOSIT INTO ESCROW FUND
(FIFTH DISTRICT)
(3 VOTES)**

SUBJECT

Approval of the recommended actions will adopt the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, approve the proposed Quartz Hill Library Project, exercise the County's Option to Lease and execute the Lease Agreement, and authorize deposit of fund into an escrow account.

IT IS RECOMMENDED THAT THE BOARD:

1. Consider the Mitigated Negative Declaration for the Quartz Hill Library Project together with any comments received during the public review period; find that the Mitigated Negative Declaration reflects the independent judgment and analysis of the Board; adopt the Mitigation Monitoring and Reporting Program, finding that the Mitigation Monitoring and Reporting Program is adequately designed to ensure compliance with the mitigation measures during Project implementation; and find on the basis of the whole record before the Board that there is no substantial evidence the Project will have a significant effect on the environment; and adopt the Mitigated Negative Declaration.

2. Approve the Quartz Hill Library Project, exercise the County's Option to Lease, and instruct the Mayor to execute, upon presentation and in the format substantially similar to the proposed Lease Agreement with Griffin|Swinerton for Quartz Hill Library.
3. Authorize the deposit of \$12.0 million into an escrow fund held by U.S. Bank N.A.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of the recommended actions will adopt the Mitigated Negative Declaration (MND) and Mitigation Monitoring and Reporting Program (MMRP) for the Quartz Hill Library Project (Project); approve the Project and exercise the County's option to execute a Lease Agreement (Lease) with Griffin|Swinerton and execute the Lease upon presentation to the Board on or before June 1, 2015 in substantially the form attached (Attachment A); and authorize the deposit of monies into an escrow fund for the purpose of making lease payments to Griffin|Swinerton.

On August 19, 2014, the Board found that Griffin|Swinerton (GS) was the most qualified and best value proposer, and approved an Option to Lease and Design Agreement for design services and an option to lease the proposed new Quartz Hill Library. The recommended actions will allow Project construction to move forward, with the scheduled substantial completion in August 2016, per the attached Project Schedule (Attachment B), and will allow the County to enter into a lease with an option to purchase the new library building upon completion.

The new Quartz Hill Library will replace the existing single-story 3,530 square-foot County library located in leased space with a new single-story 12,514 square-foot library located at 5040 West Avenue M-2 West, in the unincorporated area of Quartz Hill under the recommended lease. The proposed library will include adult, teen, and children's reading areas, and an early childhood/family place area programming space, a homework center, two group study rooms, a 100-seat community meeting room with audio-visual system, express-service checkout machines at the lobby, information services pods, public access computers, Wi-Fi, staff areas, public restrooms, and associated site improvements, including landscaping, walkways, outdoor reading areas and security lighting. In keeping with the Board's policy on sustainability, the building is being designed to achieve at least a Leadership in Energy and Environmental Design (LEED) Silver rating from the United States Green Building Council and will include photo-voltaic panels to reduce energy consumption.

Implementation of Strategic Plan Goals

The proposed Project supports the County's Strategic Plan Goals of Operational Effectiveness/Fiscal Sustainability (Goal 1) and Integrated Services Delivery (Goal 3), by investing in public infrastructure that will enhance the cultural, recreational, and lifelong learning opportunities for County residents.

FISCAL IMPACT/FINANCING

The Project Lease will commence following substantial completion of building construction in August 2016 and is for a three-year term. The lease has three annual payments due in an amount not-to-exceed \$3,645,000 each, for a total of lease payments of \$10.935 million. The County has previously funded \$1,870,000 for land and design costs under the Option to Lease and Design Agreement with Griffin|Swinerton. The Lease amortizes total remaining Project costs of approximately \$10,500,000, which reflects a construction cost of \$9.97 million and Project financing-related costs of approximately \$493,000. Fifth District capital project discretionary funding and

library operating budget savings previously budgeted in the Quartz Hill capital project account (C.P. 77606) will be transferred to the escrow account in an amount sufficient to make all lease payments. The recommended actions will have no impact to the General Fund.

Pursuant to the Lease terms, the County will have the ability to exercise an option to purchase the building at any time during the term of the Lease, and the Chief Executive Office (CEO) will return to the Board to recommend doing so if the financial analysis indicates it is in the best financial interest of the County to do so.

Operating Budget Impact

The Public Library's Fiscal Year (FY) 2014-15 operating budget for the existing Quartz Hill Library is \$1,206,000. It is anticipated that the new library will begin operation in FY 2016-17. If approved, the annual operating budget for the new Quartz Hill Library is estimated at \$1,496,000 based on increased staffing, support, facility maintenance, and other operating costs that will be required. This represents a net increase of approximately \$290,000. Public Library will work with the CEO to determine the appropriate level of funding as the proposed Project nears completion. The operating costs will be funded through the Public Library's operating budget.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The recommended action to exercise the option to lease and execute the Lease Agreement is authorized by Government Code 25351, which allows the Board, among other things, to lease buildings for library use. The Option to Lease was obtained by County pursuant to the August 19, 2014 Option to Lease and Design Agreement with GS.

Under the proposed form of Lease, no lease payments will be owed by the County until 90 days after the building is substantially complete and has been accepted by the County. The County's obligation to make lease payments after completion of the building will be secured by the deposit of \$12.0 million into an escrow fund maintained by U.S. Bank N.A. (U.S. Bank). The Treasurer and Tax Collector (Treasurer) selected U.S. Bank to serve as escrow agent following a competitive solicitation process and in accordance with the Treasurer's ability to enter into banking contracts pursuant to Section 53630 et seq. of the Government Code. The use of an escrow agent helped facilitate a reduction in annual payments to GS under the Lease.

County Counsel has reviewed the Lease as attached, and will review the final Lease again and approve prior to presentation to the Chair for signature.

ENVIRONMENTAL DOCUMENTATION

As lead agency under the California Environmental Quality Act (CEQA), the County prepared an Initial Study (IS) for the proposed Project. The IS identified potentially significant impacts on aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, and noise. However, prior to the release of the IS/MND for public review, revisions to the proposed Project were made or agreed to which would avoid the effects or mitigate the potentially significant impacts to a point where no significant effects would occur, as follows:

- Aesthetics: Use appropriate screening to buffer views of construction equipment, and materials and soil in staging areas.

- **Biological Resources:** If active nests are found at the Project site or a 100-foot buffer, between February 15 and September 15, establish a construction avoidance zone and stop all construction activities within the established zone until the nests become inactive, as determined by a qualified biologist.
- **Cultural Resources:** Stop work if buried cultural deposits, human remains, or paleontological resources are encountered. Construction shall not resume until a qualified archaeologist, the County Department of Medical Examiner-Coroner, or a qualified paleontologist, respectively, have made appropriate findings and developed a response plan, if necessary.
- **Geology and Soils:** Implement applicable recommendations contained in the Geotechnical Engineering Report prepared by Earth Systems Southern California (2006) to reduce the potential for hydrocompression during construction and implementation of the proposed Project.
- **Hazard and Hazardous Materials:** If contaminated soil is encountered during construction, seek the professional recommendation of a consultant specialized in the handling and identification of hazardous materials for further soil analysis.
- **Noise:** Prior to and during construction, the contractor shall implement noise mitigation measures to attenuate noise levels during construction to the County's threshold of 70dBA Lmax defined by the County's municipal code; limit construction activities to between 7 a.m. and 7 p.m., Monday through Friday; design the HVAC system to ensure rooftop HVAC equipment complies with Section 12.08.390 of the Los Angeles County Code; and construct a permanent noise barrier (6-foot-high minimum block wall) at the south and east property lines between the project site and the adjacent residential properties at the south and east property lines.

The IS and Project revisions showed that there is no substantial evidence, in light of the whole record before the County, that the proposed Project as revised may have a significant effect on the environment. Based on the IS and proposed Project revisions, an MND was prepared for the proposed Project and a proposed MMRP (Chapter 3 of Attachment C) was prepared to ensure compliance with the proposed environmental mitigation measures included in the Final MND (Attachment C) during implementation of the proposed Project.

Public Notice was published in the Antelope Valley Press on January 9, 2015, pursuant to Public Resources Code Section 21092 and posted pursuant to Section 21092.3. During the public comment period, which ended on February 9, 2015, two comment letters were received from public agencies (the County of Los Angeles Fire Department and County Sanitation Districts of Los Angeles County). The comment letters, as well as the responses to comments provided therein, are contained in the Final MND and have been sent to the commenting public agency pursuant to Section 21092.5 of the Public Resources Code.

The location of these documents and other materials constituting the record of the proceedings upon which the Board's decision is based in this matter is: County of Los Angeles Chief Executive Office, Capital Programs Division, 500 West Temple Street, 7th Floor, Los Angeles, California 90012. The custodian of such documents and materials is Ms. Alisa Chepeian, Senior Analyst CEO.

The proposed Project is not exempt from payment of a fee to the California Department of Fish and Wildlife pursuant to Section 711.4 of the Fish and Game Code to defray the costs of fish and wildlife protection and management incurred by the California Department of Fish and Wildlife. Upon the Board's adoption of the MND, the CEO will file a Notice of Determination in accordance with Section 21152(a) of the California Public Resources Code and pay the required filing and processing fees with the Registrar-Recorder/County Clerk of approximately \$2,210.00.

CONTRACTING PROCESS

Following a competitive solicitation (RFP) process, GS was awarded an Option to Lease and Design Agreement with the County on August 19, 2014.

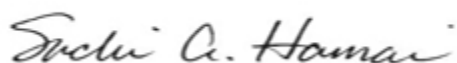
IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approval of the recommended actions will have no impact on current County services or projects.

CONCLUSION

Please return one adopted copy of this Board letter to the Chief Executive Office, Capital Programs Division; and Public Library.

Respectfully submitted,



SACHI A. HAMAI

Interim Chief Executive Officer

SAH:TT:BMB

FC:PB:zu

Enclosures

c: Executive Office, Board of Supervisors
County Counsel
Public Library

May 26, 2015

ATTACHMENT A

**PUBLIC LIBRARY:
QUARTZ HILL LIBRARY PROJECT
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM
APPROVE PROJECT AND LEASE AGREEMENT**

**LEASE AGREEMENT BETWEEN GRIFFIN|SWINERTON
AND
COUNTY OF LOS ANGELES**

(SEE ATTACHED)

**COUNTY OF LOS ANGELES
CHIEF EXECUTIVE OFFICE
LEASE AGREEMENT**

**DEPARTMENT: Public Library , as Tenant
LANDLORD: Griffin/Swinerton, a joint venture**

5040 West Avenue M-2, Lancaster, County of Los Angeles, CA 93536

78377

COUNTY OF LOS ANGELES
CHIEF EXECUTIVE OFFICE
LEASE AGREEMENT

THIS LEASE is entered into as of the 26th day of May, 2015 ("Effective Date") between GRIFFIN/SWINERTON, a joint venture ("Landlord"), and COUNTY OF LOS ANGELES, a body politic and corporate ("Tenant" or "County").

Landlord and Tenant agree:

1. **BASIC LEASE INFORMATION.** The following terms as used herein shall have the meanings provided in this Section 1, unless otherwise specifically modified by provisions of this Lease.

1.1 Defined Terms Relating to the Lease:

(a) Landlord's Address for Notice: Griffin/Swinerton
385 Second Street, Laguna Beach, CA 92651
Attn: Roger Torriero

(b) Tenant's Address for Notice: Chief Executive Office
Real Estate Division
222 South Hill Street, 3rd Floor
Los Angeles, California 90012
Attention: Director of Real Estate

With a copy to:

County of Los Angeles Public Library
7400 East Imperial Highway
Downey, California 90242
Attention: County Librarian

(c) Premises: That certain real property of approximately 1.6 acres, including all improvements therein or to be provided by Landlord under the terms of this Lease, and commonly known 5040 West Avenue M-2, Lancaster, County of Los Angeles, CA 93536 as more particularly described in Exhibit B attached hereto.

(d) Building: The building located at 5040 West Avenue M-2 West, Lancaster, CA, 93536 which is to be constructed by Landlord upon the real property described more particularly in Exhibit B attached hereto (the "Property");

(e) Term: Three years commencing upon Tenant's Acceptance of the Premises as defined in Section 3(a) (the "Commencement Date"), with payment of rent to commence 90 days after the date of Tenant's Acceptance of the Premises as

defined in Section 3(a) (the "Rent Commencement Date"); and terminating at midnight on the day before the 3rd anniversary of the Commencement Date (the "Termination Date"), subject to earlier termination by Tenant as provided herein. The phrase "Term of this Lease" or "the Term hereof" as used in this Lease, or words of similar import, shall refer to the initial Term of this Lease together with any additional Extension Term for which an option has been validly exercised.

- (f) Base Rent: \$3,644,172.11 per year (which is adjustable only as provided in Section 4 hereof.)
- (g) Total Square Feet in the Premises: 12, 514 gross square feet
- (h) Use: Public Library and community room.
- (i) Initial Departmental Use: Public Library
- (j) Parking Spaces: 53 parking stalls (51 unreserved and 2 reserved)

- (k) Tenant Improvement Allowance: \$931,760 for furniture, fixtures, and equipment for the library and for furniture, fixtures, and equipment for the community room, in aggregate.

- 1.2 Exhibits to Lease:
 - Exhibit A–Floor Plan
 - Exhibit B–Legal Description of Property
 - Exhibit C– Commencement Date Memorandum
 - Exhibit D–Tenant Estoppel Certificate
 - Exhibit E–Subordination, Non-disturbance and Attornment Agreement
 - Exhibit F- Nondisturbance Agreement
 - Exhibit G- Request for Notice
 - Exhibit H-Community Business Enterprises Form
 - Exhibit I – County Library Low Voltage Specifications
 - Exhibit J – Payment Schedule

2. PREMISES

Landlord does hereby lease to Tenant, and Tenant does hereby lease from Landlord, upon the terms and conditions herein set forth, the Premises described in Section 1 and Exhibit A attached hereto.

3. COMMENCEMENT AND EXPIRATION DATES

(a) Term. The term of this Lease shall commence upon the Commencement Date and terminate on the Termination Date. Within 30 days of determining the Rent Commencement Date, Landlord and Tenant shall acknowledge in writing the Rent Commencement Date by executing the Rent Commencement Date Memorandum and Confirmation of Lease Terms attached as Exhibit C. The Rent Commencement Date shall be the 90 days after the date of Tenant's Acceptance of the Premises. The term "Tenant's Acceptance of the Premises" as used in this Lease shall mean the date upon which the Premises are Substantially Complete, as evidenced by: (i) the architect issuing the Certificate of Substantial Completion (AIA form G704), and (ii) Tenant's approval (after a reasonable opportunity to inspect the Premises, and compilation of a minor punch list to be agreed upon by Landlord and Tenant) of the architect's issuance of a Certificate of Substantial Completion, which approval shall not be unreasonably withheld. The term "Substantially Complete" or "Substantial Completion" as used in this Lease shall mean compliance with all of the following: (1) the shell and core of the Building are complete and in compliance with all applicable laws and codes, and all of the building systems are operational to the extent necessary to service the Premises; (2) Landlord has sufficiently completed all the work required to be performed by Landlord in accordance with this Lease, including the installation of furniture and equipment, if so required (except minor punch list items which Landlord shall thereafter promptly complete), such that Tenant can conduct normal business operations from the Premises; (3) Landlord has obtained a certificate of occupancy for the Building, or a temporary certificate of occupancy for that portion of the Building that includes all of the Premises, or its equivalent; (4) Tenant has been provided with the number of parking privileges and spaces to which it is entitled under this Lease; (5) if Landlord is responsible for the installation of telecommunication systems, then Landlord's portion of such systems shall be fully installed and operational; (6) all utilities have permanent connections approved by the supplier. The term "Substantial Completion Date" as used in this Lease shall mean the date the architect issues the Certificate of Substantial Completion for the Building.

(b) Termination Right. If the Commencement Date has not occurred within 180 days from the scheduled date of substantial completion which date shall be the last to occur of August 1, 2016 or the date Landlord and Tenant shall agree as the date of substantial completion (adjusted for County Delays [as defined in Section 10.8 of the Option to Lease and Design Agreement, dated August 19, 2014, between Landlord and Tenant ("Option Agreement")]), Tenant may thereafter, at any time before the Commencement Date occurs, terminate this Lease effective upon the giving of written notice to Landlord and the parties shall have no further obligations to one another hereunder.

(c) Early Possession. Tenant shall be entitled to possession of the Premises not less than 30 days prior to the Substantial Completion Date for the purpose of installing Tenant's furniture, fixtures and equipment in the Premises. Such early occupancy shall be subject to all provisions hereof but shall not advance the Termination Date, and Tenant shall not pay Base Rent for such early occupancy period.

4. RENT.

(a) Rent Defined. All monetary obligations of Tenant to Landlord under the terms of this Lease are deemed to be rent.

(b) Payment. Tenant shall cause payment of rent to be received by Landlord in lawful money of the United States, without offset or deduction (except as specifically permitted in this Lease), on or before the day on which it is due. Acceptance of a payment which is less than the amount then due will not be a waiver of Landlord's rights to the balance of such rent, regardless of Landlord's endorsement of any check so stating. If any installment of rent or any other sum due from Tenant is not received by Landlord or Landlord's designee within five (5) calendar days after the due date therefor, then Tenant shall pay to Landlord a late charge equal to five percent (5%) of the amount due. The late charge shall be deemed additional rent and the right to require it shall be in addition to all of Landlord's other rights and remedies hereunder, at law and/or in equity and shall not be construed as liquidated damages or as limiting Landlord's remedies in any manner.

(c) Base Rent. Tenant shall pay Landlord the Base Rent stated in Section 1 during the Term hereof. The first annual rent payment shall be due and payable within thirty (30) days after the Rent Commencement Date in the total amount shown in Section 1(f) hereof. An annual rental payment in the same amount shall be due and payable without demand on or within ten (10) days of each anniversary of the Commencement Date. Landlord shall file a payment voucher with the County of Los Angeles Public Library department at least thirty (30) days prior to the Rent Commencement Date, provided that failure to file such payment voucher with the County of Los Angeles Public Library shall not relieve Tenant of its obligation to timely pay Base Rent (or any other charges due hereunder) to Landlord. Base Rent for any partial month shall be prorated in proportion to the number of days in such month.

(d) Operating Expenses. Commencing on the Rent Commencement Date and during the Term hereof, Tenant agrees to pay all of Landlord's Operating Expenses within 30 days of receipt of an invoice from Landlord for such Operating Expenses. "Operating Expenses" shall mean all expenses, costs and amounts of every kind and nature which Landlord shall pay because of or in connection with the ownership, management, maintenance, repair, replacement, restoration or operation of the Property, including any amounts paid for the following items: (i) the cost of operating, maintaining, repairing, renovating and managing the utility systems, mechanical systems, sanitary and storm drainage systems, and all other systems and equipment, and the cost of supplies and equipment and maintenance and service contracts in connection therewith; (ii) the cost of licenses, certificates, permits and inspections, and the cost of contesting the validity or applicability of any governmental enactments which may affect Operating Expenses; (iii) the cost of insurance carried by Landlord during the Term, including deductibles and excluding any insurance related to construction of the Premises or covering the Premises during construction (e.g., builder's risk insurance); (iv) the cost of landscaping, re-lamping, supplies, tools, equipment and materials, and all fees, charges and other costs (including reasonable and customary consulting fees, legal fees and accounting fees, as reasonably approved by Tenant) incurred in connection with the management, operation, repair and maintenance of the Property, including graffiti removal; (v) the cost of parking area repair, restoration, and maintenance; (vi) any equipment rental agreements or management agreements (including the cost of any management fee and the fair rental value of any office space provided

thereunder); (vii) payments under any pertinent and reasonable easement, license, operating agreement, declaration, restrictive covenant, underlying or ground lease (excluding rent), or instrument pertaining to the sharing of costs by the Property; (viii) replacement of wall and floor coverings, ceiling tiles and fixtures, maintenance and replacement of curbs and walkways, repair to roofs and re-roofing; (ix) amortization (including interest on the unamortized cost) of the cost of acquiring or the rental expense of personal property used in the maintenance, operation and repair of the Property; and (x) the cost of any capital improvements or other costs (I) which are intended as a labor-saving device or to effect other economies in the operation or maintenance of the Real Property, (II) made to the Property or any portion thereof after the Commencement Date that are required under any governmental law or regulation, or (III) which are reasonably determined by Landlord to be in the best interests of the Property; provided, however, that if any such cost described in (I), (II) or (III) above, is a capital expenditure, such cost shall be amortized (including interest on the unamortized cost) over its useful life as Landlord shall reasonably determine. All payments of operating expenses will be deemed additional rent under this Lease. The monthly or quarterly Operating Expenses statements or invoices shall include all supporting documentation such as applicable invoices, purchase orders and proof of payment. A clear distinction shall be made between maintenance expenses, on the one hand, and repairs or maintenance subject to the one-year warranty provided by the Landlord's general contractor, on the other. Tenant reserves the right to review and audit all Operating Expenses for up to two years after receipt of the Operating Expenses statement or invoice. Any discrepancies uncovered by Tenant shall be addressed by the Landlord within thirty days of a receiving a written report from the Tenant. If Tenant does not receive a satisfactory response from Landlord within the thirty-day period, then any disputed amounts shall be deducted from future rent payments. If the parties are unable to resolve any audit disputes then the matter shall be submitted to a third party mediator and the costs of mediation shall be equally shared by the parties.

(e) Real Property Taxes. As used in this Lease, the term "Real Property Taxes" will include any form of assessment; real estate, general, special, ordinary or extraordinary, or rental levy or tax (other than inheritance, personal income, or estate taxes); improvement bond; and license fee imposed upon or levied against any legal or equitable interest of Landlord in the Premises and incurred during the Term hereof, Landlord's right to other income therefrom, and/or Landlord's business of leasing, by any authority having the direct or indirect power to tax and where the funds are generated with reference to the Building address and where the proceeds so generated are to be applied by the city, county, or other local taxing authority of a jurisdiction within which the Premises are located. Real Property Taxes also include any tax, fee, levy, assessment or charge, or any increase therein: (1) imposed by reason of events occurring during the term of this Lease, including but not limited to, a change in the ownership of the Premises or any portion thereof or a change in the improvements thereon, and (2) levied or assessed on machinery or equipment provided by Landlord to Tenant pursuant to this Lease.

(f) Payment of Taxes. In addition to Base Rent and other rent (including Operating Expenses), Tenant shall pay (or cause to be paid) directly to the applicable taxing authority an amount equal to the Real Property Tax installment due at least 20 days prior to the applicable delinquency date. If any such installment covers any period of time prior to or after the expiration or termination of this Lease, Tenant's share of such taxes will be prorated. If the amount paid by Tenant is insufficient to pay such Real Property Taxes when due, then Tenant will pay Landlord, upon demand, such additional sum as is necessary.

(g) Utilities and Services. Tenant shall directly contract for and pay for all water, gas, heat, light, power, telephone, trash disposal, landscape maintenance, janitorial and other utilities and services supplied to the Premises, together with any taxes thereon, directly to such utilities and service providers after the Commencement Date. There will be no abatement of rent, and Landlord will not be liable in any respect whatsoever for the inadequacy, stoppage, interruption, or discontinuance of any utility or service due to riot, strike, labor dispute, breakdown, accident, repair, or other cause beyond Landlord's reasonable control or in cooperation with governmental request or directions.

(h) Intent. Landlord and Tenant intend for the Lease to be a triple net lease, with Tenant paying both Base Rent and Operating Expenses associated with the Property during the entire Term of the Lease, including but not limited to those items described in subsections (d)-(g), inclusive.

(i) Escrow. In connection with the execution of this Lease, Tenant will deposit \$12,000,000 into an escrow account to act as security for the payment of rent under this Lease. Funds may be disbursed only as set forth in the Escrow Agreement between Tenant and U.S. Bank N.A. dated May 26, 2015. Tenant's obligation to pay rent (whether Base Rent or any other rent) is not limited to the funds in the escrow account. The parties acknowledge that Tenant shall have the right, prior to Substantial Completion, to withdraw funds from escrow in order to pay for Tenant-Requested Change Orders (as defined in Section 32 hereof), so long as the total amount in the escrow account does not fall below the greater of the maximum amount of the: (a) Purchase Price that County may be obligated to pay as reflected in Exhibit J or (b) cumulative Rent payments to be paid for the Term under the Lease.

5. USES. The Premises are to be used only for the uses set forth in Section 1 and for no other business or purpose; however, Landlord shall not unreasonably withhold its consent to a change of use.

6. HOLDOVER. If Tenant remains in possession of the Premises or any part thereof after the expiration of the Term of this Lease, such occupancy shall be a tenancy which is terminable only upon ninety (90) days written notice from Landlord or thirty (30) days written notice from the Chief Executive Officer of Tenant at the last monthly Base Rent payable under this Lease (as such Base Rent may be adjusted from time to time in accordance with this Lease) plus all other charges payable under this Lease, and subject to all of the terms, covenants and conditions of this Lease.

7. COMPLIANCE WITH LAW. Tenant shall, at Tenant's expense, comply promptly with all applicable statutes, ordinances, rules, regulations, orders and requirements in effect during the term hereof, regulating the use, occupancy or improvement of the Premises by Tenant, including the Americans with Disabilities Act. Landlord warrants that the improvements on the Premises comply with all applicable laws that were in effect at the time that the improvements were constructed. Such warranty does not apply to any material alterations made by Tenant after the Commencement Date or any material change in Tenant's use of the Premises from that contemplated as of the Commencement Date.

8. DAMAGE OR DESTRUCTION

(a) Tenant's Responsibility. After the Commencement Date of the Lease, in the event any portion of the Premises is damaged by fire or any other cause rendering the Premises totally or partially inaccessible or unusable and the Premises may be restored to a complete architectural unit of the same value, condition and character that existed immediately prior to such casualty, then Tenant shall promptly, at Tenant's expense, repair such damage and this Lease shall continue in full force and effect.

(b) Landlord's Responsibility. If Landlord is required to repair and restore the Premises during construction and Landlord should fail to thereafter pursue said repair and restoration work with reasonable diligence to completion, Tenant may terminate this Lease upon at least thirty (30) days prior written notice to Landlord (provided that if Landlord has commenced to repair and restore the Premises, Tenant shall have no right to terminate this Lease).

9. REPAIRS AND MAINTENANCE

(a) Landlord Representations. Landlord represents to Tenant as of the Commencement Date that (i) the Premises, the Building and all Common Areas, (including electrical, heating, ventilating and air conditioning ("HVAC"), mechanical, plumbing, gas and fire/life safety systems in the Building and similar building service systems) comply with all current laws, codes, and ordinances, including use the Americans With Disabilities Act; and are in reasonable good working order and condition; (ii) the Building and Premises comply with all covenants, conditions, restrictions and underwriter's requirements; (iii) the Premises, Building and Common Areas are free of the presence of any Hazardous Materials (as hereinafter defined); and (iv) Landlord has not received any notice from any governmental agency that the Building or the Premises are in violation of any law or regulation.

(b) Landlord Obligations. For a period of one year following the Commencement Date, Landlord will repairs faults in workmanship (i.e., Landlord's repair obligations are limited to Landlord's warranty obligations).

(c) Tenant Obligations. Except for Landlord's warranty obligations pursuant to Section 9(b) above, Tenant will , at Tenant's sole expense, be responsible for the cost of repairing the exterior windows, floors, floor covering, interior partitions, furniture, fixtures, doors, concealed and non-concealed electrical components, , toilets, sinks, clogged drains, bathroom partitions, faucets, ceilings, graffiti removal, and any area damaged by Tenant or Tenant's agents, employees, invitees and visitors and the repair of low voltage electronic, phone and data cabling and related equipment, and all damage caused by Tenant or Tenant's agents, employees, invitees, and visitors. Tenant shall, at Tenant's sole expense, keep and maintain in good repair and working order and promptly make repairs to and perform maintenance upon and replace as needed: (i) the structural elements of the Building, including without limitation, all permanent exterior and interior walls, roof, plumbing, stairways, electrical systems and telephone intrabuilding network cable (ii) mechanical (including HVAC), electrical, plumbing and fire/life safety systems serving the Building. All repairs and replacements shall: (a) be made and performed by contractors or mechanics approved by Landlord, which consent shall not be unreasonably withheld or delayed; (b) be at least equal in quality, value and utility to the original

work or installation; and (c) be in accordance with all laws. . The Landlord grants the Tenant the right to use County resources including Public Library and Internal Services Department (ISD) staff to complete any required maintenance or repairs.

(d) Landlord's Right to Repair. If Tenant fails to maintain or repair the Premises, and Landlord provides written notice (or oral notice in the event of an emergency such as damage or destruction to or of any portion of the Building structure and/or the Building systems and/or anything that could cause material disruption to Tenant's business) to Tenant of an event or circumstance which requires the action of Tenant with respect to repair and/or maintenance, and Tenant fails to provide such action within a reasonable period of time, given the circumstances, after the giving of such notice, but in any event not later than five days after the giving of such notice, then Landlord may proceed to take the required action (provided, however, that no such notice shall be required in the event of an emergency which threatens life). Landlord shall have access to the Building to the extent necessary to perform the work contemplated by this provision. If such action was required under the terms of this Lease to have been taken by Tenant and was not taken by Tenant within such period (unless such notice was not required as provided above), and Landlord took such required action, then Landlord shall be entitled to prompt reimbursement by Tenant of Landlord's reasonable costs and expenses in having taken such action plus interest thereon at ten percent (10%) per annum. If not reimbursed by Tenant within ten days, such failure will be a default under the Lease. The remedies provided in this Section are in addition to the remedies provided in Section 13.

10. INTENTIONALLY OMITTED

11. LANDLORD ACCESS. Tenant shall permit Landlord and its agents to enter the Premises upon prior written notice for the purpose of inspecting the Premises for any reasonable purpose. If Landlord temporarily closes any portion of the Building or Premises, Base Rent shall be prorated based upon the percentage of the Premises or Building rendered untenable and not used by Tenant. Landlord shall have the right at any and all times to enter the Premises in the event of an emergency.

12. TENANT DEFAULT

(a) Default. The occurrence of any one or more of the following events (a "Tenant Default") shall constitute a material default and breach of this Lease by Tenant:

(i) The failure by Tenant to make any payment of Base Rent or any other payment required to be made by Tenant hereunder (except to the extent an offset is expressly permitted hereunder), as and when due and if the failure continues for a period of ten days after written notice to Tenant;

(ii) The failure by Tenant to observe or perform any of the other covenants, conditions or provisions of this Lease, where such failure shall continue for a period of 30 days after written notice from Landlord specifying in detail the nature of the Tenant Default; provided, however, if more than 30 days are reasonably required for its cure then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30-day period and thereafter diligently prosecutes such cure to completion;

(iii) Tenant's failure to abide by the terms of its agreement with its Escrow Company, including any attempt by Tenant to change the material terms of the Escrow Agreement in such a way as to thwart Landlord's right to payment of funds from the escrow account.

(b) Termination. Tenant agrees that if a Tenant Default should occur and should not be cured within the time periods set forth above, it shall be lawful for Landlord to terminate this Lease upon the giving of written notice to Tenant. In addition thereto, Landlord shall have such other rights or remedies as may be provided by law, including, without limitation, that Landlord may recover from Tenant the following:

(i) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(ii) The worth at the time of award of the amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iii) The worth at the time of award of the amount by which the unpaid rent for the balance of the Lease Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iv) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant, and attorney's fees and costs incurred; and

(v) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

(c) No Effect on Indemnity. Nothing in this Article shall be deemed to affect either Landlord or Tenant's right to indemnification under any indemnification clause or clauses set forth in this Lease.

13. LANDLORD DEFAULT

(a) Remedies. Landlord shall be in default ("Landlord Default") in the performance of any obligation required to be performed by Landlord under this Lease if Landlord has failed to perform such obligation within twenty days after the giving of written notice with respect thereto by Tenant; provided, however, that if the nature of the Landlord Default is such that the same cannot reasonably be cured within such twenty-day period, Landlord shall not be deemed to be in Landlord Default if Landlord shall within such twenty-day period commence such cure and thereafter diligently prosecute the same to completion. If the Landlord Default is of such a nature that it materially and substantially interferes with Tenant's occupancy and use of the Premises and if such Landlord Default is not cured within the

foregoing cure period or Landlord has not commenced to cure within such period, then Tenant shall have the right, at its option, with or without further notice or demand of any kind to Landlord or any other person, to any one or more of the following described remedies in addition to all other rights and remedies provided at law or in equity or elsewhere herein: (i) to remedy such default or breach and deduct the costs thereof (including but not limited to attorneys' fees) plus interest at the rate of ten (10%) per annum from the installments of Base Rent next falling due; and/or (ii) to terminate this Lease.

(b) Nothing herein contained shall relieve Landlord from its duty to effect the repair, replacement, correction or maintenance required or to perform any other obligations to the standard prescribed in this Lease, nor shall this Section be construed to obligate Tenant to undertake any such work.

(c) Emergency. Notwithstanding the foregoing cure period, Tenant may cure any default without notice where the failure promptly to cure such default would, in the reasonable opinion of Tenant, create or allow to persist an emergency condition or materially and adversely affect the operation of Tenant's business in the Premises.

14. ASSIGNMENT AND SUBLETTING. Tenant may not assign, mortgage, encumber or otherwise transfer this Lease or sublet the whole or any part of the Premises without first obtaining Landlord's prior written consent, which Landlord may withhold in its sole discretion, provided, however, that no such assignment, subletting or other transfer shall relieve Tenant of any liability under this Lease unless Landlord has given its written consent thereto.

15. ALTERATIONS AND ADDITIONS

(a) Landlord Consent. Tenant shall not make any structural alterations, improvements, additions, or utility installations in or about the Premises (collectively, "Alterations") without first obtaining the written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed. However, Landlord's consent shall not be required for any Alteration that satisfies all of the following criteria: (1) complies with all Laws; (2) is not visible from the exterior of the Premises or Building; and (3) will not materially affect the systems or structure of the Building. If Landlord fails to respond in writing within 30 days of such request, Landlord shall be deemed to approve the Alterations.

(b) End of Term. Any Alterations not removed by Tenant shall become the property of Landlord and remain upon and be surrendered with the Premises at the expiration of the Term.

16. CONDEMNATION

(a) Controlling Terms. If during the Term, or during the period of time between the execution of this Lease and the Commencement Date, there is any taking of all or any part of the Premises or any interest in this Lease by Condemnation (as defined below), this Section shall determine the rights and obligations of Tenant and Landlord. "Condemnation" shall mean the exercise of any governmental power to take title to any portion of the Premises, whether by legal proceedings or otherwise, by a Condemnor (as defined below) or a voluntary sale or transfer by Landlord to any Condemnor, either under threat of a Condemnor's exercise of

such power or while legal proceedings are pending for the exercise of such power. "Condemnor" shall mean any public or quasi-public authority, or private corporation or individual, having the power of Condemnation.

(b) Total Taking. If the Premises are totally taken by Condemnation, this Lease shall terminate on the date the Condemnor has a right to possession of the Premises (the "Date of Taking").

(c) Partial Taking. If any portion, but not all, of the Premises is taken by Condemnation, this Lease shall remain in effect, except that Tenant may elect to terminate this Lease if, in Tenant's reasonable judgment, the remaining portion of the Premises (including the space available for parking) is rendered unsuitable for Tenant's continued use of the Premises. If Tenant elects to so terminate this Lease, Tenant must exercise its right to terminate by giving notice to Landlord within 30 days after the date that the nature and the extent of the Condemnation have been determined (the "Determination Date"), which notice shall set forth the date of termination. Such termination date shall not be earlier than 30 days nor later than 90 days after Tenant has notified Landlord of its election to terminate; except that this Lease shall terminate on the Date of Taking if the Date of Taking falls on a date before the date of termination as designated by Tenant. If Tenant does not so notify Landlord within 30 days after the Determination Date, all obligations of Tenant under this Lease shall remain in effect, except that Base Rent shall be equitably abated.

(d) Restoration. Notwithstanding the preceding paragraph, if, within 30 days after the Determination Date, Landlord notifies Tenant that Landlord at its cost will add to the remaining Premises so that the area of the Premises and the space available for parking, will be substantially the same after the Date of Taking as they were before the Date of Taking, and Landlord commences the restoration promptly and, subject to reasonable allowance for delays that are not caused by Landlord, completes it within 90 days after Landlord so notifies Tenant, this Lease shall continue in effect. All obligations of Tenant under this Lease shall remain in effect, except that Base Rent shall be equitably abated or reduced during the period from the Date of Taking until the completion of such restoration.

(e) Award. The Award (as defined below) shall be divided between Landlord and Tenant as their respective interests may appear. "Award" shall mean all compensation, sums or anything of value awarded, paid or received on a total or partial Condemnation of the Premises.

(f) Waiver of Statute. Landlord and Tenant hereby waive the provision of California Code of Civil Procedure Section 1265.130 allowing Landlord or Tenant to petition the superior court to terminate this Lease in the event of a partial taking of the Premises.

17. INDEMNIFICATION

(a) The Landlord shall indemnify, defend and hold harmless the Tenant from and against any and all liability, loss, injury or damage including (but not limited to) demands, claims, actions, fees, costs and expenses (including attorney and expert witness fees), arising from or connected with the Landlord's construction, repair, maintenance and other acts and omissions arising from and/or relating to the Landlord's ownership of the Premises.

(b) The Tenant shall indemnify, defend and hold harmless the Landlord, from and against any and all liability, loss, injury or damage including (but not limited to) demands, claims, actions, fees, costs and expenses (including attorney and expert witness fees), arising from or connected with the Tenant's repair, maintenance and other acts and omissions arising from and/or relating to the Tenant's use of the Premises.

18. INSURANCE

18.1 General Insurance Provisions. Without limiting the indemnification of each Party and during the term of this Lease, Landlord and Tenant shall provide and maintain insurance coverage satisfying the requirements specified in this Lease. These minimum insurance coverage terms, types and limits (the "Required Insurance") also are in addition to and separate from any other contractual obligation imposed upon Landlord and/or Tenant pursuant to this Lease. The Tenant and Landlord in no way warrant that the Required Insurance is sufficient to protect the Landlord or Tenant for liabilities which may arise from or relate to this Lease. The Tenant and Landlord at their sole discretion may satisfy all or any part of this insurance requirement through use of a program of self insurance (self-funding of its liabilities). Certificate evidencing coverage or letter evidencing self-funding will be provided to Landlord after execution of this Lease at Landlord's request.

(a) **Evidence of Coverage and Notice to Tenant During Construction.**

(1) Certificate(s) of insurance coverage (Certificate) satisfactory to Tenant, and a copy of an Additional Insured endorsement confirming Tenant and its Agents (defined below) has been given Additional Insured status under the Landlord's General Liability policy, shall be delivered to Tenant at the address shown below and provided prior to the start day of this Lease. Additional Insured status will apply to ongoing and completed construction operations. Additional Insured status does not apply to occupancy of building under Tenant to Landlord status. As noted below under Tenant Requirements, Tenant will name Landlord as Additional Insured with respect to occupancy of premises.

(2) During construction Renewal Certificates shall be provided to Tenant not less than 10 days prior to Landlord's policy expiration dates. The Tenant reserves the right to obtain complete, certified copies of any required Landlord insurance policies at any time. Certificates shall identify all Required Insurance coverage types for the construction and limits specified herein, reference this Lease by name or number, and be signed by an authorized representative of the insurer(s). The Insured party named on the Certificate shall match the name of the Landlord identified in this Lease. Certificates shall provide the full name of each insurer providing coverage, its NAIC (National Association of Insurance Commissioners) identification number, the amounts of any policy deductibles or self-insured retentions exceeding twenty five thousand (\$25,000.00) dollars, and list any Tenant required endorsement forms.

(3) Neither the Tenant's failure to obtain, nor the Tenant's receipt of, or failure to object to a non-complying insurance certificate or endorsement, or any other insurance documentation or information provided by the Landlord, its insurance broker(s) and/or insurer(s), shall be construed as a waiver of any of the Required Insurance provisions.

(4) Certificates and copies of any required endorsements, notices of cancellation shall be delivered to:

County of Los Angeles
Chief Executive Office
500 West Temple Street, 7th Floor
Los Angeles, California 90012
Attention: Bradford Bolger

WITH COPY TO:
County of Los Angeles Public Library
7400 East Imperial Highway
Downey, California 90242

Landlord also shall promptly notify Tenant of any third party claim or suit filed against Landlord which arises from or relates to this Lease, and could result in the filing of a claim or lawsuit against Landlord and/or Tenant.

(b) Additional Insured Status and Scope of Coverage

The Tenant, which is the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees and Volunteers (collectively Tenant and its Agents), shall be provided additional insured status under Landlord's General Liability policy with respect to liability arising from or connected with the Landlord's acts, errors, and omissions arising from and/or relating to the Landlord's construction operations of the premises. Tenant's additional insured status shall apply with respect to liability and defense of suits to the extent arising out of the Landlord's negligent acts or omissions. The full policy limits and scope of protection also shall apply to the Tenant as an additional insured, even if they exceed the Tenant's minimum Required Insurance specifications herein. Use of an automatic additional insured endorsement form is acceptable providing it satisfies the Required Insurance provisions herein.

(c) Cancellation of or Changes in Insurance

Landlord shall provide County with, or Landlord's insurance policies shall contain a provision that County shall receive, written notice of cancellation or any change in Required Insurance, including insurer, limits of coverage, term of coverage or policy period. The written notice shall be provided to County at least ten (10) days in advance of cancellation for non-payment of premium and thirty (30) days in advance for any other cancellation or policy change. Failure to provide written notice of cancellation or any change in Required Insurance may

constitute a material breach of the Agreement, in the sole discretion of the County, upon which the County may suspend or terminate this Agreement

(d) Failure to Maintain Insurance

Landlord's failure to maintain or to provide acceptable evidence that it maintains the Required Insurance shall constitute a material breach of the Lease, upon which County immediately may withhold payments due to Landlord. County, at its sole discretion, may obtain damages from Landlord resulting from said breach.

(e) Insurer Financial Ratings.

Insurance is to be provided by an insurance company authorized to do business in California and acceptable to the Tenant, with an A.M. Best rating of not less than A:VII, unless otherwise approved by the Tenant.

(f) Waiver of Subrogation

To the fullest extent permitted by law, the Landlord hereby waives its and its insurer(s) rights of recovery against Tenant under all required insurance policies for any loss arising from or related to this Lease. The Landlord shall require its insurers to execute any waiver of subrogation endorsements which may be necessary to affect such waiver.

(g) Claims Made Coverage

If any part of the Required Insurance is written on claims made basis, any policy retroactive date shall precede the start date of this Lease. Landlord understands and agrees it shall maintain such claims made coverage for a period of not less than three (3) years following Lease expiration, termination or cancellation.

(h) Application of Excess Liability Coverage

Landlord may use a combination of primary and excess insurance policies which provide coverage as broad as ("follow form" over) the underlying primary policies, to satisfy the Required Insurance provisions.

(i) Separation of Insureds

All liability policies shall provide cross-liability coverage as would be afforded by the standard ISO (Insurance Services Office, Inc.) separation of insureds provision with no insured versus insured exclusions or limitations.

18.2 Landlord Insurance (Construction Period). During the period of construction, Landlord shall maintain or Landlord will require its contractors to maintain the following programs of insurance coverage:

(a) **Builder’s Risk Course of Construction Insurance.** Such coverage shall insure against damage from perils covered by the Causes-of-Loss Special Form (ISO form CP 10 30). This insurance shall be endorsed to include earthquake, flood, ordinance or law coverage, coverage for temporary offsite storage, debris removal, pollutant cleanup and removal, testing, preservation of property, excavation costs, landscaping, shrubs and plants, and full collapse coverage during construction, without restricting collapse coverage to specified perils. Such insurance shall be extended to include boiler & machinery coverage for air conditioning, heating and other equipment during testing. This insurance shall be written on a completed-value basis and cover the entire value of the construction project, including Landlord furnished materials and equipment, against loss or damage until completion and acceptance by the Tenant and the Landlord if required. Such coverage shall provide a per occurrence deductible of no greater than ten percent of the value insured for earthquake, and five percent (5%) of the value insured for all other perils.

(b) **General Liability Insurance.** Such coverage shall be written on ISO policy form CG 00 01 or its equivalent, naming Landlord and Tenant as an additional insured, with limits of not less than:

General Aggregate:	\$ 4 million
Products/Completed Operations Aggregate:	\$ 4 million
Personal and Advertising Injury:	\$ 2 million
Each Occurrence:	\$ 2 million

The Products/Completed Operations coverage shall continue to be maintained in the amount indicated above for at least two (2) years from the date the Project is completed and accepted by the Tenant and the Landlord if required.

(c) **Automobile Liability.** Such coverage shall be written on ISO policy form CA 00 01 or its equivalent with limits of not less than \$1 million for bodily injury and property damage, in combined or equivalent split limits, for each single accident. Such insurance shall cover liability arising out of Landlord’s or Landlord’s contractor use of autos pursuant to this Lease, including owned, leased, hired, and/or non-owned autos, as each may be applicable.

(d) **Professional Liability.** Such insurance shall cover liability arising from any error, omission, negligent, or wrongful act of the Landlord’s contractor and/or licensed professional (i.e. architects, engineers, surveyors, etc.) with limits of not less than \$ 1 million per claim and \$ 2 million aggregate. Landlord will require any professionals to maintain Professional Liability coverage for a minimum of two years commencing upon expiration, termination or cancellation of the

construction project. Landlord is not required to maintain professional liability insurance itself, but will require the architect and other professionals retained by Landlord for the Project to maintain such professional liability insurance.

(e) **Workers Compensation and Employers' Liability Insurance** or qualified self-insurance satisfying statutory requirements, if required. Such coverage shall provide Employers' Liability coverage with limits of not less than \$1 million per accident. Such policy shall be endorsed to waive subrogation against the Tenant for injury to the Landlord's or Landlord's contractor employees.

18.3 Tenant Insurance. After completion of construction and during the term of this Lease, Tenant shall maintain a program of insurance coverage as described below. Tenant, at its sole option, may satisfy all or any part of this insurance requirement through use of a program of self insurance (self-funding of its liabilities). Certificate evidencing coverage or letter evidencing self-funding will be provided to Landlord after execution of this Lease at Landlord's request.

(a) Commercial General Liability Insurance providing scope of coverage equivalent to ISO policy form CG 00 01, naming Landlord and its lender as an additional insured, with limits of not less than:

General Aggregate:	\$ 4 million
Each Occurrence:	\$ 2 million
Products/Completed Operations Aggregate:	\$ 4 million
Personal and Advertising Injury:	\$ 2 million

(b) Tenant's Insurance Shall Be Primary and Non-Contributory. Tenant's insurance policies, with respect to any claims related to this Lease, shall be primary with respect to all other sources of coverage available to Landlord. Any Landlord maintained insurance or self-insurance coverage shall be in excess of and not contribute to any Tenant coverage.

(c) Waiver of Subrogation. To the fullest extent permitted by law, the Tenant hereby waives its and its insurer(s) rights of recovery against Landlord under all required insurance policies for any loss arising from or related to this Lease. The Tenant shall require its insurers to execute any waiver of subrogation endorsements which may be necessary to affect such waiver.

(d) Commercial Property Insurance. Such insurance shall:

(1) Provide coverage for Tenant's property and any improvements and betterments; this coverage shall be at least as broad as that provided by the Causes-of-Loss Special Form (ISO form CP 10 30), excluding earthquake and including flood and ordinance or law coverage.

(2) Be written for the full replacement cost of the property, with a deductible to be determined by the Tenant. Insurance proceeds shall be payable to the Tenant and Landlord as their interests may appear.

(e) Tenant's Worker's Compensation and Employer's Liability Insurance. Tenant shall obtain and maintain worker's compensation and employer's liability insurance or qualified self-insurance satisfying statutory requirements. Such coverage shall provide Employer's Liability coverage with limits of not less than \$1 million per accident. Such policy shall be endorsed to waive subrogation against the Landlord for injury to the Tenant's employees.

(f) Evidence of Coverage and Notice to Landlord

(1) Certificate(s) of insurance coverage (Certificate) satisfactory to Landlord, and a copy of an Additional Insured endorsement confirming Landlord and Landlord's lender has been given Additional Insured status under the Tenant's General Liability policy, shall be delivered to Landlord at the address shown below and provided prior to the start day of the lease of premises.

(2) Renewal Certificates shall be provided to Landlord not less than 10 days prior to Landlord's policy expiration dates.

(3) Certificates shall identify all Required Insurance coverage types and limits specified herein, reference this Lease by name or number, and be signed by an authorized representative of the insurer(s). The Insured party named on the Certificate shall match the name of the Tenant identified in this Lease.

(4) Neither the Landlord's failure to obtain, nor the Landlord's receipt of, or failure to object to a non-complying insurance certificate or endorsement, or any other insurance documentation or information provided by the Tenant, its insurance broker(s) and/or insurer(s), shall be construed as a waiver of any of the Required Insurance provisions.

(5) Certificates and copies of any required endorsements, notices of cancellation shall be delivered to Landlord.

(6) Tenant also shall promptly notify Landlord of any third party claim or suit filed against Tenant which arises from or relates to this Lease, and could result in the filing of a claim or lawsuit against Landlord and/or Tenant.

18.4 Landlord Insurance (Post-Construction Period). Following the period of construction, Landlord shall obtain and keep in force a policy or policies in the name of Landlord, with loss payable to Landlord and to any Lender(s), insuring loss or damage to the Premises. The amount of such insurance shall be equal to the full replacement cost of the Premises, as the same shall exist from time to time, or the amount required by any Lenders, but in no event more than the commercially reasonable and available insurable value thereof. Such

policy or policies shall insure against all risks of direct physical loss or damage (including the perils of flood and earthquake), including coverage for debris removal and the enforcement of any applicable Laws requiring the upgrading, demolition, reconstruction or replacement of any portion of the Premises as the result of a covered loss. The cost of this property insurance will be an Operating Expense.

19. PARKING

(a) Tenant shall have the right to the number of exclusive reserved parking stalls set forth in Section 1 without charge for the Term of this Lease. No tandem parking shall be permitted and Tenant shall be entitled to full in/out privileges.

(b) Remedies. Landlord acknowledges that it is a material term of this Lease that Tenant receives all of the Parking Spaces to which it is entitled under this Lease for the entire Term of this Lease and that it would be impracticable and extremely difficult to fix the actual damages for a breach of such provisions. It is therefore agreed that if, for any reason within the control of Landlord, up to ten percent of the Parking Spaces required above are not available to Tenant, Tenant may deduct from the Base Rent thereafter accruing hereunder an amount equal to two dollars per unavailable parking space per day.

20. ENVIRONMENTAL MATTERS

(a) Hazardous Materials. Tenant shall not cause nor permit, nor allow any of Tenant's employees, agents, customers, visitors, invitees, licensees, contractors, assignees or subtenants to cause or permit, any Hazardous Materials to be brought upon, stored, manufactured, generated, blended, handled, recycled, treated, disposed or used on, under or about the Premises, the Building or the Common Areas, except for routine office and janitorial supplies in usual and customary quantities stored, used and disposed of in accordance with all applicable Environmental Laws. As used herein, "Hazardous Materials" means any chemical, substance, material, controlled substance, object, condition, waste, living organism or combination thereof, whether solid, semi solid, liquid or gaseous, which is or may be hazardous to human health or safety or to the environment due to its radioactivity, ignitability, corrosivity, reactivity, explosivity, toxicity, carcinogenicity, mutagenicity, phytotoxicity, infectiousness or other harmful or potentially harmful properties or effects, including, without limitation, molds, toxic levels of bacteria, tobacco smoke within the Premises, petroleum and petroleum products, asbestos, radon, polychlorinated biphenyls (PCBs), refrigerants (including those substances defined in the Environmental Protection Agency's "Refrigerant Recycling Rule," as amended from time to time) and all of those chemicals, substances, materials, controlled substances, objects, conditions, wastes, living organisms or combinations thereof which are now or become in the future listed, defined or regulated in any manner by any Environmental Law based upon, directly or indirectly, such properties or effects. As used herein, "Environmental Laws" means any and all federal, state or local environmental, health and/or safety-related laws, regulations, standards, decisions of courts, ordinances, rules, codes, orders, decrees, directives, guidelines, permits or permit conditions, currently existing and as amended, enacted, issued or adopted in the future which are or become applicable to Tenant, the Premises, the Building or the Common Areas. Tenant shall indemnify, protect, defend (by counsel acceptable to Landlord) and hold harmless Landlord from and against any and all claims, judgments, causes of action, damage, penalties, fine, taxes, costs, liabilities, losses and expenses arising at any time during or after the

Term as a result (directly or indirectly) of or in connection with the presence of Hazardous Materials on, under or about the Premises, Building or Common Areas or other violation of laws relating to Hazardous Materials caused by Tenant or Tenant's agents. This indemnity shall include, without limitation, the cost of any required or necessary repair, cleanup or detoxification, and the preparation and implementation of any closure, monitoring or other required plans, as such action is required by local or state laws or any governmental agency. Tenant shall promptly deliver to Landlord a copy of any notice received from any governmental agency during the Term of this Lease concerning the presence of Hazardous Materials in the Building or the Premises. Tenant's obligations pursuant to the foregoing indemnity shall survive the expiration or termination of this Lease.

(b) Landlord Indemnity. Landlord shall indemnify, protect, defend (by counsel acceptable to Tenant) and hold harmless Tenant from and against any and all claims, judgments, causes of action, damage, penalties, fine, taxes, costs, liabilities, losses and expenses arising at any time during or after the Term as a result (directly or indirectly) of or in connection with the presence of Hazardous Materials on, under or about the Premises, Building or Common Areas or other violation of laws relating to Hazardous Materials inherent in the Property or caused by Landlord or Landlord's agents. This indemnity shall include, without limitation, the cost of any required or necessary repair, cleanup or detoxification, and the preparation and implementation of any closure, monitoring or other required plans, as such action is required by local or state laws or any governmental agency. Landlord shall promptly deliver to Tenant a copy of any notice received from any governmental agency during the Term of this Lease concerning the presence of Hazardous Materials in the Building or the Premises. Landlord's obligations pursuant to the foregoing indemnity shall survive the expiration or termination of this Lease.

21. ESTOPPEL CERTIFICATES. Tenant shall, within 30 days after written request of Landlord, execute, acknowledge and deliver to Landlord or its designee a written statement in the form of form of Exhibit "D" attached hereto and incorporated herein by this reference but shall have no other obligation to deliver any other form of estoppel certificate except commercially reasonable changes required by any lender. It is intended that any such statement delivered pursuant to this Section may be relied upon by a prospective purchaser of Landlord's interest or holder of any mortgage upon Landlord's interest in the Premises.

22. LIENS. Tenant shall keep its interest in this Lease and the Premises free from any liens arising out of any work performed or materials ordered or obligations incurred by Tenant. Landlord shall keep its interest in this Lease and the Premises free from any liens which would impair the interest of Tenant hereunder and hereby indemnifies and holds Tenant harmless from any liability or loss from any such lien.

23. SUBORDINATION AND MORTGAGES

(a) Subordination and Non-Disturbance. Tenant agrees, at Landlord's option, to subordinate this Lease to the lien of any mortgages or deeds of trust now or hereafter in force against the Building; provided, however, Tenant's obligation to subordinate this Lease is expressly conditioned upon Tenant receiving a written agreement in the form of Exhibit "E" attached hereto and incorporated herein by this reference, and provided further that, except as expressly provided in Exhibit E, no such subordination shall affect any option to extend the Term

of this Lease, right of first offer to lease additional premises, option to purchase or right of first offer to purchase the Property which may be included herein.

(b) Existing Deeds of Trust. The beneficiary under any existing deed of trust affecting the Building shall provide a written agreement to Tenant in the form of Exhibit "F" attached hereto and incorporated herein by this reference within 30 days after the execution of this Lease.

(c) Request for Notice. Landlord acknowledges that Tenant intends to record a Request for Notice with respect to any mortgages or deeds of trust affecting the Property in the form of Exhibit "G" attached hereto and incorporated herein by this reference.

(d) Notice of Default. If any mortgagee or beneficiary under a deed of trust affecting the Property gives written notice of its name and address to Tenant by registered mail requesting any such notice with reference to this Section, Tenant agrees to use its best efforts (but without liability for failure to do so) to give such mortgagee a copy of any notice of default served upon Landlord hereunder which could permit Tenant to terminate this Lease and an additional thirty (30) days within which to cure such default, all as further described in Exhibit E.

24. SURRENDER OF POSSESSION. Subject to casualty, at the expiration of the Term of this Lease, whether by lapse of time or otherwise, Tenant shall promptly and peacefully surrender the Premises to Landlord in a "broom-clean" condition. Tenant may (but shall not be required to) remove, at its own expense, all fixtures, equipment and all other personal property placed or installed in or upon the Premises by Tenant, or under its authority (including any modular furniture).

25. SIGNAGE. Tenant shall be permitted to install at the Premises reasonably appropriate signs that conform with any and all applicable laws and ordinances.

26. QUIET ENJOYMENT. So long as Tenant is not in default hereunder, Tenant shall have the right to the quiet and peaceful enjoyment and possession of the Premises and the Common Areas during the Term of this Lease, subject to the terms and conditions of this Lease.

27. GENERAL

(a) Headings. Titles to Sections of this Lease are not a part of this Lease and shall have no effect upon the construction or interpretation of any part hereof.

(a) Successors and Assigns. All of the covenants, agreements, terms and conditions contained in this Lease shall inure to and be binding upon the Landlord and Tenant and their respective successors and assigns.

(b) Brokers. Landlord and Tenant each represent and warrant to each other that it has not engaged any broker, finder or other person who would be entitled to any commission or fees in respect of the negotiation, execution or delivery of this Lease and shall indemnify and hold harmless each other against any loss, cost, liability or expense incurred by the other party as a result of any claim asserted by any such broker, finder or other person on the basis of any arrangements or agreements made or alleged to have been made in variance with this representation.

(c) Entire Agreement. This Lease (and the Exhibits hereto), together with the Option to Lease and Design Agreement dated August 19, 2014 between the parties hereto, is the final and complete expression of Landlord and Tenant relating in any manner to the leasing, use and occupancy of the Premises, to Tenant's use of the Building and other matters set forth in this Lease. No prior agreements or understanding pertaining to the same shall be valid or of any force or effect and the covenants and agreements of this Lease shall not be altered, modified or added to except in writing signed by both Landlord and Tenant.

(d) Severability. Any provision of this Lease which shall prove to be invalid, void or illegal shall in no way affect, impair or invalidate any other provision hereof and the remaining provisions hereof shall nevertheless remain in full force and effect.

(e) Notices. All notices and communications to any party hereunder shall be in writing and shall be deemed properly given if delivered personally, sent by registered or certified mail, postage prepaid, or by a recognized overnight commercial messenger providing proof of delivery, facsimile (electronically confirmed) to Landlord's Address for Notice and Tenant's Address for Notice as set forth in Section 1. Any notice so given shall be deemed to have been given as of the date of delivery (whether accepted or refused) established by U.S. Post Office return receipt or the overnight carrier's proof of delivery, as the case may be. Any such notice not so given shall be deemed given upon receipt of the same by the party to whom the same is to be given.

(f) Governing Law and Forum. This Lease shall be governed by and construed in accordance with the internal laws of the State of California. Any litigation with respect to this Lease shall be conducted in the County of Los Angeles, State of California.

(g) Waivers. No waiver by Landlord or Tenant of any provision hereof shall be deemed a waiver of any other provision hereof or of any subsequent breach by Landlord or Tenant of the same or any other provision. Landlord's or Tenant's consent to or approval of any act shall not be deemed to render unnecessary the obtaining of Landlord's or Tenant's consent to or approval of any subsequent act by Landlord or Tenant.

(h) Time of Essence. Time is of the essence for the performance of all of the obligations specified hereunder.

(j) Consent. Whenever any consent is required by Landlord or Tenant hereunder, such consent shall not be unreasonably withheld, conditioned or delayed.

(k) Community Business Enterprises. Landlord shall complete and deliver to Tenant concurrently with the execution hereof a Community Business Enterprises form set forth as Exhibit H attached hereto and incorporated herein by this reference.

28. OPTION TO PURCHASE

Provided that no material default has occurred and is continuing under the Lease at the time of exercise, Tenant shall have the exclusive option to purchase the Building, together with the Property on which it is located ("Purchase Option"), at any time during the Term. Tenant shall have the right to exercise the Purchase Option at any time on or after the Commencement Date and prior to expiration of the Term. Tenant shall provide notice of its intent to exercise the

Purchase Option to Landlord by letter from Tenant's Chief Executive Office. The actual exercise of the Purchase Option shall be by the County's Board of Supervisors. The purchase price for the Building (and the Property on which it is located) shall be equal to the remaining unpaid and unamortized portion of the total Project Costs of the Project Improvements (as such term is defined below) at the date of close of escrow, plus any pre-payment penalties and all closing costs (including but not limited to title policies, attorney's fees, escrow fees, etc.) so that the net payment to Landlord is the remaining unpaid and unamortized portion of the total Project Costs plus pre-payment penalties, which the parties agree represents a fair market value for the Building and Property (the "Purchase Price"). For purposes of this Lease, the Project Costs are defined as the total of all costs incurred by Landlord in the acquisition, design and construction and management of the Project, including but not limited to, the cost of the land, project management fee, developer fee, design, construction (including all contractors costs, general conditions, fee, and costs of all trade subcontractors), financing costs (including lender fees, interest, and pre-payment penalties), contingency, permits, testing and inspection, government and utility fees, insurance, interior improvements and tenant FFE, bonds, and legal costs, provided that such Project Costs shall not exceed \$12,817,378, excluding (a) costs of Tenant Requested Change Orders, (b), costs of County Delays, and (c) closing costs such as title and escrow fees, etc. The parties acknowledge that said amount includes \$1,870,000 payable under the Option Agreement, portions of which have been paid by Tenant, such that the maximum unpaid Purchase Price (excluding paid Tenant Requested Change Orders, paid County Delays, and closing costs) after Tenant's payment of the full Option Price will not exceed \$10,947,378 ($\$12,817,378 - \$1,870,000 = \$10,947,378$), provided that County has paid all amounts owed by Tenant under the Lease as of the close of escrow. The Purchase Price shall be amortized with a declining balance as set forth in Exhibit J attached hereto and incorporated herein by this reference. The Purchase Price shall be payable in a lump sum concurrent with the closing of escrow. The closing date of any purchase will be on the last day of the calendar month.

29. AUTHORITY. Only the Board of Supervisors has the authority, by formally approving and/or executing this Lease, to bind the County to the terms included herein. Each individual executing this Lease on behalf of Tenant represents and warrants that he or she is duly authorized to execute and deliver this Lease on behalf of Tenant, and that this Lease is binding upon Tenant in accordance with its terms. Landlord understands that no material terms of this Lease may be altered or deleted, nor may any new material terms be added to this Lease, without the express written approval of the Board of Supervisors, either through an amendment to the Lease or by other formal board action. No County officer, employee, agent or independent contractor has any authority to alter, add or delete the material terms of this Lease and Landlord may not rely upon any representations to the contrary. This limitation of authority applies to all material terms of the Lease including, without limitation, any monetary ceiling established for Tenant Improvements or other project costs of Landlord which are subject to reimbursement by County. County shall not reimburse Landlord for any expenses which exceed this ceiling. Notwithstanding the foregoing, the Chief Executive Officer of the County or its delegee (the "Chief Executive Officer") may take any administrative act on behalf of Tenant hereunder which does not have the effect of increasing Base Rent or other financial obligations of Tenant under this Lease, including without limitation, granting any approvals, terminating this Lease in the manner provided herein by an Early Termination Notice or otherwise, signing estoppel certificates, signing the Commencement Date Memorandum and Confirmation of Lease Terms

or subordinating this Lease. Each individual executing this Lease on behalf of Landlord represents and warrants that he or she is duly authorized to execute and deliver this Lease on behalf of Landlord, and that this Lease is binding upon Landlord in accordance with its terms.

30. ACKNOWLEDGMENT BY LANDLORD

Landlord acknowledges that it is aware of the following provisions:

(a) Consideration of GAIN Program Participants. Should Landlord require additional or replacement personnel after the effective date of this Lease, Landlord shall give consideration for any such employment, openings to participants in the County Department of Public Social Services' Greater Avenues for Independence ("GAIN") Program who meet Landlord's minimum qualifications for the open position. The County will refer GAIN participants by job category to Landlord.

(b) Solicitation of Consideration. It is improper for any County officer, employee or agent to solicit consideration in any form from a landlord with the implication, suggestion or statement that the landlord's provision of the consideration may secure more favorable treatment for the landlord in the award of the Lease or that landlord's failure to provide such consideration may negatively affect the County's consideration of the landlord's offer to lease. A landlord shall not offer or give, either directly or through an intermediary, consideration in any form to a County officer, employee or agent for the purpose of securing favorable treatment with respect to the award of the Lease. Landlord shall immediately report any attempt by a County officer, employee or agent to solicit such improper consideration. The report shall be made either to the County manager charged with the supervision of the employee or to the County Auditor-Controller's Employee Fraud Hotline at (213) 974-0914 or (800) 544-6861. Failure to report such solicitation may result in the landlord's submission being eliminated from consideration.

(c) Landlord Assignment.

(i) Landlord may assign, transfer, mortgage, hypothecate or encumber Landlord's right, title and interest in and to this Lease or any portion thereof (including the right to receive rental payments but excluding its duties and obligations hereunder), and Landlord may execute any and all instruments providing for the payment of Base Rent directly to an assignee or transferee, but only if the conditions set forth in this Section are met.

(ii) Any document or agreement purporting to assign, transfer, mortgage, hypothecate or encumber Landlord's right, title and interest in and to this Lease or any portion thereof, is hereinafter referred to as a "Security Agreement." Any Security Agreement which is executed without full compliance with the requirements of this Section shall be void.

(iii) Each assignee or transferee under the Security Agreement shall certify and agree in writing that such assignee or transferee has read and is familiar with the requirements of Sections 5950-5955 of the California Government Code, which prohibits the offer or sale of any security constituting a fractional interest in this Lease or any portion thereof, without the prior written consent of the County. Notwithstanding the foregoing, the County hereby acknowledges and agrees that Landlord shall have the right to encumber the Property

with CMBS (collateralized mortgage backed securities) financing or other traditional real estate financing. However, Landlord may not encumber the Property through any type of bond financing vehicle, including but not limited to certificate of participation financing.

(iv) Violation by Landlord of the provisions of Section 5951 of the California Government Code will constitute a material breach of this Lease, upon which the County may impose damages in an amount equal to the greater of (a) \$500,000 or (b) 10% of the aggregate principal portion of all rental payments payable by the County during the entire Term of this Lease, it being expressly agreed that the aforesaid amount shall be imposed as liquidated damages, and not as a forfeiture or penalty. It is further specifically agreed that the aforesaid amount is presumed to be the amount of damages sustained by reason of any such violation, because from the circumstances and nature of the violation it would be impracticable and extremely difficult to fix actual damages. In addition, the County may exercise or pursue any other right or remedy it may have under this Lease or applicable law.

(v) Landlord shall give the County notice and a copy of each Security Agreement and any other instrument relating thereto (including, but not limited to, instruments providing for the payment of Base Rent directly to an assignee or transferee) at least two weeks prior to the effective date thereof.

(vi) Landlord shall not furnish any information concerning County or the subject matter of this Lease (including, but not limited to, offering memoranda, financial statements, economic and demographic information, and legal opinions rendered by the office of counsel for the County) to any person or entity, except with County's prior written consent. Landlord shall indemnify, defend and hold County and its officers, agents and employees harmless from and against all claims and liability alleged to arise from the inaccuracy or incompleteness of any information furnished by Landlord in violation of this Section.

(vii) The provisions of this Section shall be binding upon and applicable to the parties hereto and their respective successors and assigns. Whenever in this Section Landlord is referred to, such reference shall be deemed to include Landlord's successors or assigns, and all covenants and agreements by or on behalf of Landlord herein shall bind and apply to Landlord's successors and assigns whether so expressed or not.

31. INTENTIONALLY OMITTED PROJECT IMPROVEMENTS(a) Construction of Project Improvements. Prior to the Rent Commencement Date, at its sole cost, Landlord shall construct or cause to be constructed the turn-key Library project in accordance with Exhibits F-M of the RFP, in the manner set forth herein and in accordance with the Option Agreement and the approved plans and specifications approved by Tenant pursuant thereto. The Landlord will also ensure that Landlord's portion of all low voltage systems and infrastructure are in full compliance with the County Library's Low Voltage Specifications, Exhibit I. This work shall be referred to collectively herein as the "Project Improvements."

(b) Cost of Project Improvements. All Project Improvements shall be performed at the sole expense of Landlord and shall be included in the annual Base Rent hereunder and are not reimbursable by Tenant other than as expressly provided herein. In the event of any early termination of the Lease by Tenant for any reason (including, without limitation, a Landlord Default), Tenant shall reimburse Landlord for any unamortized portion of

the cost of the Project Improvements in a lump sum as outlined in Exhibit J attached hereto and incorporated herein by this reference, payable to Landlord within 30 days of the effective date of such early termination.

(c) Bids. Landlord represents that, unless waived by Tenant in writing, any major contractors, subcontractors and materials providers providing labor and/or materials for the Project Improvements were or shall be selected only after at least three (3) bids have been solicited from responsible and qualified persons. For purposes of this Lease, "major contractors, subcontractors and materials providers" are those whose total contract value is more than \$250,000.

(d) Compliance with Laws During Construction. Construction of the Project Improvements shall comply with all applicable laws and regulations and shall be subject to the general inspection of Tenant. The Premises shall comply with all applicable city, county, state and federal building codes, regulations and ordinances required for beneficial occupancy, including, but not limited to, all applicable provisions of the Labor Code of the State of California and the Americans With Disabilities Act ("ADA"). Under the provisions of the Labor Code, the State Department of Industrial Relations will ascertain the prevailing hourly rate in dollars and details pertinent thereto for each craft, classification or type of workman or mechanic needed for the construction of the improvements. Particulars of the current Prevailing Wage Scale, as approved by the Board of Supervisors which are applicable to the work, are filed with the Clerk of the Board of Supervisors and must be posted at the site.

(e) Compliance with Insurance Requirements During Construction. Landlord shall comply, and contractually require (and use diligent efforts to enforce such requirement), Landlord's General Contractor, any party to a Subcontract, and the Architect and Engineer to comply with the insurance requirements set forth in the Lease and all legal requirements in connection with the performance of all construction work on the Premises, including without limitation construction of the Project Improvements. Landlord shall ensure that such insurance is maintained at all times prior to the completion of construction of the Project Improvements and during the entire Construction Period. Landlord shall ensure that all premiums are paid, the insurance complies with all Insurance Requirements, and take all other actions necessary to keep such policies of insurance in effect until all work in connection with any construction on the Property shall have been completed.

(f) General Contractor's Bonds. Before commencing construction of any of the Project Improvements on the Premises, Landlord shall deliver, or cause its General Contractor to deliver, to the Tenant a performance bond or bonds and a labor and materials payment bond or bonds, issued by a surety authorized to do business in the State of California, guaranteeing full performance of the Landlord's General Contractor in connection with the construction of any Project Improvements in accordance with the Final Plans (as defined in the Option Agreement), and payment to all claimants for labor and materials used or reasonably required for use in the construction of the Project Improvements, in a form satisfactory to Tenant, in the amount of one hundred percent (100%) of the total Construction Budget, and with a surety approved by Tenant which approval shall not be unreasonably withheld or delayed. Such bonds shall name the Landlord and the Tenant as obligees. The term of each such bond shall commence on or before the commencement of construction. Each bond shall remain in effect until the date on which the bonded obligations are satisfied by the Landlord's General

Contractor or by the surety's performance in accordance with the terms of the bonds. The performance-bonded obligations shall be deemed to be satisfied upon the date of issuance of a Certificate of Occupancy for the Premises. Each payment bond shall remain in effect until (a) the expiration of the period for filing a claim of lien or serving a stop notice as provided by law, provided that no claim of lien or stop notice has been filed or served, or (b) if a claim of lien is filed or a stop notice is served, (i) the expiration of the period for filing an action to foreclose such lien or enforce such stop notice, provided that no such action has been filed, (ii) the date upon which the Project Improvements are freed from the effect of such claim of lien or stop notice and any action brought to foreclose such lien or enforce such stop notice, or (iii) the date upon which all liens or stop notices are otherwise discharged.

(g) Construction Meetings. During the course of construction, meetings shall be held between the Contractor, Architect, Landlord and Tenant representatives at least once per week, unless Tenant directs otherwise, at a time and place which is mutually convenient. An initial construction meeting shall be held within five (5) days of the Lease Commencement Date.

(h) County Representatives. The Tenant reserves the right to assign a representative on a full time basis at the project site during construction for the purpose of quality control and quality assurance. Tenant shall be responsible for all costs, wages, benefits, etc. for such representative.

(i) Temporary Facilities. The Landlord/Contractor will provide a separate office/trailer facility for Tenant's use during construction of at least 150 sq. ft. Facility shall have a lockable exterior door, screened windows, heating and air conditioning, Internet and telephone service, a six foot wide desk with drawers, plan table, plan rack, bookcase, shelf, a minimum of a three drawer file cabinet and at least three chairs. This facility shall be provided in addition to the Contractor's office.

(j) Completion Penalty. The turnkey library must be at substantial completion and ready for occupancy by August 1, 2016, subject to additional time for County Delays. Failure to complete the project by the required due date will result in a penalty of \$2,000 per day.

(k) Tenant Requested Change Orders. Tenant may request that Landlord make changes, additions, deletions or alterations in the Final Plans (each, a "Tenant Requested Change Order"). As provided by the parties' Option to Lease and Design Agreement dated August 19, 2014, Tenant Requested Change Orders do not include any changes necessary to meet building code requirements or receive necessary permits for the project. If a Tenant Requested Change Order is approved in writing by both the Landlord and the Tenant, then Landlord shall perform such change and invoice Tenant therefor. The costs of any approved Tenant Requested Change Orders will not be included as Rent or Purchase Price herein. The expenditure of additional funds for Tenant Requested Change Orders may not exceed 10% of the Purchase Price. Tenant shall pay for any Tenant Requested Change Orders in a lump sum within 30 days of completion and Tenant's acceptance of the work that was the subject of the Tenant Requested Change Order. Tenant may request Changes to the Project Improvements by notifying its Chief Executive Office, who upon approval will authorize notice to the Landlord to prepare a cost estimate for the Tenant Requested Change Order (each, a "Change Estimate"). Upon receipt of a Change Estimate request, the Landlord within seven days of its receipt shall submit a Change Estimate to the Chief Executive Officer and County Librarian which provides

(i) the proposed entire cost or credit of the specific requested change, including design and construction costs or credits as well as any costs or credits associated with project schedule impacts resulting from the requested change, such as overhead, general conditions, or profit claims (ii) the cumulative net total cost or credit of all Tenant Requested Change Orders previously approved, and (iii) an estimate of the construction time which will be increased or shortened if the requested change is approved as a Tenant Requested Change Order. If approved by Tenant within seven calendar days of receipt of the cost estimate, Tenant will provide Landlord with an approved Tenant Requested Change Order reflecting the scope of the change, its cost and schedule impact, if any, as per the Change Estimate provided by the Landlord. Each approval of a negotiated Tenant Requested Change Order by the Tenant must be signed and dated by the Chief Executive Officer and County Librarian.

(l) Fire Suppression System. Landlord will provide a Type II-B Non-Rated fire suppression system (but to include a Pre-Action Fire Sprinkler System).

(m) Fixtures, Furniture, and Equipment (FF&E). Landlord or Landlord's architect will work with Tenant and respective dealers to prepare the bid specifications for the furniture, fixtures, and equipment based on the format provided in the Sorensen Library Specifications (Exhibit K) of the RFP. Prior to submission for bids, Landlord or Landlord's architect shall review the bid packages with the Tenant and Tenant shall have the right to approve or disprove any item. The allowance set forth in Section 1 hereof has been set aside by the Landlord for its purchase and installation of FF&E without any offset or reimbursement from Tenant. (As clarification, such costs are Project Costs that are included in the Base Rent and the Purchase Price.)

(n) Tenant Improvement Costs Adjustment and Right to Audit. Within five (5) days of the issuance of a Certificate of Occupancy, or a final sign-off by the County of Los Angeles, whichever occurs first, Landlord shall provide to Tenant a statement showing in reasonable detail the total of all costs of Project Improvements provided by Landlord hereunder. Upon approval of the statement by Tenant, payments by either party pursuant to the Lease and this Landlord's Work Letter shall be adjusted as appropriate, based upon such statement. Tenant shall have the right to audit these costs for a period of twenty-four (24) months from the date of acceptance by Tenant of the Premises. In the event the audit shows that Tenant is entitled to a reduction in payments to the Landlord under this Lease, Tenant shall provide Landlord with a copy of the audit summary and Landlord shall pay Tenant the amount of any over-payment made by Tenant within thirty (30) days and future payments shall be adjusted as appropriate based upon the audit results.

(o) Conformed Plans. Within sixty (60) days after Substantial Completion of the Project Improvements and receipt from the Contractor of all field changes, Landlord shall submit to Tenant a set of conformed plans ("as-builts") incorporating, in accordance with standard industry custom and practice, field changes made and changes and/or revisions that have been made subsequent to the submission of the Final Plans. Landlord will provide five (5) sets of final plans and specifications. In addition, the Landlord shall submit the drawings on CDs in Auto CAD R 13.dwg (or current later version) format and PDF format and one complete set of specifications on CD in both Word and PDF formats.

(p) Ownership of Project Improvements. All of the Project Improvements and any other improvements of every kind and nature whatsoever installed by Landlord in the Building or on the Premises shall be the property of Landlord upon installation or construction and throughout the Term of this Lease. Upon expiration or early termination of this Lease for any reason (including, without limitation, any Tenant Default or Landlord Default), all such improvements and the Real Property on which they are located (including without limitation all fixtures, trade fixtures, and equipment) shall become County property only if Tenant reimburses Landlord for the full amount of any unpaid and unamortized portion of the cost of the Project Improvements in accordance with Section 32(b) hereof. Any Tenant equipment, furniture, and personal property existing on the Premises as of the Commencement Date or upon beneficial occupancy by Tenant shall remain the property of the Tenant.

(q) County Delays. In the event of a County Delay that impacts the critical path, County will pay Landlord for Landlord's overhead, general conditions, and contractor's fee for the period of the County Delay within 30 days of Landlord issuing a change order for the additional time and costs associated with the County Delay. For purposes of this subsection (q), Landlord's overhead, general conditions, and contractor's fee for County Delays will be calculated at a daily rate of \$5,000. This amount excludes daily subcontractor costs, added insurance costs, added interest cost and any penalties thereto, preferred return on equity, added legal costs, and any associated design or consultancy costs. These additional costs will be assessed at time of delay and will be added at cost incurred by Landlord to the above amount. Landlord will provide County with substantiation for the excluded costs (e.g., subcontractor costs, interest, etc.). Landlord must give Tenant written notice of any County Delays as soon as reasonably practical, but in any event within ten days of Landlord's actual knowledge of the County Delay. For purposes of calculating any County Delay under this subsection, Landlord shall provide Tenant 10 calendar days from date that Landlord needs a decision from County (excluding Tenant Requested Change Orders, which are governed by subsection (k)) before a County Delay shall be deemed to have occurred under this Lease.

IN WITNESS WHEREOF this Lease has been executed the day and year first above set forth.

LANDLORD:

GRIFFIN/SWINERTON, a joint venture

By: [Signature]
Name: MARK G HOGLUND
Its: Member of Management Committee

TENANT:

COUNTY OF LOS ANGELES
a body politic and corporate

By: [Signature]
Name: _____
Mayor, Board of Supervisors _____

ATTEST:

Patrick Ogawa
Acting Executive Officer-Clerk
of the Board of Supervisors

By: [Signature]
Deputy



I hereby certify that pursuant to Section 25103 of the Government Code, delivery of this document has been made.

PATRICK OGAWA
Acting Executive Officer
Clerk of the Board of Supervisors

By: [Signature]
Deputy

APPROVED AS TO FORM:

MARK J. SALADINO
County Counsel

By: [Signature]
Deputy

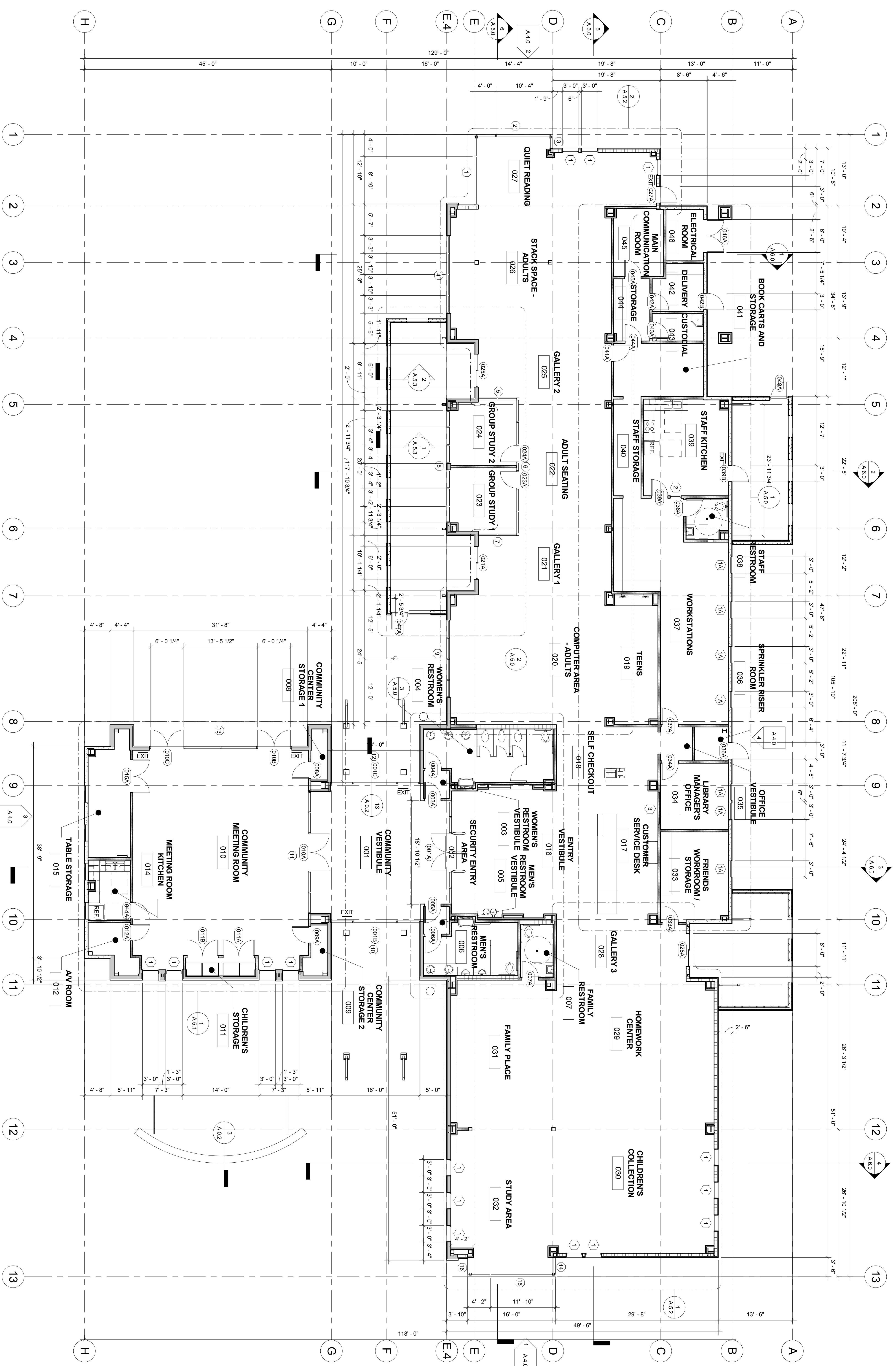
ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

30 **MAY 26 2015**

[Signature]
PATRICK OGAWA
ACTING EXECUTIVE OFFICER

78377

EXHIBIT A
FLOOR PLAN OF PREMISES
(see attached)



FLOOR PLAN
1/8" = 1'-0"

- FLOOR PLAN LEGEND**
- ⊗ WINDOW REFERENCE
 - ⊗ STAIRWAY REFERENCE
 - ⊗ DOOR TAG
 - ⊗ TACTILE EXIT SIGNS SEE GEN'S FOR INSTALLATION DETAILS
 - EXT. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF EXIT SIGNS

- WALL TYPE SCHEDULE**
- 6" EXTERIOR CORRUGATED METAL STUD WALL
 - 6" EXTERIOR STONE VENEER METAL STUD WALL
 - 6" EXTERIOR STUCCO METAL STUD WALL
 - 4" INTERIOR METAL STUD WALL
 - 6" INTERIOR METAL STUD WET WALL
 - 2-1/2" INTERIOR METAL STUD FURRED WALL
 - SEE A6.5 FOR WALL TYPE DETAILS

REVISIONS:

NO.	DESCRIPTION	DATE
1	100% CD / PERMIT SUBMITTAL	08/20/15

DATE ISSUED: 12/12/2014
 PROJECT NO: 1440126
 SCALE: As Indicated
 SHEET NUMBER: **A 1.0**
 SHEET TITLE: FLOOR PLAN

OWNER: GRIFFIN | SWINERTON, A JOINT VENTURE
PROJECT NAME: QUARTZ HILL PUBLIC LIBRARY
 CLIENT ADDRESS: 385 Second Street, Laguna Beach, CA 92651



EXHIBIT B

Legal Description of Property

(see attached)

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 3 AND 4 OF PARCEL MAP NO: 1150, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, RECORDED IN MAP BOOK NO. 26, PAGE 44 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

ALSO THE NORTHERLY 340 FEET OF LOT 52 OF TRACT MAP NO. 11760, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, RECORDED IN MAP BOOK NO. 216 PAGES 1, 2, 3, & 4. FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

SAID LAND IS ALSO DESCRIBED AS LOT 1 IN THAT CERTAIN AND BY CERTIFICATE OF COMPLIANCE FOR LOT LINE ADJUSTMENT, CC NO. 101,163, A CERTIFIED COPY OF WHICH IS RECORDED SEPTEMBER 16, 1992, AS INSTRUMENT NO. 92-1722234, OF OFFICIAL RECORDS.

APN: 3101-013-058

Plotted Easement

EXHIBIT C

COMMENCEMENT DATE MEMORANDUM

Reference is made to that certain lease (“Lease”) dated _____, between County of Los Angeles, a body politic and corporate (“Tenant”), and Griffin/Swinerton, a joint venture, (“Landlord”), whereby Landlord leased to Tenant and Tenant leased from Landlord certain premises in the building located at 5040 West Avenue M-2, Lancaster, CA 93536 (“Premises”),

Landlord and Tenant hereby acknowledge as follows:

- (1) Landlord delivered possession of the Premises to Tenant in a Substantially Complete condition on _____ (“Possession Date”);
- (2) The Lease commenced on _____ (“Commencement Date”);
- (3) The Premises contain _____ rentable square feet of space; and
- (4) Base Rent Per Month is \$ _____

IN WITNESS WHEREOF, this Memorandum is executed this _____ day of _____, 201__.

“Tenant”	“Landlord”
COUNTY OF LOS ANGELES, a body politic and corporate By: Name: Its: <u>Director of Real Estate</u>	By: GRIFFIN/SWINERTON, a joint venture Name: _____ Its: _____

EXHIBIT D

TENANT ESTOPPEL CERTIFICATE

To: GRIFFIN/SWINERTON
385 Second Street
Laguna Beach, CA 92651
Attn: Roger Torriero

Re: Date of Certificate:
Lease Dated:
Current Landlord:
Located at:
Premises:
Commencement Date of Term:
Expiration Date:
Current Rent:

County of Los Angeles ("Tenant") hereby certifies that as of the date hereof:

- 1. Tenant is the present owner and holder of the tenant's interest under the lease described above, as it may be amended to date (the "Lease"). The Lease covers the premises described above (the "Premises") in the building (the "Building") at the address set forth above.
2. (a) A true, correct and complete copy of the Lease (including all modifications, amendments, supplements, side letters, addenda and riders of and to it) is attached to this Certificate as Exhibit A.
(b) The current Rent is set forth above.
(c) The term of the Lease commenced on the Commencement Date set forth above and will expire on the Expiration Date set forth above, including any presently exercised option or renewal term. Except as specified in the Lease, Tenant has no option or right to renew, extend or cancel the Lease.
(d) Except as specified in the Lease, Tenant has no option or right to lease additional space in the Premises or Building or to use any parking.
(e) Except as specified in the Lease, Tenant has no option or preferential right to purchase all or any part of the Premises (or the land of which the Premises are a part).
(f) Tenant has made no agreement with Landlord or any agent, representative or employee of Landlord concerning free rent, partial rent, rebate of rental payments or any other similar rent concession, except as expressly set forth in the Lease.
3. (a) The Lease constitutes the entire agreement between Tenant and Landlord with respect to the Premises, has not been modified, changed, altered or amended and is in full force and effect. There are no other agreements, written or oral, which affect Tenant's occupancy of the Premises.
(b) To the knowledge of Tenant, Tenant has not given Landlord written notice of a material default under the Lease which has not been cured.
(c) The interest of Tenant in the Lease has not been assigned or encumbered. Tenant is not entitled to any credit against any rent or other charge or rent

concession under the Lease except as set forth in the Lease. No rental payments have been made more than one month in advance.

4. All contributions required to be paid by Landlord to date for improvements to the Premises have been paid in full and all of Landlord's obligations with respect to tenant improvements have been fully performed.

IN WITNESS WHEREOF, the Tenant has executed this Tenant Estoppel Certificate as of the day set forth above.

COUNTY OF LOS ANGELES

By: _____

Name: _____

Title: _____

APPROVED AS TO FORM:

MARK J. SALADINO
County Counsel

By: _____
Deputy:

EXHIBIT E

SUBORDINATION, NON-DISTURBANCE

AND ATTORNMENT AGREEMENT

AND WHEN RECORDED MAIL TO:)
)
)
County of Los Angeles)
CHIEF EXECUTIVE OFFICE)
Real Estate Division)
222 South Hill Street, 3rd Floor)
Los Angeles, California 90012)

Space above for Recorder's Use

**SUBORDINATION,
AND ATTORNMENT AGREEMENT**

NON-DISTURBANCE

NOTICE: THIS SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT RESULTS IN YOUR LEASEHOLD ESTATE BECOMING SUBJECT TO AND OF LOWER PRIORITY THAN THE LIEN OF SOME OTHER OR LATER SECURITY INSTRUMENT.

This Subordination, Non-Disturbance and Attornment Agreement ("Agreement") is entered into as of the _____ day of _____, 201__ by and among COUNTY OF LOS ANGELES, a body politic and corporate ("Tenant"), GRIFFIN/SWINERTON, a joint venture ("Borrower") and _____, ("Lender").

Factual Background

A. Borrower owns certain real property more particularly described in the attached Exhibit A. The term "Property" herein means that real property together with all improvements (the "Improvements") located on it.

B. Lender has made or agreed to make a loan to Borrower. The Loan is or will be secured by a deed of trust or mortgage encumbering the Property (the "Deed of Trust").

C. Tenant and Borrower (as "Landlord") entered into a lease dated _____ (the "Lease") under which Borrower leased to Tenant the Improvements located within the Property and more particularly described in the Lease (the "Premises").

D. Tenant is willing to agree to subordinate Tenant's rights under the Lease to the lien of the Deed of Trust and to attorn to Lender on the terms and conditions of this Agreement. Tenant is willing to agree to such subordination and attornment and other conditions, provided that Lender agrees to a Non-Disturbance provision, all as set forth more fully below.

Agreement

Therefore, the parties agree as follows:

1. Subordination. Subject to the provisions of Section 3 below, the Lease shall be subject and subordinate to the lien of the Deed of Trust and to any renewals, modifications, consolidations, replacements and extensions of the Deed of Trust to the full extent of the principal sum secured by the Deed of Trust including any interest.

2. Definitions of "Transfer of the Property" and "Purchaser". As used herein, the term "Transfer of the Property" means any transfer of Borrower's interest in the Property by foreclosure, trustee's sale or other action or proceeding for the enforcement of the Deed of Trust or by deed in lieu thereof. The term "Purchaser", as used herein, means any transferee, including Lender, of the interest of Borrower as a result of any such Transfer of the Property and also includes any and all successors and assigns, including Lender, of such transferee.

3. Non-Disturbance. So long as Tenant is not in material default under the Lease (beyond any applicable period given Tenant to cure such default), the Transfer of the Property or any enforcement of the Deed of Trust shall not terminate the Lease or disturb Tenant in the possession and use of the leasehold estate created thereby, or deprive Tenant of any other property rights granted in the Lease, including any option to extend the term of the Lease, right of first offer to lease additional premises, option to purchase the Property, or right of first option to purchase the Property.

4. Attornment. Subject to Section 3 above, if any Transfer of the Property should occur, Tenant shall and hereby does attorn to Purchaser, including Lender if it should be the Purchaser, as the landlord under the Lease, and Tenant shall be bound to Purchaser under all of the terms, covenants and conditions of the Lease for the balance of the Lease term and any extensions or renewals of it which may then or later be in effect under any validly exercised extension or renewal option contained in the Lease, all with the same force and effect as if Purchaser had been the original landlord under the Lease. This attornment shall be effective and self-operative without the execution of any further instruments upon Purchaser's succeeding to the interest of the landlord under the Lease.

5. Lender Not Obligated. Lender, if it becomes the Purchaser or if it takes possession under the Deed of Trust, and any other Purchaser shall not (a) be liable for any damages or other relief attributable to any act or omission of any prior Landlord under the Lease including Borrower; or (b) be subject to any offset or defense not specifically provided for in the Lease which Tenant may have against any prior landlord under the Lease; or (c) be bound by any prepayment by Tenant of more than one month's installment of rent; or (d) be obligated for any security deposit not actually delivered to Purchaser; or (e) be bound by any modification or amendment of or to the Lease unless the amendment or modification shall have been approved in writing by the Lender; or (f) obligated to construct the Project Improvements, or any other tenant improvements, as provided in the Lease.

6. Notices. All notices given under this Agreement shall be in writing and shall be given by personal delivery, overnight receipted courier or by registered or certified United States mail, postage prepaid, sent to the party at its address appearing below. Notices shall be effective upon receipt (or on the date when proper delivery is refused). Addresses for notices may be changed by any party by notice to all other parties in accordance with this Section.

To Lender: _____

To Borrower: Griffin/Swinerton
385 Second Street, Laguna Beach, CA 92651
Attn: Roger Torriero

To Tenant: County of Los Angeles
Chief Executive Office
Real Estate Division
222 South Hill Street, 3rd Floor
Los Angeles, California 90012
Attention: Director of Real Estate

7. Miscellaneous Provisions. This Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and assigns. This Agreement is governed by the laws of the State of California without regard to the choice of law rules of that State.

8. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute but one and the same instrument.

9. No Modification. Tenant agrees that so long as Lender has an assignment of Landlord's interest in the Lease, Tenant will not, without the prior written consent of Lender (a) modify, extend, in any manner alter the terms of, or terminate the Lease (unless Tenant reimburses Landlord for the full amount of the unamortized portion of the cost of the Project (and all amounts payable under any construction loan from any lender for the purposes of construction the Project Improvements) as provided in the Lease, or (b) accept Landlord's waiver of or release from the performance of any material obligations under the Lease.

10. Landlord's Default. Tenant will not seek to terminate the Lease by reason of any act or omission of Landlord until Tenant shall have given written notice of such act or omission to Lender. Tenant agrees that Lender shall have the right, but not the obligation, to remedy such act or omission on behalf of Landlord within thirty (30) days after the receipt of such notice; provided, however, that said 30-day period shall be extended so long as within said 30-day period, Lender has commenced to cure and is proceeding diligently to cure said default or defaults.

TENANT: COUNTY OF LOS ANGELES,
a body politic and corporate

APPROVED AS TO FORM

MARK J. SALADINO
County Counsel

By: _____
Deputy:

By: _____
Director of Real Estate

BORROWER:
GRIFFIN/SWINERTON, a joint venture

By: _____
Name: _____
Title: _____

LENDER: [*Insert name of Lender*],
By: _____

2. Nondisturbance. The Transfer of the Property or enforcement of the Deed of Trust shall not terminate the Lease or disturb Tenant in the possession and use of the leasehold estate created thereby, or deprive Tenant of any other property rights granted pursuant to the Lease.

3. Attornment. Provided that Lender complies with Section 2 above, if any Transfer of the Property should occur, Tenant shall and hereby does attorn to Purchaser, including Lender if it should be the Purchaser, as the landlord under the Lease, and Tenant shall be bound to Purchaser under all of the terms, covenants and conditions of the Lease for the balance of the Lease term and any extensions or renewals of it which may then or later be in effect under any validly exercised extension or renewal option contained in the Lease, all with the same force and effect as if Purchaser had been the original landlord under the Lease. This attornment shall be effective and self-operative without the execution of any further instruments upon Purchaser's succeeding to the interest of the landlord under the Lease.

4. Lender Not Obligated. Provided that Lender complies with Section 2 above, Lender, if it becomes the Purchaser or if it takes possession under the Deed of Trust, and any other Purchaser shall not (a) be liable for any damages or other relief attributable to any act or omission of any prior Landlord under the Lease including Borrower; or (b) be subject to any offset or defense not specifically provided for in the Lease which Tenant may have against any prior landlord under the Lease; or (c) be bound by any prepayment by Tenant of more than one month's installment of rent; or (d) be obligated for any security deposit not actually delivered to Purchaser; or (e) be bound by any modification or amendment of or to the Lease unless the amendment or modification shall have been approved in writing by the Lender.

5. Notices. All notices given under this Agreement shall be in writing and shall be given by personal delivery, overnight receipted courier or by registered or certified United States mail, postage prepaid, sent to the party at its address appearing below. Notices shall be effective upon receipt (or on the date when proper delivery is refused). Addresses for notices may be changed by any party by notice to all other parties in accordance with this Section.

To Lender: _____

To Borrower: Griffin/Swinerton
385 Second Street, Laguna Beach, CA 92651
Attn: Roger Torriero

To Tenant: County of Los Angeles
Chief Executive Office
Real Estate Division
222 South Hill Street, 3rd Floor
Los Angeles, California 90012
Attention: Director of Real Estate

6. Miscellaneous Provisions. This Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and assigns. This Agreement is governed by the laws of the State of California without regard to the choice of law rules of that State. This Agreement is the entire agreement between the Lender and Tenant and may only be modified by a written amendment executed by Lender and Tenant.

APPROVED AS TO FORM

TENANT: COUNTY OF LOS ANGELES,
a body politic and corporate

MARK J. SALADINO
County Counsel

By: _____

By:

Deputy County Counsel

Director of Real Estate

BORROWER: [Insert name of Landlord]

By: _____

Name: _____

Title: _____

LENDER: [Insert name of Lender]

By: _____

Name: _____

Title: _____

EXHIBIT G

REQUEST FOR NOTICE

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL TO:

County of Los Angeles
CHIEF EXECUTIVE OFFICE
Real Estate Division
222 South Hill Street, 3rd Floor
Los Angeles, California 90012
Attention: Director of Real Estate

REQUEST FOR NOTICE

(UNDER SECTION 2924B CIVIL CODE)

In accordance with Section 2924b, Civil Code, request is hereby made that a copy of any Notice of Default and a copy of any Notice of Sale under the Deed of Trust described below:

Date of Recording of Deed of Trust

Instrument Number of Deed of Trust

Trustor

Trustee

Beneficiary

be mailed to County of Los Angeles, Chief Executive Office, Real Estate Division, 222 South Hill Street, 3rd Floor, Los Angeles, California 90012, Attention: Director of Real Estate.

"LENDER:

a _____

By: _____
SIGNEE'S NAME

Its: SIGNEE'S TITLE

(ALL SIGNATURES MUST BE ACKNOWLEDGED)

COUNTY OF _____ ss.

On this ____ day of _____, 20__, before me, _____
_____ a Notary Public in and for the State of California, personally appeared _____
_____ personally known to me (or proved on the
basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the
within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the
instrument the person(s), or the entity upon behalf of which the person(s) acted, executed
the instrument.

WITNESS my hand and official seal

Signature _____

My commission expires _____.

EXHIBIT H

COMMUNITY BUSINESS ENTERPRISE FORM

INSTRUCTIONS: All Landlords shall submit this form on an annual basis on or before December 30th of each year of the term of this agreement as evidence of CBE participation. The information requested below is for statistical purposes only. On final analysis and consideration, leases will be selected without regard to gender, race, creed, or color. Categories listed below are based on those described in 49 CFR Section 23.5.

Firm Name	
Address	
Contact Name	
Telephone No.	
Total # of Employees	
Business Structure*	

*Corporation, Partnership, etc.

MINORITY/WOMEN PARTICIPATION IN FIRM

	OWNERS	ASSOCIATE PARTNERS			
Black/African American					
Hispanic/Latin					
Asian American					
Portuguese American					
A. Indian/Alaskan					
All Others					
TOTAL					
Women*					

**Should be included in counts above and reported separately)*

PERCENTAGE OF MINORITY/WOMEN OWNERSHIP IN FIRM

	TOTAL # OF OWNERS	% OF OWNERSHIP
Black/African American		
Hispanic/Latin American		
Asian American		
Portuguese American		
American Indian/Alaskan Native		
All Others		
TOTAL		
Women*		

**Should be included in counts above and reported separately*

CURRENT CERTIFICATION AS MINORITY/WOMEN-OWNED FIRM

Is your firm currently certified as a minority owned business firm by the:

	yes	No	
State of California?			
City of Los Angeles?			
Federal Government?			

WE DO NOT WISH TO PROVIDE THE INFORMATION REQUIRED IN THIS FORM.

Initial here if applicable	Initial	

SIGNED:

TITLE:

DATE:

EXHIBIT I

County Library Low Voltage Specifications

(see attached)



COUNTY OF LOS ANGELES
INTERNAL SERVICES
DEPARTMENT
INFORMATION TECHNOLOGY SERVICE
TELECOMMUNICATIONS PROJECT MANAGEMENT



COMMUNICATIONS / LOW VOLTAGE SPECIFICATIONS

FOR

COUNTY OF LOS ANGELES PUBLIC LIBRARY



Issued
May 21, 2014

Contacts:

Migell Acosta, Assistant Director, Information Systems, Public Library
MAcosta@library.lacounty.gov , Tel #: 562-940-8418
Oscar Alejandro, Senior Telecommunications Systems Engineer, PM – TPMD
OAlejandro@isd.lacounty.gov , Tel #: 323-267-3176
Phil Lai, Telecommunications Systems Consulting Engineer, VVAD
PLai@isd.lacounty.gov , Tel#: 323-267-3556
Kenneth Cho, Information Technology Specialist, VVAD
KCho@isd.lacounty.gov , Tel#: 323-881-3995
Dana Scott, Telecommunications Systems Consulting Engineer, VVAD
DaScott@isd.lacounty.gov , Tel#: 562-267-3152
Michael Roberts, Supervisor – Electrical Shop, ISD/FOS
MRoberts@isd.lacounty.gov, Tel#: 323-881-4608

INTERNAL SERVICES DEPARTMENT

PART 1 GENERAL

1.1 SCOPE

Items of work included in this Section, described in detail in PART 3 - SYSTEMS. Also refer to attached typical drawings and cut-sheets as required.

Furnish and install a complete and functional system consisting of the following components/sub-systems as indicated (checked) below:

<u>Required</u>	<u>System Component/Sub-System</u>	<u>Pertinent Specifications</u>
	<u>Telecommunications Rooms</u> -----	Para. 1.6
<input type="checkbox"/>	BEFR(MPOE) -----	Para. 1.6A.1
<input type="checkbox"/>	Main Communications Room (MCR) -----	Para. 1.6A.2
<input type="checkbox"/>	Telecommunications Room (TR) -----	Para. 1.6A.3
	 <u>Building Systems</u>	
	Security-----	Para. 3.2
<input type="checkbox"/>	Intrusion Detection and Alarm -----	Para. 3.2.1
<input type="checkbox"/>	Access Control System -----	Para. 3.2.2
<input type="checkbox"/>	Restroom Door Release -----	Para. 3.2.3
<input type="checkbox"/>	Door Communications-----	Para. 3.2.4
<input type="checkbox"/>	Fire Alarm System Communicator -----	Para. 3.2.5
<input type="checkbox"/>	Overhead Paging System-----	Para. 3.3
	Video -----	Para. 3.4
<input type="checkbox"/>	CCTV -----	Para. 3.4.1
<input type="checkbox"/>	MATV-----	Para. 3.4.2
<input type="checkbox"/>	SATV (Satellite)-----	Para. 3.4.3
<input type="checkbox"/>	CATV (Cable Access) -----	Para. 3.4.4
<input type="checkbox"/>	Video Displays -----	Para. 3.4.5
<input type="checkbox"/>	Video Conferencing System-----	Para. 3.4.6
<input type="checkbox"/>	Digital Signage-----	Para. 3.4.7
	Cabling System -----	Para. 3.5
<input type="checkbox"/>	Station (Voice/Data)-----	Para. 3.5.1
<input type="checkbox"/>	Workstation Outlets-----	Para. 3.5.2
<input type="checkbox"/>	Wireless Network Access Point Data Cables-----	Para. 3.5.3
<input type="checkbox"/>	Patch Cables-----	Para. 3.5.4
	Distribution Cabling-----	Para. 3.6
<input type="checkbox"/>	Voice Cabling-----	Para. 3.6.1
<input type="checkbox"/>	Fiber Optic Cabling-----	Para. 3.6.2
<input type="checkbox"/>	Cable Testing (Copper and Fiber)-----	Para. 3.7

INTERNAL SERVICES DEPARTMENT

Voice/Communications Systems----- Para. 3.8

- Cisco Call Manager VOIP System-----Para. 3.8.1

Audio-Visual Systems ----- Para. 3.9

- Meeting Room ----- Para. 3.9.1
- Public Address System----- Para. 3.9.2
- Data/Video Projection----- Para. 3.9.3
- Projection Screen----- Para. 3.9.4
- Presentation System----- Para. 3.9.5

- WiFi Wireless Networks----- Para. 3.10

- Equipment Racks/Mountings----- Para 3.11

- Training----- Para 4.3

1.2 SPECIAL CONDITIONS

In addition to all stipulations in other portions of the general specifications, all concerned trades shall comply with the following special conditions that directly pertain to communications and security systems:

A. Contractor Qualifications

The specified equipment shall be furnished and installed by a contractor who can show proof of having satisfactorily engineered and installed comparable systems within the past five (5) years, and who holds all legally required licenses, including General Electrical C-10 and or a Communication C-7 licenses if required to install the systems mentioned herein.

Security and Access Control systems contractor must be an authorized, certified installer/dealer for Bosch security and Sielox access control systems. The contractor must be regularly engaged in the supply of security and access control systems, and must have occupied an established office for a period of not less than five (5) years prior to bid date within the Project's geographic market area. The Bosch and Sielox certified dealership letters must be provided to the County of Los Angeles ISD Contracting Division at time of bid and may at the County's discretion verify with the manufacturers prior to commencement of work. The dealer/contractor responsible for the installation of the Bosch security and Sielox access control systems must be the dealer who holds all required dealership letters and has attended all the manufacturer's training certification courses prior to bid date.

INTERNAL SERVICES DEPARTMENT

B. Parts Availability

The contractor shall confirm that within a reasonable distance of the job site, there is an established agency which stocks a full complement of parts, offers service during normal working hours on all equipment to be furnished and will supply parts to the County without delay and at reasonable cost.

C. Continuous Duty Operation

All individual components and composite systems shall be designed for continuous operation without undue heating or change in rated values and shall be properly fused.

D. Compliance with Codes

All work shall be done in accordance with latest applicable edition of National Electrical Code and all regulations, laws, safety orders, ordinances or codes of State and local authority, whichever exceeds, having the jurisdiction. Wherever requirements in the specifications exceed those of the ordinances or codes, specifications shall govern. Nothing in the plans and specifications shall be deemed as authority to violate any of the ordinances or codes.

1.3 SYSTEMS RESPONSIBILITY

The contractor shall furnish and install all non-specified equipment required to make each system fully functional as per stated intent and description, without additional cost to the County.

1.4 WARRANTY

A. All equipment and systems shall be warranted by the contractor for a period of one year following acceptance by the County. The warranty shall include parts, labor, prompt field service, and pick-up and delivery at no cost to the County. If repair of a defect cannot be affected during the initial response, every effort shall be made by the contractor to promptly correct the defect including air shipment of repair parts and replacement of the next larger assembly. **Response to initial call shall be accomplished within four (4) hours.**

B. Routine non-warranty maintenance shall be performed by the County. Neither this maintenance nor emergency repairs made by qualified County technicians shall void the warranty.

C. During the warranty period, the contractor shall respond only to calls for service made by ISD or designated Library Representative and shall keep the Department fully informed as to problems which develop in equipment or systems and as to steps the contractor has taken to rectify those problems. **Response to initial call shall be accomplished within four (4) hours.**

INTERNAL SERVICES DEPARTMENT

1.5 DOCUMENTS TO BE SUBMITTED BY THE CONTRACTOR

A. Submittal Format

1. Submittal shall be furnished in an 8 ½" x 11" format in 3-ring loose-leaf binders. The cover and the title page shall bear the project name, capital project number, specification number, name of contractor and date. The document shall have a table of contents and page numbers on each of the pages including brochures and drawings.
2. Drawings shall be no larger than 24"x 36". Drawings larger than 8 ½" x 11" shall be folded to 8 ½" x 11" so that the drawing's name and page number are visible and can be unfolded without being removed.
3. Reproduced material shall not be subject to fading by light or heat and shall have high contrast for easy reading.

B. Preliminary Submittal

Within 30 days after contract award and prior to purchase of any equipment, the contractor shall submit five (5) copies of a Preliminary Submittal for review and approval; three (3) copies to the Library Capital Project Section and two (2) to the ISD Project Manager. The submittal shall consist of the following:

1. Proposed material list including manufacturer's name, model number and technical data for all equipment the contractor proposes to install. Items shall be identified by specification section and paragraph number. The technical data shall consist of copies of factory issued catalog sheets or brochures, which give ratings and specifications for the proposed items.
2. Single line system diagram identifying and showing interrelationships between equipment items and how they are interconnected.
3. Shop drawings showing details of fabricated items, rack elevation drawings, console arrangements and schematics of custom designed items.
4. Statement describing exceptions being taken, if any, to the specifications wherein the submitted equipment or design varies from that originally specified.
5. If the contractor fails to list a particular variance and his submittal is accepted, but subsequently is deemed by the County to be unsatisfactory because of an unlisted variance, the contractor must replace or modify such equipment at once and without cost to the County.
6. For any exceptions that are not approved by County, contractor shall resubmit the information in complete compliance with the specifications and drawings.

INTERNAL SERVICES DEPARTMENT

Information Technology Services

Telecom Proj Mgmt Division

C. Record (As-Built) Drawings

1. Record drawings shall be made on separate clean blue line prints of the electrical drawings issued by the County or Architect and shall be reserved for the purpose of showing work as actually installed, including accurately dimensioned locations of all conduit stub-outs and pull boxes, routing of all conduits extending from or between buildings and locations of all telecommunications equipment not installed according to drawings.
2. Drawings shall be kept up to date with neat and legible annotations made thereon daily as work proceeds, showing work as actually installed. Additional sheets may be attached to show greater detail. Drawings shall be available at all times for inspection and shall be kept on the job at a location designated by the County.
3. Contractor at his option may use an additional set of drawings for daily field annotations. This set of drawings shall be kept at the site.
4. Final record drawings shall be submitted with floor numbers, room numbers, panel directories and all other identification necessary to conform to number designations for occupancy rather than to construction numbers. All buried conduit and/or underground conduits stubs intended for future extension shall be accurately shown as to depth and exact measurement from a permanently established landmark, such as building or structural features.
5. On completion, record drawings shall be signed, dated and returned to the County for inspection and approval before acceptance of any work.
6. Provide three (3) sets of drawings to Library Capital Projects Section and one (1) set to ISD Project Manager.

D. Final Submittal

Three (3) complete sets of the Final Submittal including a full set of the drawings on bond paper shall be delivered to the Library Capital Projects Section and two (2) complete sets to the ISD Project Manager prior to acceptance tests and as a condition for final payment for the project to the contractor. It shall include all the information necessary to maintain each system, and shall consist of the following:

1. Operators Instructions (as applicable).
2. Factory-issued Service Manuals for each piece of equipment installed. The manuals shall contain complete parts lists, detailed schematics, circuit descriptions, maintenance procedures and trouble-shooting methods. In the event such manuals are not available from the factory, it shall be the responsibility of the contractor to compile and submit the required information.

INTERNAL SERVICES DEPARTMENT

Information Technology Services

Telecom Proj Mgmt Division

3. A System Manual for each system furnished. This manual shall complement the above service manuals with all necessary additional information unique to the system that is not otherwise provided, such as a list of applicable service manuals, options selected, jumper or strapping choices, modifications, and detailed wiring information. All manuals shall be bound in a 3-ring binder with tabs identifying each system.
4. Record Drawings (see Paragraph 1.5, C.5).
5. Two (2) electronic copies of all communications drawing in AutoCAD 2007 or the latest version or format or as specified by the ISD Telecommunications System Engineer, shall be provided. One copy to the Library Capital Project Section and one copy to the County ISD Project Manager.

E. Addresses

1. Library Capital Projects Section
7400 E. Imperial Hwy
Downey, CA 90242
2. ISD Project Manager
Oscar Alejandro 323-267-3176
1112 N. Eastern Ave
Los Angeles, CA 90063

1.6 TELECOMMUNICATIONS ROOMS

To complete the installation, testing and cut-over of the telephone and other sub-systems in a timely manner, the contractor shall give a high priority to completing ALL of the following as soon as possible and no later than four (4) weeks prior to the scheduled completion target date. Library Capital Projects Staff and ISD Telecommunications Engineer also require immediate notification of any changes in the target date. Failure to comply with these conditions can and will result in communications systems in-service, and occupancy, delays. Refer to typical drawings and cut-sheets as required.

A. Communication Rooms Designations

1. **Building Entrance Facility Room (BEFR) (Formerly designated as MPOE)**
The communications cables from the local telephone company, the Minimum Point Of Entry or MPOE, are terminated in this room. It will house any telephone company equipment necessary to provide service to the County. This room may be included in the MCR (Main Communications Room) if the Library is the only facility to be serviced from it.

In the case of a multi-tenant facility, this room will not be accessed through the Library. At no time will Library voice or data equipment be placed in this room.

2. Main Communications Room (MCR)

This room houses the Telephone system and main data communications equipment. The telecommunication cables from the BEFR, close workstations (as designated by ISD Project Manager), and TR's (if necessary), are terminated here. Intrusion Alarm equipment, Card Access System equipment, Door (with Card Reader or Panic Bar) Power Supplies Panels, Restrooms Door Releases Power Supply Panels, Paging equipment, CCTV, CATV distribution equipment, etc. are also housed in this room. Locations of the equipment, component, cabinet or panels in the MCR shall be coordinated with the ISD Project Manager.

The MCR shall be located in the building in such a way that it is accessible **only** from the Library Staff workroom. Additionally, it shall be placed such that no data cabling, when installed and terminated, will exceed **275 feet** or **current EIA/TIA Standard**.

The MCR shall be equipped with furniture to provide a work surface for technical staff. This shall be in the form of a fully supported drop down work surface. This should be at a height that is comfortable to work at standing. A "bar-type" stool shall be provided for sitting when necessary.

The MCR will also be equipped with an 18" deep bookshelf about the work surface. The length may be determined in the field. If the size of the room permits, a desk and chair should be provided in place of the drop down work surface.

3. Telecommunications Rooms (TR) (Formerly designated as IDF)

The ISD Project Manager along with appropriate Library Staff will determine if additional Telecommunications rooms are required. If required, the room shall be designated TR 1.2 for the first room on the first floor and TR 2.1 for the first room on the second floor, and so on. These rooms will house data communications equipment and cable terminations as required. The telecommunications cables from close workstations, as designated by ISD Project Manager, will be terminated here. It will also include Intrusion Alarm and Card Access equipment as necessary.

B. Air Conditioning

The MCR shall be provided with 24 hour, 7-day air conditioning. Under normal operating conditions, a separate duct zone connected from the main building system shall provide **COOL AIR ONLY** in the MCR. If the main system fails to operate or maintain the required ambient temperature, a standby emergency system shall be automatically activated. Both systems shall be provided and installed with separately controlled thermostats. The MCR shall NOT be under the control of any building energy conservations systems (BEAS). A temperature of 70 degrees Fahrenheit and a relative humidity range of 40% to 60% shall be maintained at all times. Before ANY network

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equipment can be powered up, a live test of the air conditioning system shall be conducted in the presence of the ISD/Project Manager or his/her designee.

NO air conditioning units (HVAC), condensate lines, water heaters, or other types of water lines other than fire sprinklers (with the highest temperature head and pre-action type only) as required by code, may be mounted directly above any MCR or Telecommunications Room (TR) unless otherwise approved in writing by the ISD Project Manager. In multi-story buildings, where TR's are placed directly above MCR's, or other TR's, (i.e. building risers) air conditioning/heating vents and ducts shall not be placed in the ceiling space directly under the TR.

C. Electrical Requirements

Install "twist lock" (L5-30R or L6-30R as required) and QUAD (NEMA 5-20R) power receptacles mounted on the designated locations in the equipment racks. Install QUAD (NEMA 5-20R) electrical outlets in MCR/TR/IDF walls as shown on the plans.

Intrusion Detection/Alarm System, Access Control System, Panic Bar/Door Locking Devices Power Supplies, Restrooms Door Releases Power Supplies, Fire Alarm Control panel and Fire Alarm Communicator (dialer) panel must be provided with dedicated hard-wired circuits rated at 125V-20 Amps.

Power receptacles/outlets shall be on dedicated circuit with isolated ground.

D. Fire Protection

Provide a smoke detector and a high temperature sensor at the MCR, TR or IDF rooms. Connect the detector or sensor to the Fire Alarm panel as two different zones. A fire extinguisher of the type recommended to be used for electrical fires shall be installed on the wall adjacent to the Telecommunications Room door where it can be reached without completely entering the room. If the Telecommunications Room is to be equipped with fire protection/sprinkler heads, it shall be of the highest temperature and "Pre-Action" type.

E. Backboards

Install fire-retardant, 3/4 inch x 8 feet plywood backboards covering ALL four (4) walls of the Telecommunications Room with the bottom mounted at 12-inches above finished floor. Backboards shall be painted "Off-White". Backboard shall be anchored on the wall and capable of supporting installation of communications equipment/panels.

F. Door Locks

Install a door lock mechanism keyed separately from all other doors or a card key reader (if the building has Access Control System) on all Telecommunications Rooms.

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G. Grounding

The grounding in all Telecommunications Rooms shall be a **#2/0 AWG** insulated ground cable (stranded) from main building ground and terminate on a ground bus bar (Chatsworth **Standard Bus Bar P/N: CPI 10622-010**). See details on attached plan provided by ISD Project Manager.

H. Lighting

Lighting intensity in all Telecommunications Rooms shall be 90-100 foot-candles at 36 inches above finished floor. The bottom of lighting fixtures shall be 9 feet above finished floor.

I. Flooring

Coordinate with architectural plans and provide anti-static vinyl flooring, Armstrong Static Dissipative Tile (SDT) Excelon Resilient Tile Flooring, or approved equivalent, in all Telecommunications Rooms. Anti-static vinyl flooring must be grounded to the MTGBB (Main Telecommunications Ground Bus Bar) through a flat copper strap or sheet at least 0.012 inch thick x 2 inch wide properly bonded to the bus bar.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

All materials and equipment shall be new, unused and manufactured within eighteen months prior to installation. Where applicable, all materials and equipment shall be listed by Underwriters Laboratories.

2.2 EQUIVALENT MATERIALS AND EQUIPMENT

Manufacturers' names and model numbers are used herein only as a means of establishing standards of quality and performance. Comparable equipment of standard manufacture and established reputation, which meets the requirements outlined above, may be submitted to ISD Project Manager for approval. Equipment of the following manufacturers may be used if it meets or exceeds parameters of the specified equipment.

- A. Intrusion Alarm - Bosch
- B. Access Control System – Sielox Access Control System (ACS)
- C. Door/Window Sensors – Sentrol
- D. Glass Break Sensors – Honeywell
- E. Sirens – Sentrol
- F. Photo Electric Beam Motion Detectors – Bosch Detection Systems/Honeywell
- G. Cable – Superior Essex, Belden, West Penn, Berk-Tek, General Cable, Panduit
- H. Panic Button – Suspicion, Edwards, Soundolier,
- I. Overhead Paging Amplifier – Bogen, Quam
- J. Community Room Public Address – QSC, JBL
- K. Loudspeaker/Transformer – Soundolier, Bogen, Quam, JBL

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- L. Loudspeaker/Enclosure/Baffle – Soundolier, Bogen, Quam, JBL
- M. Volume Control – Soundolier, Bogen, Quam, Atlas Sound
- N. TV Distribution Amp – Pico Macom, Blonder Tongue
- O. Public Area and Emergency Exit Doors Panic Hardware – Von Duprin Series #99, Series #33 or Detex V-40.
- P. Door Intercom – AiPhone AX series
- Q. Uninterruptible Power Supply System- APC

PART 3 SYSTEMS

3.1 SYSTEM & AUXILIARY EQUIPMENT PRE-INSTALLATION REQUIREMENTS

Electrical contractor shall install station conduits, riser conduits, cable trays and conduit hardware as shown on the plans and according to procedures described under heading Part 4 EXECUTION, G. Conduit.

The Telecommunications Rooms shall be constructed as shown on the plans and according to procedures described under heading Part 1.6. HVAC system in the MCR. The HVAC shall be operational 24-hours, 7 days a week. The heat dissipation of the communications equipment in the MCR is about **25,000 BTU**. This value is based on the average size of the library and should be lower for small libraries.

The Communications or Low Voltage contractor shall coordinate all cable installations and/or work with the General Contractor in accordance with the Construction schedule.

Ceiling contractor shall be responsible for removal and replacement of ceiling tiles to accommodate the telephone/data/security cables installation.

Electrical contractor shall coordinate with the Low Voltage contractor for the installation of conduits as required for the all systems and the 120V-24VDC transformer for electronic door lock devices at card reader locations as necessary.

Low Voltage contractor shall furnish and install Caddy J-Hook Cable Support System to support the voice, data and security cable runs in the ceiling space (4 hangers per 16 square feet) as required by codes. All cable installation shall be completed prior to the installation of the ceiling grid, if possible. The Low Voltage contractor shall be responsible for any damage, physical or cosmetic, to ceiling tiles and grids. The Communications or Low Voltage contractor shall be responsible to coordinate with the General/Electrical contractor regarding the cable pathway in the ceiling space as required.

BUILDING SYSTEMS

3.2 SECURITY

3.2.1 INTRUSION DETECTION AND ALARM

A. System Description and Installation Requirement

The intent and purpose of this system shall be to provide a security/intrusion detection entry alarm system in the building. All perimeter doors, roof hatches, or other external entry points shall be equipped with dedicated, concealed magnetic contact switches. Interior protection shall be provided by combination passive infrared/microwave detectors and glass break sensors located as indicated on the plans.

The alarm siren(s) shall be installed in the plenum above the keypad(s) as indicated on the plans. Each alarm device shall report to the LA County Sheriff Central Station as a **separate point**. Use point expander OctoPopit module(s) for the point expansion of the alarm panel and a separate enclosure(s) D8103 to house the expansion device(s). Install alarm cables **home run from each alarm device to the panel**. Appropriately sized “end of line” resistors shall be placed at the device end only.

Installation of modules, devices and wiring shall be in accordance with current Bosch design, installation, and engineering standards. Additional power supplies, batteries, OctoPopits, OctoRelays, D8132 Battery Charger and associated cables shall be mounted in additional D8103 cabinet(s). Maximum build out per D8103 or enclosure shall be 5 modules and or two (2) 12Volts - 7AH batteries.

The intrusion alarm cables shall be installed horizontally through the ceiling area in a neat and orderly fashion and supported by the Caddy J-Hook Cable Support system at appropriate intervals. The cables shall be positioned at least six (6) inches from electrical equipment, electrical wiring, telephone cabling, and intercom cabling and data wires. Exposed wiring shall only be permitted above ceiling level or ten (10) feet from floor level. The installation shall comply with the County of Los Angeles Building Safety and Fire Codes. Contractor shall furnish, at his expense, all permits issued for scope of work. Contractor shall supply copies of all permits acquired.

The **Bosch D9412GV4 Alarm Panel** with the **latest version of RPS software** and associated equipment enclosures shall be installed in the MCR room. Clearance in front of all alarm panels shall be a minimum of 36 inches. The alarm shall report to the LA County Sheriff Central Station. If required, Library Staff shall be responsible for obtaining an alarm permit from the local law enforcement authority.

The Bosch Alarm Panel shall power all peripheral alarm devices for 24 hours of standby time with 5 minutes in alarm condition conforming to NFPA 72 central station requirements in the event of power failure. Bosch load calculation worksheet page 61 & 63 of document 74-07692-000-D shall reflect all security equipment component current loads, standby battery requirements and standby battery calculations. Standby power on battery back-up should be at least one (1) hour unless the building has generator power.

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In this case, the power receptacle circuit where the alarm panel is connected should be included on the standby generator power circuit. Additional D8132 battery charger modules and batteries shall be installed in Bosch D8103 enclosures.

A junction box with 120V-20Amp dedicated hard-wired circuit, identified and labeled with panel and branch circuit numbers, shall be provided for the Intrusion Alarm system Power Transformer located in the designated wall space in the MCR backboard.

Power transformers shall be mounted in Bosch D8004 transformer enclosures.

All low voltage wirings running between panels and enclosures shall be in conduit.

The Intrusion Alarm panels shall be grounded to the Telecoms Ground Bus Bar in the MCR with a #12AWG (solid) ground wire with green insulation. The ground wire shall be run inside a ½ - inch conduit.

The Intrusion Alarm panels shall be provided with locks and four (4) sets of keys.

Terminations and connections throughout the system shall employ terminal strips with rising wire clamp screws or solder terminals, all in cabinets or enclosures. Splices, Telephone punch type blocks, and electrical wire nuts are not acceptable. Although shielded cable should not be used, in cases where it is used, all cable shields should be grounded. Shields shall be grounded on one end only.

The alarm contractor shall be responsible for programming and testing the alarm panel in the local mode. LA County ISD FOS shall program the system to communicate with the Sheriff Central Station and assign the customer with alarm pass codes. The alarm contractor shall furnish LA County ISD Project Manager with the completed Bosch programming sheets and As-Built (8½" x 11") drawings(s) that indicate each device/point location identified to reflect 16 character idle text in programming on not less than 12 point text on floor plan prior to ISD FOS inspection, tests and programming of the system to communicate with the Sheriff Central Station. The alarm contractor shall submit As-Built drawings as outlined in paragraph 1.5, D 5.0 above.

The following Security zones shall be programmed:

- Zone 1 – Staff & Public Area
- Zone 2 – Community Meeting Room Only
- Zone 3 – Delivery Vestibule Only

View Point status shall be configured in all Keypads or as designated by the ISD Project Manager.

The security alarm contractor shall be an authorized and current direct Bosch dealer as described in paragraph 1.2 A Contractor Qualifications. The contractor must provide proof of dealership with Bosch, as well as verification of prior experience with Bosch Controllers and System design, Detection Systems and have experience with

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programming system features. The installer must provide proof of training via a valid training certificate prior to any work to be performed. Certificate must have been issued more than six (6) months and less than five (5) years prior to installation date. **Proof of dealership must be attached with the contractor quotation.**

The system shall be armed and disarmed manually by authorized Public Library staff or on-site security staff.

The alarm contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Materials and Equipment

- a. Digital keypad – Bosch model D1255 Alpha IV.
- b. Alarm panel – **Bosch model D9412 GV4, with latest version of RPS software.**
- c. Passive infrared/microwave detector (surface-mounted) – Bosch DS970 (Long Range).
- d. Passive infrared/microwave detector (surface-mounted) – Bosch DS950 (Med. Range).
- e. Passive infrared/microwave detector (surface-mounted) – Bosch DS9360 (360°).
- f. Passive infrared/microwave detector (flush-mounted) – Honeywell 995 (Long or Wide range)
- g. Passive infrared/microwave detector (surface or flush-mounted) - Honeywell IS-280CM (360°).
- h. Passive infrared/microwave detector (surface or flush-mounted) – Honeywell DT636OSTC (360°) – For high ceiling 8 – 16 feet high.
- i. Glass break sensor – Honeywell FG1625F.
- j. Siren/Speaker – Sentrol MPI36.
- k. Magnetic door contact switch, flush mount – Sentrol model 1078CT.
- l. Magnetic door contact switch, surface mount, non-exposed wiring – Sentrol 1042 TW Series
- m. Magnetic door contact switch, surface mount, exposed wiring – Sentrol 2505 Series
- n. Magnetic door contact switch, floor mount (high security) – Sentrol model 2707A.
- o. Overhead Door Magnetic Contacts (surface/floor mount with armored cable – GE model 2202
- p. Transformer enclosure – Bosch D8004.
- q. Non-fire enclosure – Bosch D8103.
- r. 12V, 7AH batteries – two (2) Bosch D126 required for Intrusion Alarm Panel.
- s. Power Transformer – Bosch D1640.
- t. Keypad back boxes – Bosch D56.
- u. Aux relay – Bosch D136.
- v. Phone jack, modular – Bosch D166/RJ31X
- w. Battery charger – Bosch D8132.

- x. OctoPopit eight zone expander – Bosch D8128D.
- y. OctoRelay – Bosch D8129.
- z. 12/24 Vdc, 2.5 Amp power supply w/ battery – Altronix AL300ULX
- aa. Alarm cable – plenum (CMP) rated, stranded, PVC insulated, shielded, 18 gauge minimum or larger, two (2) pair twisted wire for keypad, glass break sensors and passive infrared / microwave detectors and door contacts - West Penn 253244B, CSC 112000 and CSC 112100.
- bb. Shielded wire shall be required if Bosch noise immunity design thresholds will be exceeded.
- cc. All other cables and/or hardware required to ensure the system is fully functional at optimum level.

3.2.2 ACCESS CONTROL SYSTEM (ACS)

A. System Description and Installation Requirement

The intent and purpose of this system shall be to provide access to secured areas of the library thru the Access Control system.

The system design utilizes the Sielox Pinnacle Access Software System design. One server computer is required. The system will enable Library Staff to control access for doors and/or areas through the programming of the restricted database feature on the Access Control System (ACS) software. Additional, remote workstation computers may be required and installed as required by Public Library. The system will also provide the capability for remote access database management or management via client network.

The ACS shall NOT be integrated with the Bosch Intrusion Alarm system. If required by Public Library, the ACS shall be integrated with the Intrusion Alarm system to provide access and disarm areas or security zones independent of the other zones. This may at County Public Library discretion incorporate an access level unique to a class of cardholders that when presented, will provide a dedicated momentary relay closure to disarm the Intrusion Alarm system.

The ACS system shall also include the Sielox Aegis2 Graphical & Control Integration Software. The Aegis2 software feature shall allow the ability to control all alarms produced by the Bosch or Sielox control panels and will display alarm information on any workstation with the Aegis2 Graphical Maps Display license. The Aegis2 will also allow for real time event monitoring of all the access control door locations. Any authorized administrator of the system shall be able to remotely lock or unlock doors from the Aegis2 application. The modular architecture of the Aegis2 system and subsystems shall allow for all the features and functions of the Bosch alarm panels to provide redundancy of alarms on Graphical Map Displays or on the Bosch alarm keypads. Privileges shall be determined by the Aegis2 system and allowed per workstation or computer. Each workstation shall be capable of being programmed to receive any or all the alarms through the Sielox networked security system.

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The Access Control system contractor shall be an authorized and current direct Sielox dealer as described in paragraph 1.2 A Contractor Qualifications. The contractor must provide proof of dealership with Sielox, Inc., as well as verification of prior experience with all specified equipment including but not limited to the Database Partitioning feature and the Aegis Graphics Display module. The contractor must have experience in programming system features. The installer must provide proof of training via a valid training certificate prior to any work being performed. Certificate must have been issued more than six (6) months and less than five (5) years prior to installation date. **Proof of dealership must be attached to any quotation.**

The General Contractor shall furnish and install all proximity card readers as per locations indicated on the plans or drawings. The card readers shall be connected to locking devices on the doors at the locations specified on the plans. To comply with ADA code requirements, all proximity card readers shall be installed within six (6) inches of the door they are controlling.

Each door with card reader shall have its own dedicated magnetic door contacts and shall connect to the Access Controller panel to reset the locking device at the door when opened.

The door locking devices (Electrified Hinge, Mortised Lock, Electrified Door Strike and Panic Bar) must be rated at 24-volt DC for continuous operation. Power supplies for these door locking devices shall be mounted in a panel located in the nearest Telecommunications room (MCR, TR1.1, etc.). The power supplies for these door locking devices shall have a dedicated 120V-20Amp branch circuit identified and labeled with panel and branch circuit numbers on the junction box mounted in the designated wall space in the MCR backboard. This branch circuit is separate from the Access Controller power supply panel branch circuit.

The Access Controller power supply panel shall have a dedicated 120V-20Amp branch circuit identified and labeled with panel and branch circuit numbers on the junction box mounted in the designated backboard space in the MCR/TR.

The Access Controller/Power Supply panels and Door Locking devices power supply panels shall be grounded to the Telecoms Ground Bus Bar using #12AWG solid copper wires with green insulation. The ground wire shall be run inside a ½- inch conduit.

All low voltage wirings running between panels and enclosures shall be in conduit.

The Access Controller panel and Power Supplies panels shall be provided with locks and four (4) sets of keys.

Cabling shall be a minimum of #18/2 AWG conductors that reflect less than a 10% voltage drop to any access control component.

The ACS contractor shall program system and restricted database feature. There will be no equipment substitutions that will be accepted for the Sielox ACS system. The

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ACS contractor shall provide fifty (50) initial cards. The Contractor shall be responsible for the initial programming of all requested time zones, access levels, card users and cards. The contractor shall be responsible to provide a minimum of four (8) hours users training on system use, programming, backing up critical database files and creating report templates at a date and time to be determined by the County Library.

The General Contractor or Door Hardware contractor shall furnish and install the **Fail Secure** door lock hardware and electrified door hinge with 4' cable spliced to the door lock. The other side of the hinge shall be wired by the ACS contractor. The purpose is to ensure that the door will stay latched in case of power failure. Panic hardware shall be provided on all Fail Secure doors for egress as specified on the plans. Any penetrations of doors after UL Listing shall require UL re-certification.

Properly bond and ground all shields on one side only.

Provide UPS for ALL system components and equipment, including servers, workstations, monitors, enrollment stations, and accessories, for up to four (4) hours continuous use.

B. Materials and Equipment

- a. Software – Sielox Pinnacle Software with Web Seat License – AC-PNWWST
- b. Proximity reader – Universal wire – 5 wire conductor. HID
- c. Proximity card – HID Prox II (Quantity = 50).
- d. Sielox 32-Bit Terminal Controller – AC-1700-NN2 Controller. One AC-1700-NN2 Controller required for every two doors. One AC-EN32 Cabinet required for every 8-doors. Prior to installation ACS contractor shall verify with the County whether to install a RS484 module per controller or a Sielox LAN module per Controller.
- e. Altronix AL600-ULX-FID (for Terminal Controllers) or Von Duprin Power Supply. One needed for every (4) Sielox Controllers, set at 12VDC.
- f. Altronix AL600-ULM FID (for Door Locking devices) or Von Duprin Power Supply. One needed for every (8) access control door locks requiring 24vdc less than 500ma each. If any low voltage electrified panic bars are to be installed contractor to verify voltage and amperage requirements and supply the power supply needed for those devices in addition to the other electric locking devices.
- g. APC Smart-UPS 1000VA - XL1000VA.
- h. 12V, 7AH batteries – two (2) for each panel as required for four (4) hours – Bosch D126.
- i. SS&W (Security Servers & Workstations Inc.) - WS200 Intel vPro System Raid Access Control Server Computer. Server shall be a Intel Core 2 Duo™ processor, 2.33 GHz, 1333MHz FSB, 4 MB L2 Cache, 1 GB RAM, 160GB Mirrored SATA Hot Swap Drives, DVD/RW, 1 RS232 Serial Port (up to 16), 4 USB Ports, USB Keyboard, USB Mouse, Dual Monitor Support. Installed Software: Windows 7 Pro, Paragon Disk Backup, SyAM Software System Client. Server shall have a minimum 3-year warranty parts and labor.

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- j. Von Duprin Panic Hardware Series #99 or #33 (as required) with electrified lever trim and Von Duprin electric power transfer unit #EPT-218 to be provided and installed by the General Contractor or Door Contractor.
- k. Sielox Aegis 2 Graphics Display System Application - AC-AST
- l. Sielox Aegis 2 Bosch Serial Alarm Driver – AC-SER
- m. Magnetic door contacts, flush-mounted and closed loop.- Sentrol 1078CT
- n. T-REX Request to Exit Motion Detectors – Bosch DS160
- o. Isolation Relays (For Elevator Control – if required).
- p. CSC Access Control Composite Cable #588343 (112117-04-1RL0) This composite cable shall have 4-component cables within its jacket. 1st cable shall be a **14-2C** for lock power, the 2nd cable shall be a **18-2C & a 18-4C** for card reader, 3rd cable shall be a **18-4C** for the door switch, and the final cable shall be a **18-4C** for REX/PIR. Power cables needed for special electrified panic bars shall be determined by the security contractor and included in the design and bid to make the system fully functional.
- q. All other cables and hardware required to make the system fully functional.
 - CSC 112000 (18/2 Shielded CMP cable)
 - CSC 112100 (18/4 Shielded CMP cable)

3.2.3 RESTROOM DOOR RELEASE

A. System Description and Installation Requirement

The intent of this system is to provide door releases from the Circulation Desk and the Children's Desk as required for the restroom doors. It requires that a line of sight be established between the restrooms and the Circulation and Children's desks. It may be incorporated with the Door Communications System in Section 3.2.4. It may also be integrated with the card access or intrusion alarm systems, Sections 3.2.1 and 3.2.2 respectively as required.

The ACS contractor (if included in their scope) shall provide submittals for the system to include design and hardware required for making the system operational prior to ordering and installation for approval and sign-off by ISD Project Manager. Otherwise, this shall be furnished and installed under the General Contractor's scope of work if indicated or stated on the ISD drawing Telecommunications notes.

The power supply panel for the Restroom Door Release shall be installed in the designated wall space in the MCR backboard and shall be provided with a dedicated 120V-20Amp circuit labeled with panel and branch circuit numbers on the junction box. The door locking devices must be rated at 24-VDC for continuous duty.

It is the responsibility of the Contractor to coordinate with the General Contractor, electrician, or door contractor for the installation schedule and to deliver a fully functional system.

B. Materials and Equipment

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- a. Power supply – 25VDC, 3Amp with battery backup
- b. Electrified Door Strike – Von Duprin
- c. Door button – Rutherford surface button
- d. Cable – 18-2C, CMP (twisted pair).

3.2.4 DOOR COMMUNICATIONS

A. System Description and Installation Requirement

The intent of this system is to provide communications for various doors throughout the facility. The doors requiring communications will be identified by the Library and ISD Project Managers. The staff entrance shall incorporate a two-way weather and tamper proof resistant video intercom station with a video camera. The video intercom station shall be connected to a video intercom base station located at an area designated by the Library and ISD Project Managers. Door communications systems may include multiple door stations and multiple base stations depending upon the application. Door communication system shall have ports for door release relays.

B. Materials and Equipment

- b. Central Exchange Unit – Aiphone AX-084C
- c. Door video intercom station – Aiphone AX-DVF
- d. Door intercom station surface mount box – Aiphone SBX-AXDVF
- e. Power Supplies (2 ea.) – Aiphone PS2420UL
- f. Door release relay – Aiphone RY-24L
- g. Plenum Cat 5e cable – General Cable 6131690

3.2.5 FIRE ALARM SYSTEM COMMUNICATOR

The General Contractor shall provide and install the Fire Alarm System for the building. The Fire Alarm Communicator (Dialer) to be provided by the General Contractor shall be the **Bosch D7412GV4 model with the latest version of RPS software**. No built-in communicator or dialer on the FACP will be accepted by the County. ISD requires non-proprietary Fire Alarm systems (i.e. NOTIFIER, HOCHIKI). LA County ISD and Sheriff Department will only accept the Bosch D7412GV4 panel that communicates with the Sheriff Central station. Below is a list of equipment, components and devices that should be provided and installed by the Fire Alarm contractor with the Fire Alarm Communicator:

- a. Fire Alarm Communicator (Dialer) – **Bosch D7412GV4 with the latest version of RPS software**
- b. Fire Alarm (Red) Enclosure – Bosch D8109 (w/ lock & key set)
- c. Fire (Red) Keypad – Bosch D1255RB
- d. Battery Charger Module– Bosch D8132
- e. Two(2)- Batteries – Bosch D126 (12Volts-7Ah)
- f. Dual Phone Line Switcher – Bosch D928
- g. Power Transformer – Bosch D1640

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- h. Transformer Enclosure – Bosch D8004
- i. Two(2) – Bosch D166 RJ31X Phone Jacks
- j. Two(2) – D161/D162 Phone Cords

A 120V-20Amp dedicated hard-wired circuit for the Fire Alarm Communicator Power Transformer shall be provided on the designated wall space in the MCR backboard labeled with panel and branch circuit numbers on the junction box.
This branch circuit is separate from the Fire Alarm Control System Panel branch circuit.

All low voltage wirings running between panels and enclosures shall be in conduit.

The Fire Alarm Communicator panel shall be grounded to the Telecoms Ground Bus Bar in the MCR with a #12AWG (solid) ground wire with green insulation. The ground wire should be run inside a ½ -inch conduit.

The following shall be the output from the Fire Alarm Control System Panel and shall be monitored by the Fire Alarm Communicator:

- 1) Alarm
- 2) Supervision
- 3) Trouble

The Fire Alarm Communicator shall be connected to the Fire Alarm Control System Panel with three (3) – 18/2 solid, red insulated, copper wire.

The Fire Keypad shall be connected to the Fire Alarm Communicator with an 18/4 shielded, solid, red insulated, copper wire.

The Fire Alarm Contractor shall provide “As-Built” drawings and “Points Lists” to ISD Project Manager prior to ISD FOS programming and connecting the system to the Sheriff Central station.

ISD FOS shall program the Fire Alarm Communicator to communicate with the Sheriff Central Station. Pre-Test of the Fire Alarm System shall be done by the Fire Alarm Contractor and ISD FOS prior to the Fire Marshall final inspection and tests.

The alarm contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

3.3 OVERHEAD PAGING SYSTEM

A. System Description and Installation Requirement

The intent of the system is to provide voice paging. The system will cover the entire library area. The overhead paging system shall be configured with three (3) zones plus All Call. The zones are: 1) Staff, 2) Public, and 3) Community Room. All Call shall be configured to have the paging announcements made simultaneously to all three (3) zones. The page will originate through the telephone system. Requirements shall include:

The paging equipment shall have 600 ohm balanced input for connection to the telephone system.

All speaker assemblies shall include a back box or speaker enclosure, grill and line matching transformer. The speakers shall include a built-in, screwdriver adjustable volume control and be equipped with a 70-volt line-matching transformer set on one and one quarter (1.25) watt tap.

The paging system will be accessible from the telephone instruments to allow paging through the overhead speakers. The general paging equipment for the building shall be installed in the MCR and connected to the Cisco Voice over IP (VoIP) telephone system using an FXO Trunk port from the voice gateway. The FXO circuit shall be placed on an RJ14 and terminated on the paging amplifier using an RJ14-to-Spade terminating cable.

The paging system amplifier and the zone paging modules shall be mounted on the designated plywood backboard space or as noted or as indicated on the plans. The paging contractor shall provide the cable and termination blocks to connect the paging module to the phone system.

The amplifier shall be sized appropriately to support all speakers.

The speaker cables shall be shielded twisted one (1) pair, 16 AWG, and plenum (CMP) rated. The speaker cables shall be installed horizontally through the ceiling area in a neat and orderly fashion and supported by Caddy J-Hook cable hangers at appropriate intervals. The speaker cables shall be positioned at least six (6) inches from telephone and data wires. The installation shall comply with ALL applicable National Electric Code, Building Safety, and Fire Codes. The Communications Contractor shall apply Section 3.5.1 items a thru d with regard to the low voltage cabling for the overhead paging system.

The Communications Contractor and its subcontractors shall be an authorized BOGEN manufacturer's distributor and a manufacturer's certified installer of the PA equipment. The contractor and subcontractors shall submit manufacturer's certification at the time of bid submittal.

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The Public Address (PA) System shall be a 70 V system if approved by the Authority Having Jurisdiction (AHJ). Contractor shall verify with the AHJ that plenum speaker cabling can be installed without conduit using the amplifier 70V PA amplifier output. Contractor shall use the AHJ approved 25V output if AHJ does not approve 70V amplifier output using plenum cabling without conduit.

The Communications Contractor shall install the PA system in accordance with all Federal, State, and local building codes including but not limited to the National Electric Code (NEC).

The Communications Contractor shall be responsible for verifying site conditions and for furnishing the proper type and quantity of material.

The Communications Contractor shall repair, replace and reinstall any material damaged during the course of this project.

The Communications Contractor shall furnish and install any and all materials, whether or not specified, to provide a complete and fully functional Public Address System as intended. This includes but not limited to: wall mounted speakers, ceiling mounted speakers, speaker support brackets, cabling, all mounting and supporting materials, amplifiers, transformers, adapters, and telephone interface units.

The Communications Contractor shall install all material required in accordance with the manufacturer's instructions and specifications.

The Communications Contractor shall furnish, install, and connect the cabling from the speakers to the AHJ approved output of the amplifier.

The Communications Contractor shall install all speakers as shown on the plans and shall verify all speaker locations.

The Communications Contractor shall verify speaker locations and ceiling types with the County project manager and the general contractor. Some speakers may be mounted above the ceiling tiles/covering in certain areas. The Communications Contractor shall furnish and install all appropriate materials to install the speakers in and above the various ceiling types. Contractor shall custom paint the speaker assemblies (enclosure, baffle, etc.) to match the color sample provided by the County.

The Communications Contractor shall furnish, install, and earthquake brace all speaker assemblies including speaker enclosures, speaker support brackets, cabling and associated materials.

The Communications Contractor shall cut the holes in the ceiling tiles where the speakers will be installed in the ceiling tiles and hard ceilings.

The Communications Contractor shall group a maximum of fifteen (15) speakers in any one cable run to the amplifier. The Communications Contractor shall furnish and install multiple cable runs for the speaker groups to the amplifier. Speakers shall be grouped by

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general location.

The Communications Contractor shall identify which speakers belong to which group on the cables and on the "As Built" drawings. The Communications Contractor shall also identify the cable runs on the "As built" drawings.

Cable runs shall be kept as short as possible.

The Communications Contractor shall install the cabling above the ceiling level. The Communications Contractor shall furnish and install cabling support and shall ensure that the cabling is supported independently from the supports used for the suspended ceiling and other systems above the ceiling.

The Communications Contractor shall furnish and install cabling support hardware for the cabling as per NEC.

Cabling shall not lie on the ceiling tiles or hard ceiling.

The Communications Contractor shall furnish and install the amplifier on the wall in the MCR room or equipment rack using appropriate rack mount hardware. The Communications Contractor shall refer to the drawings and consult with ISD Project Manager for the amplifier location in the MCR.

The Communications Contractor shall furnish and install the telephone interface equipment on the wall at the locations shown on the plans and securely fasten the telephone interface units to the wall. The Communications Contractor shall connect the zone outputs of the telephone interface unit to the respective zone speaker lines. The Communications Contractor shall furnish, install, and connect the PA amplifier to the telephone interface unit in accordance with the manufacturer's instructions for a multiple zone PA system.

The Communications Contractor shall furnish and install interface cabling between the telephone system and the PA system and terminate the cabling on the telephone system.

The Communications Contractor shall coordinate with the telephone system contractor to determine where to terminate the interface cabling on the telephone system and to obtain the telephone access code to the PA system.

The Communications Contractor shall connect the PA system to the telephone system at the location specified by the telephone contractor.

The Communications Contractor shall test the PA system through the telephone system with the access codes given by the telephone contractor.

The Communications Contractor shall balance the PA system when completed. The Communications Contractor shall adjust the audio levels of the PA system and audio sound levels of each speaker so that announcements can be heard distinctly and clearly above ambient noise levels during normal business activity in all areas.

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The PA system shall not have any interference and/or unwanted audio noise including but not limited to buzz or hum noises. The contractor shall trouble shoot and eliminate any interference, feedback, and/or unwanted audio noise in the PA system.

The Communications Contactor shall reset the wattage of the speakers if it is determined that the sound level cannot be heard distinctly and clearly above the ambient noise level and adjust the speaker sound level and PA system sound level so that the announcements can be heard distinctly and clearly above ambient noise level during normal business activity. The Communications Contractor shall reset the wattage and/or adjust the speaker volume control if it is determined that the speaker is too loud or too low in any area.

The Communications Contractor shall remove volume control knobs from the speakers so that the speaker volume control adjustment will be recessed.

The Communications Contractor shall furnish and install rack mounted UPS systems (UPS, batteries) and a rack mounted power distribution unit for the PA and telephone access equipment. UPS shall provide the equipment with a minimum of two (2) hours of back-up power to operate the equipment should there be an interruption of local power. The Communications Contractor shall connect the UPS units to AC power circuits. The Communications Contractor shall furnish and install hardware and brackets and earthquake brace UPS system and batteries to seismic 4 rating.

The Communications contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Materials and Equipment

- a. Amplifiers – Solid State, Bogen TPU or GS series sized to accommodate all speakers in the PA system and 20% minimum of additional output power.
- b. Telephone paging interface unit – Bogen PCM-2000 system including PCM-CPU, PCM-TIM and PCM-ZPM
- c. Power supplies – Bogen PCM - PS
- d. Speaker – 8”, 8 ohm, with 25/70 volt transformer and recessed volume control, Quam model C5/BU/W/VC.
- e. Speaker enclosure – Quam model ERD 8 series.
- f. Ceiling mounting bracket (suspended ceilings) – Quam model SSB-2.
- g. Ceiling mounting bracket (hard lid ceilings) – Quam model SSB-7.
- h. Speaker cable – shielded twisted pair AWG #16, plenum (CMP) rated. – WestPenn 25294B
- i. Uninterruptible Power Supply (UPS) – APC for 2 hours back-up power.
- j. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.4 VIDEO

3.4.1 CCTV

A. System Description and Installation Requirement

The communication contractor shall furnish and install a Closed Circuit Television (CCTV) system. The CCTV system shall consist of fixed cameras, Digital Video Recorder (DVR) and DVR storage, monitors, matrix video switcher, keyboards, power supplies, uninterruptible power supply (UPS), cabling and associated equipment. The CCTV system shall view various areas within and surrounding areas of the building. The video from the CCTV system shall be displayed on monitors located at the Circulation Desk in a split screen configuration. A keyboard at the Circulation Desk will allow the users to select any camera full screen, the split screen image of all cameras, the sequence of all cameras, and any other configuration requested by the County. The matrix switcher, DVR, DVR storage, DVR monitor, DVR keyboard, camera power supplies, and UPS shall be located and rack mounted in the MCR room. The DVR shall be connected to the Library LAN/WAN computer network so that the DVR video can be viewed live and recordings played back from the Library Headquarters facility in Downey, Ca. using the existing client software. The existing client software is the American Dynamics Intellex Network Client.

The Communications Contractor shall furnish and install a complete and fully functional CCTV system. The Communications Contractor shall furnish and install any and all materials whether or not specified to provide a complete and fully functional CCTV system. The Communications Contractor shall configure all settings and programming of the equipment including but not limited to camera titles, presets, recording schedules, and frame rates. The Communications Contractor shall coordinate with the County Project Manager in the system settings and configuration.

The Communications Contractor shall meet or exceed all Federal, State, and local building codes including but not limited to the National Electric Code and Fire Codes. The Communications Contractor shall install all materials in accordance with manufacturer's instructions and specifications. The Communications Contractor shall install all materials in accordance with professional standards including EIA/TIA standards.

The Communications Contractor and its subcontractors shall be an authorized manufacturer dealer/reseller and manufacturer's certified installer of the CCTV system equipment. The Contractor and subcontractors shall submit manufacturer's certification documentation at the time of bid submittal.

Cabling – The Communications Contractor shall furnish and install all cabling for the CCTV system. The Communications Contractor shall furnish and install all cabling supports as per NEC and EIA/TIA requirements. Cable support shall be independent from ceiling and other equipment supports.

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Cabling installed in the interior of the building shall be plenum rated. Any cabling installed exterior to the building shall be installed in and protected with weatherproof and watertight conduit and enclosures.

The Communications Contractor shall furnish and install one each coax cable from each camera to the CCTV system in the MCR room. The Communications Contractor shall furnish and install one each coax cable from each monitor to the CCTV system in the MCR. The Communications Contractor shall furnish and install three piece crimp type BNC connectors on the coax cables.

The Communications Contractor shall install one each low voltage cable from each camera to the camera power supply. Camera power supply shall be located in the MCR room. The Communications Contractor shall install control cabling from each PTZ camera to the video matrix switcher and controller system.

Cameras - The camera locations are shown on the plans. The Communications Contractor shall verify camera locations at the site. The Communications Contractor shall furnish and install cameras and mounts. The Communications Contractor shall adjust the camera lenses and settings to obtain the required views. The Communications Contractor shall coordinate with the County project manager and end user to determine camera view. The Communications Contractor shall readjust the camera lenses and settings as necessary to obtain alternate views as requested by LA County. The Communications Contractor shall connect the cameras to the video inputs of the DVR. Pan/Tilt/Zoom dome camera control protocol shall be SensorNet. Camera control cabling shall be individual home runs from each of the PTZ dome cameras to the camera controller hardware.

Camera power supplies – The Communications Contractor shall furnish and install the camera power supply in MCR room. The Communications Contractor shall mount and securely fasten the power supply to the wall. The Communications Contractor shall connect the cameras to the camera power supplies. The Communications Contractor shall connect the camera power supplies to the UPS unit.

Digital Video Recorder (DVR) – The Communications Contractor shall furnish and install a DVR and DVR storage in the MCR room. The DVR shall be networked into the County LAN/WAN system. The contractor shall furnish and install all core and viewing software on computers as identified by the ISD Project Manager and Library staff. The cameras shall be viewed and controlled over the network from remote PCs. The video shall be recorded and viewed live at 2CIF resolution, with a minimum of 7.5 images per second for each camera. The system shall use Active Content Compression Technology. The video storage shall be for 30 days on the internal storage of the DVR and extended storage modules as necessary to provide the 30 day storage requirement. The video shall be recorded continuously during normal business hours and on motion after normal business hours. Should an event be recorded from motion detection, the recording shall have a minimum of five minutes recording before the motion occurrence and five minutes of recording after the motion occurrence. The DVR shall send an alert message via email and text page to

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staff as designated by the ISD Telecommunications Engineer and Library staff. The Communications Contractor shall connect the video outputs of the cameras to the camera inputs of the DVR. The Communications Contractor shall connect the DVR to the Library LAN/WAN network. The Communications Contractor shall furnish and install cabling to connect to the Library LAN/WAN network. Contractor shall coordinate with the County network engineer to interface and connect the DVR to the Library LAN/WAN network. The Communications Contractor shall ensure that all DVR functions are accessible and operable remotely from the Library Headquarters facility in Downey, Ca. The Communications Contractor shall connect the DVR to the UPS unit. The Communications Contractor shall program and configure all settings and parameters of the DVR. Contractor shall configure the network client software at the remote location to access the DVR via the LAN/WAN network. The Communications Contractor shall coordinate with the County Project Manager and end user to determine configuration parameters.

The Communications Contractor shall configure the video monitor output of the DVR to display a 4x4 split screen display of all cameras. The Communications Contractor shall furnish, install, and connect cabling from the video monitor output of the DVR to a camera input of the matrix switcher. The Communications Contractor shall connect the looping camera outputs of the DVR to the camera inputs of the matrix video switcher. The Communications Contractor shall have the system certified in writing by the DVR manufacturer that the system has been installed correctly and is fully functional. The Communications Contractor shall provide five copies of the certification to the ISD Project Manager. Project Manager

Matrix video switcher – The Communications Contractor shall furnish and install a matrix video switcher in the MCR room. The Communications Contractor shall connect the camera looping video outputs of the DVR to the camera inputs of the matrix switcher. The Communications Contractor shall connect the looping outputs of the matrix switcher to the camera inputs of the multiplexer. The Communications Contractor shall connect the monitor output of the multiplexer to a camera input of the matrix switcher. The Communications Contractor shall connect the monitor outputs of the matrix switcher to the video inputs of monitors located at the circulation desks. The Communications Contractor shall furnish and install a matrix switcher keyboard controller at each circulation desk and in the video equipment rack.

The Communications Contractor shall furnish and install a video equipment rack cabinet to house the DVR, DVR storage, matrix video switcher, and associated equipment. The video cabinet shall have front and rear rack rails for mounting 19” rack mount equipment. The DVR shall be supported at the front and rear of the unit. The video cabinet shall have locking front and rear doors, vertical power strip with circuit breaker and surge protection, bottom panel, and vented top panel. The cabinet shall have a pull out keyboard and mouse shelf for the DVR and a second pull out shelf for the camera controller. The cabinet shall have appropriate air circulation to properly ventilate and cool the equipment housed within the cabinet. The cabinet shall have 77” of vertical rack space. The cabinet shall be properly grounded, securely anchored to the floor, and seismically secured. Four (4) sets of cabinet keys will be provided to the County.

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Monitors – The Communications Contractor shall furnish and install a desktop mounted 17” LCD monitor at each of the circulation desks as shown on the plans. The Communications Contractor shall furnish and install a rack mounted VGA monitor in the MCR room. The Communications Contractor shall connect the VGA monitor to the DVR monitor output. The Communications Contractor shall connect the monitor outputs of the matrix switcher to the monitors at the circulation desks. The Communications Contractor shall connect the DVR, DVR storage, and matrix switcher monitors to the UPS unit.

The Communications Contractor shall install the camera power supplies in the telephone room nearest the camera location. If the distance between the camera and telephone room exceeds the manufacturer’s recommendation for low voltage cable distance for the gauge of wire specified, then the Communications Contractor shall furnish and install the appropriate gauge of low voltage cable as recommended by the camera manufacturer to accommodate for the cable distance.

The Communications Contractor shall furnish and install the UPS unit in the MCR room. The UPS shall be sized to provide a minimum of two hours of full load run time in the event of power failure. The Communications Contractor shall connect the camera power supply, DVR, DVR storage, matrix switcher, keyboards, and VGA monitor to the UPS. The UPS unit shall be installed in the rack using the four post mounting method.

The Communications Contractor shall configure all settings of the CCTV system including all parameters of the cameras, DVR, DVR storage, video matrix switcher, and associated hardware and software. The Communications Contractor shall coordinate with the general contractor and County project manager for the installation schedule and to deliver a fully functional system. Also the Communications Contractor shall coordinate with the appropriate County IT staff to properly configure the DVR and network for CCTV system use over the County LAN/WAN network. The Communications Contractor shall also coordinate with the ISD and Library Project Managers to define the required views for each camera.

The installation shall comply with ALL applicable National Electric Codes, Building, and Fire Codes. The Communications Contractor shall apply section 3.5.1 items a through d. with regard to the low voltage cabling for the CCTV system.

The Communications Contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Material and Equipment

- a. Fixed Color Camera – Bosch VDN-498 series with appropriate varifocal or fixed auto iris lens as required to provide the required camera view.
- b. Pan/Tilt/Zoom color day/night dome camera – American Dynamics Ultradome Ultra 8 series with 35 X zoom.

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- c. Power Supply (Fixed Cameras) – Pelco MCS16-10S (for multiple cameras), Pelco TF2000 (for individual cameras).
- d. Power Supply (PTZ dome cameras) – Pelco WCS 1 - 4
- e. DVR – American Dynamics Intellex Ultra ADD600ULP150
- f. Extended DVR storage – American Dynamics RAID storage system
- g. Dell quiet key PC keyboard.
- h. Viewing software – American Dynamics Network Client ADDSNCVMKUL
- i. Keyboard Controller – American Dynamics line of keyboard controllers compatible with American Dynamics line of matrix switchers.
- j. Matrix Switcher – American Dynamics line of matrix switchers and accessories.
- k. LCD color monitor – American Dynamics ADMNM17LCDP
- l. LCD monitor rack mount kit – American Dynamics ADMNRKT17
- m. Multiplexer – Ganz DR16HD
- n. Coax cable – WestPenn 25815
- o. BNC connectors – WestPenn CN-BM74-32
- p. PTZ dome low voltage cable - WestPenn 25227B
- q. Fixed camera low voltage cable – WestPenn 25225B
- r. PTZ dome control cable – Belden 88442
- s. Matrix Switcher Keyboard cable – Belden 88102
- t. Cable - General Cable Gen *Speed* 6000 Cat 6 CMP (Plenum)
- u. Miscellaneous Connectors – as required. All faceplates shall be electrical ivory.
- v. Video cabinet – Middle Atlantic WRK series with accessories as required..
- w. Pan/Tilt/Zoom dome camera Housing (outdoor) – American Dynamics ADSDUHOC with associated American Dynamics mount required to install the camera and housing.
- x. Pan/Tilt/Zoom dome camera Housing (indoor) – American Dynamics line of indoor housings and mounts for use with Ultra domes.
- y. Fixed camera mounts – Entire line of Panasonic mounts and adapters for use with the WV-CW504 series cameras.
- z. Uninterruptible Power Supply (UPS) - APC
- aa. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.4.2 MATV (Off Air Reception)

A. System Description and Installation Requirement

The intent of the system is to provide Digital TV/FM signals to the building via a roof TV antenna receiving off air TV transmission signals. The system shall consist of a roof TV antenna with mount, external coaxial cable, internal coaxial cable, a distribution amplifier, taps and _____ (___) drops as indicated on the plans. The communications vendor shall use pads as necessary to prevent overload of the signal.

The MATV system shall be grounded in accordance to the National Electric Code. The installation shall comply with All National Electric Codes, Building, and Fire Codes.

The TV antenna shall be mounted on a heavy duty TV antenna mast and securely mounted to the building. A one inch (1") conduit with weather head shall be installed next to the TV antenna. The conduit shall run from the TV antenna location to the Main Communications Room.

The Communications Contractor shall furnish and install the external coaxial cabling from the TV antenna to the MCR in the conduit and connect to the distribution amplifier in the MCR. The Communications Contractor shall furnish and install internal coaxial cabling from the distribution amplifier and taps to the TV outlets. Each TV outlet shall have an individual coaxial cable home run to the tap. The contractor shall furnish, install, and connect RG6 coax cabling from the output of the distribution amplifier to the input of the tap. The MATV system shall have a minimum of eight (8) output ports to distribute the MATV signals to the TVs.

The Communications Contractor shall balance, amplify or pad the TV signals and ensure that each TV has a minimum of 5dBmV at the TV input for all channels. The Communications Contractor shall ensure that all TVs shall display a clear picture for all channels. The Communications Contractor shall furnish and install all other materials not listed to deliver a fully functional MATV system. The Communications Contractor shall apply section 3.5.1 items a through d. with regards to the low voltage cabling for the MATV system.

- B. Materials and Equipment
 - a. Distribution Amplifier – Pico Macom, INC. TA-52 (if necessary).
 - b. TV antenna - Winegard
 - c. External coaxial cable – WestPenn AQC841 w/Moisture Blocking
 - d. Internal coaxial cable - WestPenn 25841
 - e. F Connectors – WestPenn CN-FS6PL2 for 25841, WestPenn CN-FSNS-6 for AQC841.
 - f. TV Wall plate – Panduit CFPL3BY
 - g. F connector module – Panduit CMFSRIWY.
 - h. Cat 6 Module (CJ688TGOR)
 - i. Blank Module – Panduit CMBWH-Y.
 - j. Tap – Blonder Tongue DGT-8,11dB.
 - k. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.4.3 SATV (Satellite TV Reception)

A. System Description and Installation Requirement

The intent of the system is to provide DSS satellite TV programming to the building via a roof top satellite dish. The system shall be capable of receiving DirecTV programming including local TV channels. The system shall consist of a roof top satellite dish antenna with integrated LNBS and dish mount, external coaxial cable,

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internal coaxial cable, multi-switch, satellite TV programming receivers, line amplifiers, _____ (___) drops as indicated on the plans.

The Communications Contractor shall coordinate with library staff to determine which service provider is required and programming package to select. The Communications Contractor shall coordinate with the library and service provider to open an account with the service provider and activate the SATV system when the account is opened with the service provider.

The SATV system shall be grounded in accordance to the National Electric Code. The installation shall comply with All National Electric Codes, Building, and Fire Codes. The Communications Contractor shall apply section 3.5.1 items a through d. with regards to the low voltage cabling for the SATV system.

The satellite dish shall be securely mounted to the building and properly aligned to receive the DSS signals. A one and one quarter inch (1.25”) conduit with weather head shall be installed next to the satellite dish. The conduit shall run from the satellite dish location to the Main Communications Room.

The Communications Contractor shall furnish and install the external coaxial cabling (4 coax) from the satellite dish to the MCR in the conduit and connect to the multi-switch in the MCR. The Communications Contractor shall furnish and install internal coaxial cabling from the multi-switch to the TV outlets. Each TV outlet shall have an individual coaxial cable home run to the multi-switch. The SATV system shall have a minimum of eight (8) output ports to distribute the SATV signals to the TVs. The Communications Contractor shall furnish and install one (1) satellite receiver per TV in the SATV system. The satellite receiver shall be installed below the TV with a mounting bracket.

The Communications Contractor shall amplify or pad the SATV signals and ensure that each TV shall display a clear picture for all selected programming. The Communications Contractor shall furnish and install all other materials not listed to deliver a fully functional SATV system.

The Communications Contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

- B. Materials and Equipment
 - a. DSS Dish – DirecTV AU9-SL5-SWM
 - b. External coaxial cable – WestPenn AQC841
 - c. Internal coaxial cable - WestPenn 25841
 - d. F Connectors – WestPenn CN-FS6PL2 (25841), CN-FSNS-6(AQC841)
 - e. TV Wall plate – Panduit CFPL3BY
 - f. F connector module – Panduit CMFSRIWY.
 - g. Cat 6 Module (CJ688TGOR)
 - h. Blank Module – Panduit CMBWH-Y
 - i. Multi-switch – Spaun, Satellite USA multi-switch
 - j. Amplifier – Spaun, Satellite USA amplifiers

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- k. Satellite TV splitter – Spaun, Satellite USA splitters
- l. Satellite accessories – Spaun, Satellite USA
- m. Satellite receiver – DirecTV H24

3.4.4 CATV (Cable Access)

A. System Description and Installation Requirement

The intent of the system is to provide CATV programming including local TV channels to the building. The system shall consist of a local cable TV company drop, internal coaxial cable, a distribution amplifier, Taps and _____ () drops as indicated on the plans. The communications vendor shall use pads as necessary to prevent overload of the signal.

The CATV system shall be grounded in accordance to the National Electric Code. The installation shall comply with All National Electric Codes, Building, and Fire Codes. The Communications Contractor shall apply section 3.5.1 items a through d. with regard to the low voltage cabling for the CATV system.

The Communications Contractor shall coordinate with the local cable company to bring a CATV drop to the building and terminate in the MCR room. A three inch (3”) conduit shall be installed underground from the MCR room to the building property line closest to the local cable company’s feed line. The conduit shall stub up into the MCR of the building. The conduit shall be capped at the property line to prevent water and debris from entering into the conduit. The Communications Contractor shall coordinate with the local cable company to determine the requirements to interface the conduit to the cable company’s feed. The Communications Contractor shall furnish and install the materials to interface the cable company’s feed with the conduit. The Communications Contractor shall verify with the cable company the signal level that the cable company is providing and ensure that the signal level is appropriate to deliver the proper signal level to the displays and/or receiver units. The Communications contractor shall furnish and install a distribution amplifier as needed.

The Communications Contractor shall furnish and install a CATV distribution amplifier in the MCR room. The Communications Contractor shall furnish and install internal coaxial cabling from the distribution amplifier and splitters to the TV outlets. Each TV outlet shall have an individual coaxial cable home run to the tap and a Category 6 cable run to the MCR patch panel. The CATV system shall have a minimum of eight (8) output ports to distribute the CATV signals to the TVs. Contractor shall furnish and install a 75 ohm terminator on all unused ports on the tap. Contractor shall furnish and install RG6 cabling and connectors between the output of the distribution amplifier to the input of the tap.

The Communications Contractor shall balance, amplify or pad the TV signals and ensure that each TV have a minimum of 5dBmv of CATV signal level at the TV input for all channels. The Communications Contractor shall ensure that all TVs shall display a clear picture and audio for all channels. The Communications Contractor

shall furnish and install all other materials not listed below to deliver a fully functional CATV system.

- B. Materials and Equipment
 - a. Distribution Amplifier – Pico Macom, INC. PIDA-1000, wall-mounted (if necessary).
 - b. Attenuators/Equalizers – Pico Macom PIDA-AT series, PIDA – EQ series
 - c. Internal coaxial cable - WestPenn 25841
 - d. F Connectors – WestPenn CN-FS6PL2
 - e. TV Wall plate – Panduit CFPL3BY
 - f. F connector module – Panduit CMFSRIWY.
 - g. Taps – Blonder Tongue DGT-8, 11dB
 - h. Cat 6 Module (CJ688TGOR)
 - i. Blank Module – Panduit CMBWH-Y

3.4.5 VIDEO DISPLAYS

A. System Description and Installation Requirement

The intent of the video displays is to display the selected video system (MATV, SATV, CATV, PC content or streaming media content) programming and DVD programming on wall-mounted televisions and/or projectors. The video display unit shall consist of a television and television wall-mount bracket or wall mounted projector with short throw lens. The video display unit shall also include a satellite TV receiver, CATV receiver, Blu-ray player, or streaming media player box as required. The display unit shall be securely mounted and fastened to the wall-mount bracket. The satellite receiver, CATV receiver, Blu-ray player, or streaming media player box shall be installed on a bracket below the display unit.

The video displays shall be installed wall-mounted in the Study rooms, and Teen (Young Adult) Area. The Communications contractor shall furnish and install wall mounted surge protectors behind the displays. The Study room display units shall be wall mounted projectors with short throw lens. The Study rooms shall have both VGA with audio and HDMI input wall plates connected to the display unit. The Study rooms shall also have a wall mount control unit to control equipment on/off functions, audio/video source selection, volume control, and receiver/media player box functions including but not limited to play, stop, fast forward, reverse, channel selection, and content selection. The wall of the study room shall be painted with projection screen wall paint and white board wall paint. The display unit in the Teen area shall be a 55” (minimum) backlit, 1080p, 120 Hz, LED TV. The Teen area display unit shall also have a VGA w/audio and HDMI input wall plates connected to the display unit. The Teen area display unit shall also have a wall mounted control unit to control equipment on/off functions, audio/video source selection and volume control. The walls shall be reinforced to provide additional wall support for the video display units. The video display units shall be mounted at a height above the finished floor meeting ADA height requirements or as indicated in the ISD drawing. The Communications Contractor shall verify and ensure that the TV and TV wall mount

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bracket are compatible with each other. The display unit in the Story Time area shall be on a floor cart with casters and include an Apple TV player and Apple Air Play.

TV outlets shall be installed in the Study Rooms, Teen (Young Adult) Area, Staff Break room/Lounge and Story Time Area. TV outlets shall also be installed at the height and as per locations shown in the ISD drawing. TV outlets shall be connected to the selected video system (MATV, SATV, CATV, or streaming media player). The TV outlets shall be installed a flush-mount single gang box with a TV outlet faceplate. A ¾" inch conduit shall be installed from the TV outlet box and stubbed above the accessible ceiling area. The TV outlets shall be installed behind the video display units. The TV outlet in the Story Time Area shall be installed at +18" above finished floor.

A double duplex 120VAC electrical outlet shall be installed next to each TV outlet. The electrical outlet shall be flush mounted in the wall.

B. Materials and Equipment

- a. Study room displays – Epson Brightlink projector with wall mount 485Wi
- b. Study room projection screen wall paint – Screen Goo
- c. Study room white board wall paint – Idea Paint
- d. Teen area display TV – 55" minimum, 1080p, 120Hz, back lit LED TV. Samsung 8000 series, Sharp Aquos with Quattron Series
- e. Teen area TV wall mount - Peerless ST670
- f. Wall mounted control unit – Crestron MPC-M10
- g. VGA w/Audio and HDMI wall plates – Crestron, Extron
- h. VGA w/Audio, HDMI, RS232 cables – Crestron, Extron, C2G
- i. TV Wall plate – Panduit CFPL3BY
- j. F connector module – Panduit CMFSRIWY
- k. Cat 6 Module (CJ688TGOR)
- l. Blank Module – Panduit CMBWH-Y
- m. Story time display – 55" minimum, 1080p, 120Hz, back lit LED TV. Samsung 8000 series, Sharp Aquos with Quattron Series
- n. Story time display TV cart w/metal shelf – Peerless SR560M
- o. Streaming media player – Apple TV and Apple Air
- p. Blu-ray player – Sony, Samsung
- q. Surge suppressor – Tripplite AV2FP
- r. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.4.6 VIDEO CONFERENCING SYSTEM

A. System Description and Installation Requirement

The intent of the system is to provide a videoconferencing system in the Meeting room. The video conferencing system shall have audio and video communication with data collaboration software and hardware. The videoconferencing system shall include a codec, , camera, microphones, built-in AES encryption, and data

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collaboration hardware and software. The videoconferencing audio and video signals shall be integrated with the Meeting room audio/video systems. The video/PC content display shall be projected on to the meeting room screen. The audio shall be distributed via the Meeting room sound system. The videoconferencing control system shall be integrated with the meeting room touch panel control system and have all the same functions as the manufacturer's touch panel control unit.

The video conferencing system shall be capable of communication over an IP network. The system shall be capable of communications from 64 kbps to 2Mbps speeds. The video conferencing system shall be SIP, H.264, H.323, and H.320 compliant. The microphones shall be integrated with the meeting room sound system. The codec and IP connectivity shall be installed in the audio/video control room. One data jack with RJ 45 jack shall be installed in the audio/video control room for video conferencing system use. The data jack shall be labeled in accordance with standard data jack procedures.

The videoconferencing system shall be integrated with the Meeting Room audio/video and control system. The Meeting room sound system shall be used for the audio input and outputs of the codec. The Communications Contractor shall integrate the codec audio inputs and outputs with the Meeting Room audio processor. The Meeting Room projector shall display the monitor output of the codec. The videoconferencing system shall include two (2) pan/tilt/zoom HD cameras. One camera shall be mounted on the wall below the projection screen when fully lowered. The second camera shall be located to view the presenter at the front of the meeting room. Communications contractor shall confirm the location of the cameras with the County Project Manager. The Communications Contractor shall connect the PC and VCR/DVD outputs of the audio/video system to the PC and VCR/DVD inputs of the codec. The Communications Contractor shall program and configure all settings and parameters of the codec. The Communications Contractor shall furnish and install remote camera kits to transmit the video, control, and power signals of the cameras over Cat6 cabling to the codec. . The Communications Contractor shall work with County network engineers to incorporate the videoconference traffic into the County LAN/WAN data network. The Communications Contractor shall also work with the ISD videoconference section to register the codec with the County-wide videoconference infrastructure. The Communications Contractor shall furnish and install all other materials not listed or specified to deliver a fully functional videoconferencing system.

The Communications Contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Materials and Equipment

- a. Videoconferencing system – Cisco C40 integrator system with Precision HD 1080p cameras and Natural Presenter option.
- b. Manufacturers Support package – Cisco Support services for 1 year. 24x7x365 telephone support and NBD parts replacement

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- c. Codec PC input cable – Cisco DVI to VGA cable with audio
- d. Remote camera control unit – Vaddio Onelink for Cisco Precision HD cameras
- e. Cat 6 plenum cabling – General cable 6131278
- f. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.4.7 Digital Signage

A. System Description and Installation Requirement

The intent of the Digital Signage systems is to provide and display Library information to the public on large screen displays. The display(s) will be located near the main entrance of the Library. The Digital signage systems shall be either wall mounted or floor mounted. The wall mounted Digital signage system shall be installed in a recessed wall opening so that the face of the display is flush with the wall. The wall opening shall be constructed so that it has a one inch gap around the perimeter of the display. The wall mounted display shall be mounted on an articulating wall mount bracket. A data jack, surge suppressor, and AC outlet shall be installed behind the display in the recessed opening. The digital signage media player will be wall mounted behind the display. The floor standing Digital signage system shall include the displays in a portrait configuration, equipment housing and base. AC power, surge suppressor, and a data jack shall be installed in the interior of the base of the unit and not visible from the exterior of the unit. The floor standing unit shall be securely anchored to the floor. The digital signage media player shall be installed in the interior of the floor standing unit. County will provide the digital signage media players for both the wall and floor standing units. The Communications contractor shall install the digital signage media players.

B. Materials and Equipment

- a. Wall mounted Display – Samsung 55” monitor UE55C
- b. Articulating wall mount bracket – Chief manufacturing TS318TU
- c. Portrait interface bracket – Chief TA410
- d. Surge suppressor – Tripplite AV2FP
- e. Floor mounted display with dual 55” displays – Viewsonic EP 5555T
- f. Digital signage media player - County provided

3.5 CABLING SYSTEM

3.5.1. Station Cable (Voice/Data)

- a. The Communications Contractor shall be responsible for obtaining a low voltage installation permit from the appropriate authority prior to start of installation.

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- b. The Communications Contractor shall be responsible for consulting with the building inspector to determine whether there are special local requirements for strapping the cables in the attic area.
- c. The Communications Contractor shall be responsible for coordinating with the building's General Contractor to determine the cable routings, schedules for cable placement and ceiling inspection.
- d. The Communications Contractor shall provide installation of the Caddy J-Hook system cable hangers and sleeves that will support the horizontal cables in the attic area per all applicable local building code(s).
- e. The Communications Contractor shall furnish and install voice/data locations, voice only locations, and data only locations per approved floor plans.
- f. The Communications Contractor shall furnish and install whips, wall plate adapters and floor plate adapters as shown on the plans.
- g. All voice/data outlets shall be furnished and installed complete with four (4) data jacks (Cat 6, RJ45) terminated with four (4) Cat 6 plenum rated cables unless otherwise noted on the plans. Please refer further to Section 3.5.2 b.
- h. All data cables shall be General Cable **GenSPEED 6000 Enhanced Category 6** plenum rated 23 AWG, 4-pair, blue jacket cables. No substitutions will be allowed without prior written approval from the ISD Project Manager. All cables shall be installed from the station jack directly to the appropriate Cat 6 patch panels in the MCR. All cable pairs or modular jacks shall be wired to ANSI/TIA/EIA568-B using **T568-A wiring scheme** at both ends. All cables shall be tested to minimum Cat 6 standards.
- i. The jack housings and faceplates shall have four (4) positions for jacks. Blank covers shall be installed in vacant jack positions. Jack housings and faceplates shall be compatible with the Panduit Mini-Com Jacks. The type and color is to be determined by the installed location. Some will be flush or non-flush. Modular furniture faceplates shall be color-coordinated with the color of the furniture base plate. The Communications Contractor shall furnish and install the proper jack housings and faceplates. The Communications Contractor shall determine the type and color of faceplate prior to the scheduled installation and must be approved by ISD Project Manager and Library Project Manager prior to use.
- j. Floor monuments shall be flush mounted and fully adjustable with one (1) inch conduit knockouts, unless otherwise noted on the plan. Depending on the amount of gang boxes required on the floor monument, Hubbell Floor Boxes B243641, B423341 or B433361 shall be used as required. Cover plate shall be Hubbell S3825. If applicable, corresponding carpet flanges shall be SB3083, SB3084 or SB3085. Any deviation must have a written approval from the ISD Project Manager and Library Staff prior to installation.

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- k. Floor monument mounting plates shall be Panduit CF-1064EI.
- l. The Communications Contractor shall furnish and install patch panels and wire managers or organizers. Separate patch panels shall be provided for the PUBLIC and STAFF jacks.. The patch panels shall be Panduit Mini-Com 48 port all metal modular, part number **CP48BLY**. The horizontal wire organizers shall be Panduit **WMPH2E** and **WMPSE** as required and as shown on the Equipment Rack Layout furnished by the ISD Project Manager. Furnish one (1) horizontal wire organizer per patch panel plus one (1) additional wire organizer at the top of each row of patch panels. Be sure to include the Panduit Mini-Com Jacks on the patch panel. Vertical wire managers shall also be furnished and installed as required using Panduit **WMPV45E** or **WMPVHC45E** as specified in the Equipment Rack Elevation layout.
- m. All RJ45 modular data jacks shall be wired according to ANSI/TIA/EIA 568-B using the **T568-A wiring scheme..**
- n. All jacks shall be modular Panduit Mini-Com Jacks. All jacks (Cat 6, RJ45) shall be Panduit Mini-Com Jacks part number **CJ688TGOR (Orange) or CJ688TGBU (Blue)** as shown on the plan. No substitutions will be approved.
- o. The PUBLIC areas shall use Blue jacks. The STAFF areas shall use Orange jacks.
- p. All voice/data jacks and patch panels shall be labeled according to **Los Angeles County Standard 902**. Labels are to be typed or printed with a labeling device and permanently affixed. No hand written lettering is acceptable. The labels shall be printed on white tape with black lettering for jacks. Patch panels shall be labeled both front and back. The patch panel labels shall be black tape with white lettering, four (4) labels per strip. Consult with the ISD Project Manager/Project Manager if further clarification is needed.

Workstation Jack Labeling:

Example: DXYYYYZZZ (Data jack) - D1001MCR, D1002MCR...
VYYYYZZZ (Voice jack) - V1001MCR, V1002MCR...

D stands for data, V stands for Voice, X stands for floor level, YYY is jack number starting from 001, and ZZZ is the serving patch panel or MCR/TR room. Alpha (A&B) lettering of data jacks is not allowed. Data designation "D" and MCR shall not be required for the Patch Panel labeling.

Example: XYYY - 1001, 1002...

The MCR/TR end of the voice cables shall be terminated on the 66 blocks mounted in the designated location in the MCR/TR backboard.

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66 block label starts from 1001, 1002, and so on.

- q. All wire and cable runs in the ceiling area shall be supported with Caddy J-Hook system ceiling hangers, supplied and installed by the Communications Contractor. Cables must be supported at a space interval that is allowable by code. At no point shall cable(s) rest on acoustic ceiling grids, panels, lighting support wires, electrical conduit and HVAC pipes or ducts.
- r. Cable shall be installed in continuous lengths (no splices allowed) from the station jacks to the MCR patch panel ports, using the **shortest route possible**, and shall be tight bundled in groups of no more than six-around-one, and combined bundles of six-around-one of not greater than three bundles or a total of 21 cables.



- s. The data cables shall be bundled with a Velcro type of tie, such as Panduit HLS, HLM, HLC or equivalent. Do not use plastic ties on data cables.
- t. Furnish and install flexible tubing (Seal Tite) to conceal wire runs into modular furniture or where needed to secure multiple exposed cables.
- u. It shall be the responsibility of the Communications Contractor to determine and furnish the quantity of voice/data cable needed.
- v. The Communications Contractor shall furnish and install three (3)-Category 6 cables with three (3)-RJ45 jacks; two (2) of the RJ45 jacks shall be installed adjacent to the Fire Alarm Communicator Panel and one (1) adjacent to the Intrusion Alarm Panel. The other end of the alarm cable should terminate on the 66 blocks mounted (not on the MCR patch panel) adjacent to the Telco panel in the MCR backboard. This will be used to connect the telephone lines to the alarm systems. The telephone lines to be used will be ordered by County Library Staff. The Communications Contractor shall cross-connect the telephone lines from the Telco panel binding post to the 66 block. The alarm contractor will connect the telephone lines to the alarm systems.

3.5.2 Workstation Outlets

- a. Unless otherwise noted on the plans, each outlet location installed on the wall, on the modular furniture system, or on the floor, shall be equipped with four (4) Category 6 RJ45 type data modular jacks, color-coded as follows: **Orange (OR) jacks** for the STAFF locations and **Blue (BL) jacks** for the PUBLIC locations as shown on the plan.

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- b. Each outlet location shall be provided with four (4) Cat 6 cables unless otherwise - shown on the plan. The following are the data drops required for each location:

Staff Areas (Orange Jacks):

1. CLM/Librarian – 2/location
2. Staff Workroom – 2 /location
3. Delivery Vestibule – 2 and 1 Wall Phone
4. Circulation Desk – 2/location
5. Customer Service Desk – 2/location
6. Reference Desk – 2/location
7. Information Desk -2/location
8. POD – 2/location
9. Self-Checks – 2/location
10. AV Closet – 2 and 1 with TV Outlet
11. All TV Outlets – 1
12. Wireless Access Points – 2/location
13. Storage – 2/location
14. LAPTOP Vending – 2/location
15. Video Projectors – 1/location
16. Staff Lounge/Break room – 1 with TV Outlet and 1 Wall Phone
17. MCR – 1 Wall Phone
18. Copier/FAX – 2/location

Public Areas (Blue Jacks):

1. Public (Adult, Teen, Children) Computers – 2/location
2. Print Release Station (PRS) – 4/location
3. OPACS – 2/location
4. Copier/Kiosk – 4/location
5. Friends of the Library – 2
6. Digital Signage – 2/location
7. Storage – 2/location
8. Group Study Rooms – 4/location

Meeting Room (Orange/Blue Jacks):

1. Podium/Lectern – 1OR/1BL
2. Coordinate number of data drops for the Meeting Room. Quantity of cable drops will depend on the table and chair configuration.
3. Provide 1 Wall Phone (Location to be coordinated with ISD PM)

- c. All jacks shall be Category 6, 8 position, 8 wire with termination cap color, wired to the ANSI/TIA/EIA 568-B using the **T568-A wiring scheme**. All jacks shall be manufactured by Panduit (**CJ688TGOR** or **CJ688TGBU**). No brand substitutions will be accepted by the County.

- d. Panduit (CFPE4) shall be used to mount jacks on a four- (4) module, Electrical Ivory, faceplate for the wall.

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- e. Where outlet location is specified for a wall-mounted telephone, provide and install a voice cable terminated on a RJ45 jack with a single module faceplate by Panduit (Phone Plate with module - **KWP3Y**).
- f. Provide and install appropriate faceplate extenders as determined by modular furniture brand. The Communications Contractor shall determine bracket type and color prior to scheduled installation.
- g. If faceplates are mounted to double gang boxes, the Communications Contractor shall provide and install, as required, In-Wall box adapters as manufactured by Panduit.
- h. The Communications Contractor shall be responsible to install cover plates or blank modules of the appropriate color on any unused single or double gang boxes. Modules shall be Panduit (CMB).
- i. The Communications Contractor shall furnish and install cross-connect jumpers for telephone lines as required from the MPOE to MCR, between MCR's and IDF's and for faxes, modems, elevator phones, fire alarm and security systems, etc. as required.
- j. Any deviation/substitution must be verified and approved in writing by the ISD Project Manager prior to use.

3.5.3 Wireless Network Access Point (AP) Data Cables

- a. Each wireless AP location will require two (2) data cable runs to the MCR or Telecoms Room. The data cable shall be GenSPEED 6000 Enhanced Category 6 cable, 23 AWG, 4-pair unshielded twisted pair, plenum-rated (CMP), with blue outer jacket, terminated with RJ45 Mini-Com jacks part number CJ688TGOR (Orange) on both ends (outlet and patch panel side). For suspended T-bar ceiling installations, the jacks shall be mounted on a dual-port Panduit surface mount box (UICBX2IW-A). The APs shall be attached to the ceiling T-bar using the mounting bracket supplied with the AP unit. For hard ceiling installations, the jacks shall be mounted on the single-gang box (installed in the ceiling) with a dual-port Panduit faceplate (CFPE2IWY).
- b. The Contractor shall patch the WAPs as per the Patch Schedule provided by the ISD Project Manager or as required with "orange" patch cords (at device end) and "Yellow" patch cords on the patch panel.
- c. The locations of Cisco WAPs and Category 6 cable runs will be determined following an RF survey or as per layout drawings provided by the ISD Project Manager.
- d. The WAPs shall be installed per the manufacturer's installation guidelines, below ceiling and horizontally mounted with logo facing downward. Vertical

installation of the WAPs will not be allowed. Any deviation will require prior approval of the ISD Project Manager. Oberon Model 1029 wall-mount bracket shall be used for wall-mounted WAP installations. The jacks shall be mounted on a dual port faceplate mounted on a single-gang box. When aesthetics is strictly required by the architect, Terrawave Model TWC-AC-BKT-L mounting bracket shall be used for above T-bar ceiling installations. For below suspended ceiling/T-bar ceiling installations, use Ceiling Grid Clip, Recessed (AIR-AP-T-Rail-R), if the ceiling tiles land below the ceiling grid. Use Ceiling Grip Clip, Flush (AIR-AP-T-RAIL-F) if the T-bar ceiling tiles are flush with the ceiling grid. For hard ceiling installations with data outlet boxes mounted on the ceiling, Universal Mounting Bracket (AIR-AP-BRACKET-2) shall be used.

3.5.4 Patch Cables

- a. The Communications Contractor shall furnish patch cords per length, color and quantity specified by ISD Project Manager.
- b. Patch cords shall be Panduit Category 6, 23 AWG stranded, 4-pair assemblies with RJ45 plugs on both end, straight through (no pair reversals), and “slender strain” relief and “clear” boot type, **Category 6, UTPSP**, patch cords. The Communications Contractor shall be responsible for the installation and dressing of all patch cables in the MCR, TR and Workstations based on the Patch Schedule provided the ISD Project Manager.

3.6. DISTRIBUTION CABLING (where applicable)

3.6.1. Voice Cabling

- a. The Communications Contractor shall provide, install and terminate an appropriately sized, CMR or CMP rated cable (as determined by the ISD Project Manager), to provide connectivity between the MPOE and TR/MCR.
- b. Backbone cables shall be installed separately from the station cables. Where both cables are installed in a cable tray or wire way, backbone cables shall be installed first and bundled separately from the station cables.

3.6.2. Fiber Optic Cabling

1. If required, fiber optic cable shall be jacketed as appropriate for use in an underground environment.
2. The cable shall be composite, tight buffered, all dielectric, Kevlar strength members with polyethylene outer jacket (medium or high density) with 600 lbs pull-strength. Individual fibers shall be covered with a 900-micron primary buffer. Corning Cable Systems Indoor and Outdoor Buffer Tube Fan-Out Kits shall be used on both ends of the fiber cable to provide the ultimate fiber

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strand protection and management for the field installation of connectors and for the termination of 12-fiber buffer tubes. Corning Cable Systems Standard Recommended Procedures shall be followed when installing the Fan-Out kits. The cable shall contain continuous glass with Corning or Lucent Technologies glass only, and no splices.

3. The cable shall consist of **8 Multi-mode fibers** and **4 Single-mode fibers** and shall meet or exceed the following specifications.
 - a. **Multi-mode OM4:** diameter (microns) 50/125 Laser Optimized Multi-mode fiber (LOMMF); dual window (850/1300): maximum attenuation @ 850/1300 nm < 3.15/1.5 db/Km: minimum bandwidth (MHz-km) @ 850/1300 nm, 160/500: graded index.
 - b. **Single-mode:** diameter (microns) 8.3/125: dual window (1310/1550) maximum attenuation @ 110/1550 nm, < 4.3 db/km.
 - c. The Communications Contractor shall ensure that the multi-mode fiber optic cables can support FDDI, 100Base-FX, and 1000Base-FX, 10GBBASE-S, 10GBASE-LX4, 10GBASE-LRM, 40GBASE-SR4, 100GBASE-SR10 protocols, and the single-mode fiber optic cables can support 1000Base-LX, 1000Base-SX protocols, 10GBASE-LX4, 10GBASE-L, 40GBASE-LR4 and 100GBASE-LR4.
 - d. The Communications Contractor shall furnish and install a rack-mounted 12-port fiber distribution enclosure by Siecior or equivalent, fully equipped with couplers in the MCR.

Note: The Fiber Patch Panel Assemblies shall be mounted above the core chassis on the relay racks or as shown on the Equipment Rack Layout provided by the ISD Project Manager

- e. The Communications Contractor shall furnish, install and terminate all fiber optic strands on ceramic type of ferrule connectors in each distribution enclosure or fiber distribution panel, install LC or SC type of connectors for the multi-mode cables and LC or SC for the single-mode cables as required or directed by the ISD Project Manager.
- f. The Communications Contractor shall also furnish and install one-inch diameter inner-duct (orange color) for the complete fiber runs.
- g. The Communications Contractor shall furnish and install each span of the fiber optic cables in one continuous length, no splices, utilizing building conduits and sleeves.

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- h. The Communications Contractor shall provide all hardware required for terminations and for securing cable, such as clamps, tie-raps, soft buffer, spiral wrap or split loom, LC/SC connectors, etc.
- i. The Communications Contractor shall leave at least ten (10) feet of fiber optic cables slack on top of cable tray.
- j. The Communications Contractor shall provide other services, if required, to complete, such as: tighten barrel connectors, secure cable to fiber distribution panel, and install connectors to couplers, place fiber distribution enclosures in rack.
- k. The Communications contractor shall provide Duplex fiber patch cords per connector type (LC/LC, SC/SC or LC/SC), length, color and quantity required or specified by the ISD Project Manager.

3.7 CABLE TESTING

3.7.1. General

- a. All testing shall be per the Los Angeles County STD-902 Testing Standard. An orientation with the ISD and Library Project Managers shall take place on site prior to the test. It shall be scheduled at least one week in advance. The ISD and Library Project Managers shall certify prior to testing the following:
- b. Test meters have been calibrated to TIA/EIA Standard within the last 12 months with a Certificate of Compliance, meter serial number and date of calibration.
- c. Test meter shall be fully charged.
- d. Test configuration set to the County Standards.
- e. Manufacturer's warranty certification (if applicable) requirements shall be reviewed to ensure that all warranty requirements are met.
- f. The Communications Contractor shall furnish two (2) printed copy and two (2) copies on CD-ROM, with the complete set of test results. Copies of PC based software to view drawings and results shall also be provided to the ISD Project Manager and appropriate Library Staff.

3.7.2 Communications Contractor Requirements

- a. Communications Contractor shall provide sufficient skilled labor to complete testing within the agreed upon test period. Testing shall commence no later than _____ and be completed no later than _____.
- b. Communications Contractor shall have a minimum of 3 years experience installing and testing structured cabling systems. All installers assigned by the Contractor to the installation shall have factory certifications that they are qualified to install and test the provided products.
- c. Communications Contractor is responsible for supplying all of the required test equipment necessary to conduct acceptance tests.

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- d. Communications Contractor is responsible for submitting acceptance documentation as defined in section 3.7.5 below.

3.7.3 Test Process

- a. The County reserves the right to be present during any or all of the cable testing.
- b. Testing shall be of the Permanent Link. However, the Communications Contractor shall warrant performance (see Part 3) based on Channel performance and provide patch cords that meet Channel Performance.
- c. All cabling not tested strictly in accordance with these procedures shall be re-tested at no additional cost to the County.
- d. 100% of the installed voice and data cabling must be tested. All tests must pass acceptance criteria defined in 3.7.5.d.
- e. Test equipment shall be fully charged prior to each day of testing.

3.7.4 Standards Compliance & Test Requirements

- a. Cabling must meet the indicated performance specifications:
 - _____ TIA 568B Category 6
 - _____ TIA 568A Category 6
- b. All test equipment used must meet the performance specifications defined in section 3.7.6 below.

3.7.5 Documentation

- a. Test reports must be submitted in hardcopy and electronic format. Hand-written test reports are not acceptable.
- b. Hardcopy reports are to be submitted in labeled 3-ring binders with an attached affidavit verifying passing execution of all tests. For large installations, electronic reports with hardcopy summaries are preferred. Hardcopy summary reports shall contain the following information on each row of the report: circuit ID, test specification used, length, date of test, and pass/fail result.
- c. Electronic reports are to be submitted on CD-ROM only. If proprietary software is required to view test results, the software shall be provided to ISD and Library Project Managers. If the results are delivered in a standard format like Excel, Access, CSV files, etc. then software to read these files need not be provided. Electronic reports must be accompanied by a Certificate signed by an authorized representative of the Contractor warranting the truth and accuracy of the electronic reports. Certificate must reference traceable circuit numbers that match the electronic record.
- d. Test reports shall include the following information for each cabling element tested:

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- i. Wire map results that indicate the cabling has no shorts, opens, missed wires, splits, reversed, or crossed pairs, and end to end connectivity is achieved.
- ii. For Category 6 cabling: Attenuation, NEXT, PSNEXT, Return Loss, ELFEXT, and PSELFEXT data that indicate the worst case result, the frequency at which it occurs, the limit at that point, and the margin. These tests shall be performed in a swept frequency manner from 1 MHz to highest relevant frequency, using a swept frequency interval that is consistent with TIA and ISO requirements. Information shall be provided for all pairs or pair combinations and in both directions when required by the appropriate standards. Any individual test that fails the relevant performance specification shall be marked as a FAIL.
- iii. Length (in meters), propagation delay, and delay skew relative to the relevant limit. Any individual test that fails the relevant performance specification shall be marked as a FAIL.
- iv. Cable manufacturer, cable model number/type, and NVP
- v. Tester manufacturer, model, serial number, hardware version, and software version
- vi. Circuit ID number and project name
- vii. Auto-test specification used
- viii. Overall pass/fail indication
- ix. Date of test
- x. Test reports shall be submitted within 7 business days of completion of testing.

3.7.6 Test Equipment

- a. Test equipment used under this contract shall be from manufacturers that have a minimum of 5 year experience in producing field test equipment. Manufacturers must be ISO 9001 certified.
- b. All test tools of a given type shall be from the same manufacturer, and have compatible electronic results output.
- c. Test adapter cables must be approved by the manufacturer of the test equipment. Adapters from other sources are not acceptable.
- d. Baseline accuracy of the test equipment must exceed TIA Level III, as indicated by independent laboratory testing.
- e. Test equipment must be capable of certifying Category 6 links.
- f. Test equipment must be capable of storing full frequency sweep data for all tests and drawing color graphical reports for all swept measurements.
- g. Test equipment must include S-Band time domain diagnostics for NEXT and return

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loss (TDNXT and TDRL) for accurate and efficient troubleshooting.

- h. Test equipment must be capable of running individual NEXT, return loss, etc measurements in addition to auto-tests. Individual tests increase productivity when diagnosing faults.
- i. Test equipment must include a library of cable types, sorted by major manufacturer.
- j. Test equipment must store Category 6 auto-tests in internal memory.
- k. Test equipment must be able to internally group auto-tests and cables in project folders for good records management.
- l. Test equipment must include DSP technology for support of advanced measurements.
- m. Test equipment must make swept frequency measurements in compliance with TIA standards.
- n. The measurement reference plane of the test equipment shall start immediately at the output of the test equipment interface connector. There shall not be a time domain dead zone of any distance that excludes any part of the link from the measurement.

3.7.7. Fiber

- a. The Communications Contractor shall perform end-to-end fiber optic strand testing per Los Angeles County Fiber Testing Standard with the following minimum quality levels: Optical Time Domain Reflectometer (OTDR) with drawings (both directions) and absolute dB loss (power meter), at 850 nanometers for multi-mode and 1310 nanometers for single-mode. All fiber optic cable lengths less than 600 feet shall require a certified kilometer to be used with the OTDR testing equipment. After testing on the reel has been successfully completed, fiber optic system shall be installed with all patch cords attached and then the entire channel shall be tested.
- b. The Communications Contractor shall perform two sets of OTDR drawings with the above mentioned minimum quality levels. The first OTDR reading and drawings must be done on-site and submitted to the Project Manager prior to the utilization of the fiber, and the second OTDR reading and drawings must be done after installation.
- c. Upon completion of the fiber optic portion of this project, the Communications Contractor shall provide two complete sets of OTDR traces on 8 ½ x 11" sheets. The Communications Contractor shall annotate on each OTDR trace 1) direction of test per strand (from-to); 2) bundle number; 3) buffer color and 4) strand color. Communications Contractor-provided representations of the test data are not acceptable.

3.8 VOICE COMMUNICATIONS SYSTEM

3.8.1. Cisco Unified Communications Manager VoIP System

System Description and Installation Requirements

The County CIO has directed that all new Voice Systems shall be part of a centrally administered, distributed processing, Cisco VoIP system. ISD has implemented this through a program named Hosted IP Telephony. ISD will furnish, install a WAN router at each site and as required. ISD shall insure connectivity and QoS is implemented to the Hosted VoIP systems.

The Communication Contractor shall be a **Cisco Gold Certified Partner** with a minimum of five (5) year experience in Cisco VoIP installations. No exceptions will be allowed. Further, the Communications Contractor shall obtain the following Authorized Technology Partner (ATP) Certifications as required:

- Tele-Presence
- Video Surveillance

The following documents are templates to be referenced as Cisco Published Best Practices. The Communications Contractor shall follow these published practices and furthermore, are liable for any remedies associated with correcting problems that are the result of not following these practices.

The Contractor shall, at a minimum, test all newly installed equipment using the County of Los Angeles LAN and VoIP System Functionality and Cut-Over Test Plan (to be provided by the ISD Project Manager) as applicable or as directed by the ISD Project Manager. The County reserves the right to require additional tests not listed on said Test Plan. The Contractor shall coordinate with LA County ISD Project Manager as to which tests are applicable. The ISD Project Manager shall be present and shall participate in all tests. Further, the Contractor shall certify to the ISD Project Manager and Communication Services Analyst that the system is fully operational and functional.

UCM-9.x-Admin.pdf (Available at Cisco's Web Site)

Unity Connection-9.x -Admin.pdf (Available at Cisco's Web Site)

LAC IPT DHCP on VG r0-3.pdf (supplied by ISD Project Manager)

NSD-NMS Device Naming Convention (supplied by ISD Project Manager)

CCM Naming Convention (supplied by ISD Project Manager)

Due to Data Center security constraints, the Contractor shall be limited to a maximum of five (5) specific individuals to be granted temporary access to the Downey Data Center. Contractor shall provide the names of these individuals two (2) weeks prior to the start date of any work in the Data Center. Identified individuals may be required to sign in and out each time they access the Data Center and may be subject to random searches. ISD Personnel will be responsible for password logon access to the existing Hosted system. This access is not transferable to any other individual.

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ISD Personnel shall be responsible for password logon access to the existing ISD Hosted system servers. No access shall be given to the Contractor. ISD personnel must be present during all programming and modifications to any and all systems.

All “Batting” and/or bulk uploading of Call Manager and Unity database shall be completed at the 9150 E. Imperial Hwy Data Center or at the Eastern Ave complex. It requires an approved RFC (Request for Change) and must be coordinated with appropriate ISD Telephone Shop personnel. It must be completed during off-hours.

1. The Contractor/(or ISD as required) shall program and configure the existing Cisco Unified Communication Manager, including other IP Telephony components and instruments to provide a fully operational VoIP implementation.
2. The Contractor shall furnish and install only the latest ISD/Cisco approved version of software on any supplied Cisco equipment.
3. The Contractor/(or the LA County Communications Service Analyst as required) shall develop the database for the Call Unified Communication Manager, Unity Connection, Active Directory with assistance from appropriate County personnel.
4. The current Cisco/ISD approved naming conventions for VoIP, including, but not limited to Call Unified Communication Manager programming components, VoIP devices, and data switches, shall be obtained from the ISD Project Manager and adhered to strictly. Any deviations must be approved in writing by the ISD VoIP Engineer prior to implementation. Any deviations found but not approved as indicated shall be corrected at no expense to the County.
5. The Contractor shall be responsible to perform the following tasks to ensure a successful and consistent installation:
 - a. Develop configuration documentation with input from the County.
 - b. Develop an implementation-specific Network diagram with input from the County’s design team.
 - c. Receive and inventory all equipment delivered at the site on the approved form provided by the ISD Project Manager. Record all pertinent information including but not limited to the model name/number, serial numbers, OS and/or IOS versions, SmartNet contract numbers (include start dates), blade configuration, installed locations, etc.
 - d. Furnish and install turn-key voice gateway(s) as required. Load and configure implementation-specific Call Manager, gateway, phones and, as required, Internetworking Operating System (IOS). Current LA County/Cisco approved non-call center **IOS is 15.1(3)T**. DHCP for all IP telephones shall be provided on the VG per “LAC IPT DHCP on VG r0-3.pdf”
 - a) Current specification is **CISCO C3925-CME-SRST/K9** equipped as follows. Deviations must be approved by the ISD VoIP Design Engineer and ISD Project Manager.

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Product	Description	Qty
C3925-CME-SRST/K9	3925 Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK	1
3900 FANASSY	Cisco 3925/3945 Fan Assembly (Bezel included)	1
C3900-SPE100/K9	Cisco Services Performance Engine 100 for Cisco 3925 ISR	1
FL-CME-SRST-25	Communication Manager Express or SRST - 25 seat license	1
ISR-CCP-EXP	Cisco Config Pro Express on Router Flash	1
MEM-3900-1GBU2GB	1GB to 2GB DRAM Upgrade (1GB+1GB) for Cisco 3925/3945 ISR	1
PWR-3900-AC	Cisco 3925/3945 AC Power Supply	1
PWR-3900-AC/2	Cisco 3925/3945 AC Power Supply (Secondary PS)	1
S39UK9-15104M	Cisco 3925-3945 IOS UNIVERSAL	1
SL-39-IPB-K9	IP Base License Cisco 3925/3945	1
SL-39-UC-K9	Unified Communication License for Cisco 3900 Series	1
CAB-AC	AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	1
CON-SNT-3925CMST	SMARTNET 8X5XNBD 3925 Voice Bundle UC License PAK	1
FL-SRST	Cisco Survivable Remote Site Telephony License	1
MEM-CF-256U1GB	256MB to 1GB Compact Flash Upgrade for Cisco 1900/2900/3900	1
PVDM3-256	256-channel high density voice and video DSP module	1
VIC2-4FXO	Four-port Voice Interface Card – FXO (Universal)	N
VVIC2-2MFT-T1/E1	2-Port RJ-48 Multiflex Voice/WAN Trunk = T1/E1	N
L-CCX-90-ADDON-LIC	CCX 9.0 ADDON - eDelivery LICENSES ONLY	1
CON-ESW-L90ADDON	ESSENTIAL SW CCX 9.0 ADDON - eDelivery LICENSES ONLY	1
L-CCX-90-E-PAK	CCX 9.0 autoexpanded eDelivery PAK	1
L-CCX-90-A-P-LIC	CCX 9.0 ADDON PREMIUM Seat Qty 1 LICENSE	N
CON-ESW-LCCX90AP	ESSENTIAL SW CCX 9.0 ADDON PREMIUM Seat LIC	N
UCSS-U-CCX-P-1-1	UCSS for CCX PRE for - 1 users One Year Sub	N
CUCM-VERS-9.X	CUCM Software Version 9.X	1
LIC-CUCM-9X-ENH-A	UC Manager-9.x Enhanced Single User-Under 1K	N
CON-ESW-LICCENHA	ESSENTIAL SW UC Manager-9.x Enhanced Single User-Unde	N
UCSS-U-UCM-A-1-1	UC Manager UCSS - 1 ENH User One Year Sub Tier A	N
L-UNITYCN9-LIC-UPG	Unity Connection 9.x SW Feature License Add-ons	1
CON-ESW-LUNITLIC	ESSENTIAL SW Unity Connection 9.x	1
UNITYCN9-STD-USR	One Unity Connection 9.x Voice Messaging User	N
UCSS-U-MSG-1-1	UCSS for Unity or Unity Connection - 1 user One Year Sub	N
CON-ESW-UNITYSTD	ESSENTIAL SW One Unity Connection	N

N -quantity varies depending on the specific requirements of the library. Verify with LA County ISD Project Manager.

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- e. Unpack and assemble telephony devices and attach the designation strips for each.
 - f. Confirm the site readiness prior to equipment installation.
 - g. Install and connect the equipment to County's provided facilities at the agreed upon demarcation points.
 - h. Troubleshoot and replace hardware failures relating to the installation of the equipment prior to placing any equipment into production.
 - i. Provide remote technical support for the Contractor's on-site engineer during installation, migration, cut-over, and implementation.
 - j. Verify the operation of the programmed and installed Call Manager(s), Gateway(s) and phone(s) per the Project Implementation Plan.
 - k. Document and deliver system completion certificates for the equipment installed.
 - l. Develop project implementation test plans with input from the County.
 - m. The Communications Contractor shall provide project specific and appropriately sized **APC UPS systems** to support installed data switches and phones for up to four (4) hours. The system shall include environmental monitoring via **AP9631**. The ISD Project Manager shall provide and approve all UPS specifications. No deviations shall be allowed. Below are the current acceptable APC UPS model, part numbers and accessories required. If the UPS model below is discontinued, please consult with ISD Project Manager.
 - 1) APC Smart-UPS RT 3000VA Rack/Tower – SURTA3000RMXL3U (qty 1)
 - 2) APC UPS Network Management Card 2 with Environmental Monitoring – AP9631 (qty 1)
 - 3) APC Smart-UPS RT 192RM Battery Pack – SURT192RMXLBP3U (qty 4**)
 - 4) APC Rack PDU, Basic 1U - AP9563 (qty 1)** -quantity varies on a per site or project requirement.
6. Due to the nature of this project, the Contractor shall insure that a Cisco Certified Installation Engineer (CCIE) with VoIP experience is either on staff or under contract to provide installation support and/or programming for this project.
7. The LAN shall consist of 10/100/1000Mbps switching infrastructure. The Contractor shall be responsible for all installation and configuration of Cisco equipment including but not limited to catalyst IOS, IP, VLAN, sub-nets, routes, etc. The Cisco equipment, software, and configurations installed must be compatible with the existing LA County network architecture, and network management software and hardware. To prevent DHCP servers from trunking to the voice VLANs, a VTP domain password shall be configured on ALL LAN switches.

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8. The Contractor shall work with the ISD Project Manager to determine tasks required to migrate users from any existing environment to Cisco based Virtual Local Area Network (VLAN) network.
9. The Contractor shall utilize an IP addressing scheme furnished by the County. Separate VLANs shall be provided for data devices; VoIP telephone instruments, and VoIP servers/VGs, and other such devices. The Contractor shall permanently affix a machine printed label with the assigned IP address to each equipment component to which one has been assigned.
10. The Contractor shall furnish, install, set-up and configure all equipment for use with the County's installed version of Cisco Unified Operations Manager (CUOM) in the Downey NOC.
11. The Communications Contractor shall furnish and install Cisco Power over Ethernet (PoE) enabled switches and components (as listed below) and as per quantity specified by the ISD Project Manager to support the Public Library port requirements:
 - a. Catalyst 3750X 48 Port Full PoE IP Base
WS-C3750X-48PF-S (qty. 4**)
 - b. CAT 3750X IOS UNIVERSAL with WEB BASE DEV MGR
S375XVK9T-12258SE (qty. 4**)
 - c. Catalyst 3K-X 1100W AC Secondary Power Supply
C3KX-PWR-1100WAC/2 (qty.2**)
 - d. Cisco StackWise 50CM Stacking Cable
CAB-STACK-50CM (qty. 4 **)
 - e. Catalyst 3750X Stack Power Cable 30CM
CAB-SPWR-30CM (qty. 4**)
 - f. AC Power Cord for Catalyst 3K-X (North America)
CAB-3KX-AC (qty. 6**)
 - g. Catalyst 3K-X 1100WAC Power Supply
C3KX-PWR-1100WAC (qty. 4**)
 - h. Catalyst 3K-X Network Module Blank
C3KX-NM-BLANK (qty. 4**)
 - i. SMARTNET 8X5XNBD Catalyst 3750X 48 Port Full PoE IP Base
CON-SNT-3750X4FS (qty. 4**)
 - j. Catalyst 3750X Stack Power Cable 150 CM Spare
CAB-SPWR-150CM (qty. 1**)
 - k. Cisco StackWise 1M Stacking Cable
CAB-STACK-1M (qty. 1**)

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- l. Catalyst 3K-X-1G Network Module option PID
C3KX-NM-1G (qty. 0**)
- m. GE, SFP, LC Connector SX Transceiver
GLC-SX-MM (qty. 0**)
- n. 1000BASE-T SFP
GLC-T (qty. 0**)

** - quantity varies depending on the specific needs or requirements of the library. Verify quantity with LA County ISD Project Manager.

- 12. The Communications Contractor shall furnish and install Cisco VoIP instruments with device licenses and per quantity specified by the ISD Project Manager. Quantity and type of endpoint devices and licenses shall be verified with Public Library Communications Service Analyst and the VoIP Design Engineer prior to ordering. The appropriate Cisco SmartNet protection shall be provided for each device. Authorized models are:
 - a. CP-7962G – Six button phone
 - b. CP-7937G – Conference phone
 - c. CP-7970/75G – Eight button color phone
 - d. CP-7925 – 802.11x wireless phone
 - e. CP-7914 – Sidecar module

Wall-mount Cisco phones shall be mounted using the Universal Locking Mounting Kit for 7900 series phones (CP-LCKNGWALLMNT2).

- 13. Utilizing Cisco's current best practices, the Communications Contractor shall assist the Library Communications Services Analyst, as required, in gathering all information required to develop the user database (i.e., key sheets, numbering plan, class of service, number and type of instruments, etc.). The information shall be forwarded to the ISD Project Manager six (6) weeks prior to the scheduled cut-over date. Change requests submitted in the (six week) interim will be held until after cutover.
- 14. It shall be the responsibility of the ISD Project Manager and the assigned Library Communications Services Analyst to provide an accurate database to ISD's Mid-range Computing Division for inclusion into ISD's Active Directory scheme at least two weeks prior to the scheduled cutover.
- 15. The Communications Contractor shall be responsible to assist the County with the configuration of all Telephony components as required. The Communications Contractor shall be responsible to assist the County with testing and troubleshooting all Telephony components during the system configuration phase.
- 16. No more than one (1) week after the telephone system is fully operational, the Communications Contractor, ISD Project Manager, ISD Telephone Repair Shop Supervisor or his/her designee and appropriate Library Staff will test all newly installed equipment. A Test Plan shall be developed by the Communications

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Contractor, ISD Project Manager, ISD VoIP Engineer using the County of Los Angeles LAN and IPT System Functionality and Cut-Over Test Plan document as reference prior to the test date. Said Test Plan document shall be used for acceptance of the installation and configuration and will be signed off by the ISD Project Manager, VoIP Engineer, Public Library Project Manager and the Communications Contractor. A Certificate of Acceptance will be signed by the ISD Project Manager, ISD Telephone Repair Shop designee, and Library Communications Services Analyst.. The warranty of the telephone system will start on the signature date.

17. The Communications Contractor shall cross-connect all PSTN lines/facilities as required and determined by ISD Project Manager and Library Communications Service Analyst. These may include but are not limited to PRIs, analog trunks, faxes, and modem lines. Physical locations for faxes and modems to be determined during installation.
18. The Communications Contractor shall provide an FXO Trunk from the gateway for connection to the paging amplifier. The FXO shall be placed on an RJ14 and clearly tagged. The Communications Contractor shall terminate the circuit on the paging amplifier using an RJ14-to-Spade terminating cable.
19. The Communications Contractor shall provide five (5) units Plantronics Wireless Headsets with Lifter (Model CS55-HL-10).

3.9 AUDIO – VISUAL SYSTEMS

3.9.1 Meeting Room

- A. The intent of the Meeting Room Audio/Video systems shall be to provide a multipurpose audio/video system to be used for meetings, presentations, and other community audio/video functions. The meeting room shall have a public address system, data/video projection system, projection screen, equipment rack, and be integrated with the video conferencing system. The Meeting room audio/video system shall be controlled by a touch panel control system. Audio/Video input sources shall include but not limited to PC video with audio (both VGA and HDMI), Blu-ray, VCR/DVD, videoconference codec, TV programming (MATV, SATV, CATV, digital media streaming), hardwired and wireless microphones, AM/FM tuner, and CD recorder/player.

The Meeting room shall have an Audio/Video control room directly adjacent to the meeting room with accessibility from the meeting room. The audio/video control room shall be a minimum of 8'W x 10' D with 9' ceiling. **The audio/video control room shall have Air-conditioning at all times.** The specifications for air conditioning, electrical, fire protection, flooring, lighting and grounding for the Telecommunication Room shall also be applicable to the audio/video control room.

Lighting controls for the meeting room shall be installed in the audio/video control room. The light controls shall be able to raise and dim the light levels and also to be able to turn the lights on and off. A lighting control unit shall be installed for each zone of lighting. Overall lighting control shall be installed in the meeting room as shown on the drawings. Lighting controls shall also be controlled by the Audio/Video touch panel

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control system. Lighting shall be configured so that lighting in front of the projection screen can be dimmed and/or turned off while the remaining lighting in the room can remain on and/or dimmed.

3.9.2 Public Address System

A. Systems Description and Installation Requirement

- a. The Public Address system shall be a 70V system. The Public Address system shall consist of a audio digital signal processor which has multiple functions (mixer, compressor/limiter/gate unit, equalizer, etc) feedback processor, amplifier, two (2) hand held wired microphones, two(2) handheld wireless microphones, two (2) wireless lavalier microphones, two (2) microphone floor stands, microphone cabling, connectors, wall plates, ceiling speakers, and a assistive listening system. The PA system shall be integrated with the videoconference system.
- b. The audio digital signal processor, feedback processor, amplifier, and receivers for the wireless microphones systems shall be rack mounted in the equipment rack in the audio control room.
- c. The ceiling speakers shall be mounted and earthquake braced in the ceiling. Speakers shall be located in the ceiling as shown on the drawings. The speakers shall be installed flush with the ceiling. Speakers shall be configured in which the speakers located at the front of the meeting room shall be connected to one channel of the amplifier and the speakers located at the rear of the conference room shall be connected to the second output of the amplifier. Speaker cabling shall be shielded.
- d. The wireless microphones shall be installed with different frequencies. The wireless microphone receivers shall be installed and rack mounted in audio video control room equipment rack. The wireless microphone systems shall be color coded to differentiate between the systems.
- e. A microphone outlet shall be installed in the front wall of the meeting room . The microphone outlet shall be located as shown on the drawings. The microphone outlet shall be connected to an input of the audio digital signal processor. The microphone outlet shall be mounted flush in the wall. Microphone cabling shall be shielded.
- f. A microphone outlet shall be installed in the rear wall of the meeting room . The microphone outlet shall be located as shown on the drawings. The microphone outlet shall be connected to an input of the audio digital signal processor. The microphone outlet shall be mounted flush in the wall.
- g. The assistive listening system shall be installed in the meeting room as shown on the drawings. The assistive listening system shall be an infrared system. The emitter panel shall be mounted on the front wall facing the audience and

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connected to the output of the audio digital signal processor. The contractor shall furnish and install the quantity of headset receivers as required by ADA rules plus an additional five (5) headset receiver units. The Communications Contractor shall position the infrared transmitter to provide coverage of the entire audience area.

- h. The Contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Materials and Equipment

- a. Amplifier – QSC CX204V
- b. Digital Signal Processor – Biamp Audia Flex CM w/IP-2, AEC-2HD input cards and OP-2E output cards to configure a 14 input x 10 output audio processor
- c. Feedback processor- Sabine FBX2410
- d. Hand Held wired microphone – Shure SM58
- e. Hand Held wireless microphone system – Shure ULXP 24/58
- f. Lavalier wireless microphone system – Shure ULXP 14/85
- g. Microphone floor stands – Atlas Soundolier MS – 12CE
- h. Microphone outlet plates – Lowell Manufacturing MCPI – C3F
- i. Assistive listening system – Sennheiser SZI1015-T/NT emitter panel, IR Headset RI 150, Battery Charger L151-10 and NT92-120, Spare batteries BA151, and wall/ceiling mount WM1.
- j. Speaker cabling – WestPenn 25294B
- k. Microphone cabling (wall plate to DSP processor) – WestPenn 25303B
- l. Microphone cabling (15') with connectors - Whirlwind MK415
- m. Ceiling speakers – JBL Control 26CT or as specified.
- n. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.9.3 Data/Video Projection

A. Description and Installation Requirements

The data/video projection system shall project the data and video signals from the signal source to the video projection screen located at the front of the meeting room. The data/video projection system shall consist of a video projector and ceiling projector mount. The projector and projector mount shall be securely mounted and earthquake braced. The projector shall have a native resolution of 1920x1200 WUXGA and 16;10 aspect ratio. The projector shall be controlled by the A/V control system including on/off and input selection functions.

The video projector shall be mounted in an alcove recessed in the wall at the rear of the meeting room and mounted on the ceiling of the alcove with a pole mount and supporting hardware. The alcove shall be sized to provide proper ventilation for the projector.

If installing the projector in an alcove is not feasible, the projector shall be mounted on a motorized projector lift in the room ceiling. The motorized projector lift shall raise the projector

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above the ceiling and be flush with the ceiling when not in use. When the projector shall be used, the projector shall be lowered to the appropriate height.

The projector lift shall be controlled by a three function motorized projector lift controller switch. The projector lift controller switch shall be low voltage type and shall be used with a low voltage control unit. The key activated controller switch shall be mounted on the wall. The controller switch shall have independent functions for up, down, and stop. The lift shall also be controlled by the touch panel audio/visual control system. The projector lift shall include ceiling closure panel, plenum housing, ceiling finishing kit, ceiling access door, projector mounting bracket, and factory installed cabling for HDMI, RGBHV, and control. Four (4) controller switch keys shall be provided to the County.

The contractor shall also furnish and install a video scaler at the projector location and connect the output of the scaler to the HDMI input of the projector. Contractor shall also connect the video scaler to the output of the AV switcher system.

Electrical outlets shall be installed for projector use. Electrical outlets shall be installed flush in the alcove at the projector location if the projector is pole mounted. Electrical service shall be integrated in to the motorized lift equipment if the projector is installed on a motorized lift and follow the projector lift manufacturer's specifications.

The projector shall be located away from the projection screen at a distance in accordance to both the projector and screen manufacturer's specifications.

The Communications Contractor shall furnish two (2) additional spare bulbs for the projector.

There shall not be any obstructions at the projector location to prevent the mounting and storing of the project in the ceiling. The Communications Contractor shall coordinate with the general contractor and other trades to ensure that projector will be free from any obstructions. The

Communications Contractor shall also coordinate and ensure that there will not be any obstructions in the projection path between the projector and the screen.

B. Materials and Equipment

- a. Projector – Infocus 5145 with appropriate Lens
- b. Pole Mount – Chief Mfg with appropriate size pole, mounting bracket, and ceiling plate
- c. Motorized lift – Draper SL series with accessories as stated in specification.
- d. Motorized lift controller switch – Draper LVCS
- e. Low voltage control unit – Draper LVCIII
- f. Cabling – Crestron DM cable – plenum rated, Extron RS232 cabling – plenum rated. HDMI cabling – Crestron, Extron, C2G
- g. Connectors – Crestron, Extron, as required
- h. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.9.4 Projection Screen

A. System Description and Installation Requirements

The projection screen shall be used for displaying video/data images projected by the video projector. The projection screen shall be recessed in the ceiling and securely mounted and earthquake braced. The projection screen shall be located at the front of the meeting room. The projection screen shall be motorized with a three function low voltage control switch to raise, lower, and stop the screen. The screen shall also be controlled by the touch panel audio/video control system. The low voltage switch shall be used in conjunction with the low voltage control unit. The projection screen shall have a projection surface suitable for data and video projection and tensioned. The projection screen size shall be based upon the Meeting room size with 16:10 format. Electrical contractor shall furnish and install the electrical service to the screen motor and make final terminations to the screen motor.

B. Materials and Equipment

- a. Projection Screen – Da-Lite Tensioned Advantage Deluxe Electrol Series with DaMat surface
- b. Low voltage switch – Da-Lite
- c. Low voltage control module - Da-Lite
- d. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.9.5 Presentation System

A. System Description and Installation Requirements

An Audio/Video presentation system shall be installed in the meeting room. The audio/video equipment shall consist of a DVD/VCR combination unit, Blu-ray DVD Player, AM/FM tuner, AM/FM antenna, CD Player/Recorder, Audio/Video Matrix Switcher, , touch panel audio/video control system, County Library provided computer, wireless keyboard, wireless mouse, computer video audio/video input wall plate(s), MATV/CATV/SATV receiver, digital media streaming player, rack mounted preview monitor/touch panel, equipment rack, amplifier, and speakers. The computer audio/video input wall plate shall have inputs to accommodate for HDMI and VGA with audio signals. The Audio/Video presentation system shall be integrated with the meeting room PA system including integrating with the audio processor and the assistive listening system.

With the exception of the computer audio/video wall plate, wireless keyboard, wireless mouse, and speakers, AM/FM antenna, wireless audio/video touch panel, and the assistive listening emitter panel, the equipment shall be rack mounted in the equipment rack located in the audio control room.

The presentation system shall provide audio, video, and computer video signals to be displayed on the projection screen and heard through the speakers.

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An audio/video matrix switcher shall be installed to select between the input sources to be displayed on the projection screen via the projector and selected audio source to be heard through the speakers.

Touch panel control system shall be installed to control the functions of the projector, projector lift, projector screen, DVD/ VCR combination unit, Blu-ray DVD player, CD player/recorder, audio/video matrix switcher, , videoconference system (if installed) audio processor, AM/FM tuner, digital media streaming player, and MATV/CATV/SATV receiver box. The control system shall be also able to control the audio volume levels of the meeting room PA and presentation systems. The touch panel control system shall be able to control the power on/off functions for all of the audio/video equipment. The control touch panels shall select the audio, video and computer source to be displayed and heard on the presentation system. A wireless control touch panel with docking station shall be installed and wall mounted in the meeting room. The Communications Contractor shall configure and program all hardware and software for the control touch panels, control system, and audio/video switcher, HDMI switcher, and all other hardware and software associated with the meeting room audio video system. All programming data, configuration, and application software shall become the sole property of the County for the County's use. The Communications Contractor shall provide two copies to the County all programming data, configuration, and programming application software on CD/DVDs.

The presentation system shall be configured so that the audio from the meeting room public address system can be recorded on the CD recorder.

A second, hard wired control touch panel, shall be installed in the equipment rack and have the same capabilities as the wireless control touch panel to control the Meeting room audio/video systems. A release button shall be configured on the hardwired touch panel to release the wireless touch panel from the docking station utilizing a password. The hardwired touch panel shall also function as a preview monitor with the capability to display the video content of the AV system. The wireless touch panel shall be fully functional controlling the audio/video system while in the docking station.

Speakers shall be flush wall mounted on either side of the projection screen.

A MATV/CATV/SATV cable drop and receiver box shall be installed from the MATV/CATV/SATV system in the MCR room to the equipment rack. A digital media streaming player shall also be installed in the equipment rack as required. The TV drop and streaming media player shall be integrated into the audio/video system to be displayed in the meeting room over the presentation system.

A computer audio/video wall plate shall be installed at the front of the meeting room and also at the rear of the meeting room. Each VGA with audio and HDMI input shall be configured in the matrix switcher system as an individual audio/video input source.

The Communications Contractor shall furnish and install a AM/FM antenna on the roof of the building. The Communications contractor shall furnish and install RG 6 or larger coax cabling from the AM/FM antenna to the AM/FM tuner and connect the antenna to the tuner. The Communications contractor shall pad the incoming radio signals as necessary to provide proper signal strength to the AM/FM tuner. The Communications contractor shall ground the antenna

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and cabling according to NEC codes.

The equipment rack shall be installed and earthquake braced at the top and bottom of the rack. The equipment rack shall be grounded. The equipment rack shall have a vented top panel. The equipment rack shall have a power strip with surge suppression and circuit breaker. All blank rack spaces shall be covered with black vented panels. The Communications contractor shall also provide and install a rack mounted UPS capable of supporting the Control system, Audio processor, touch panels, and AV matrix switcher for a minimum of 2 hours in the event of AC power disruption.

The Communications Contractor shall furnish and install a laminated “as built” drawing of the wiring diagram for the presentation, public address, and video conferencing systems in the meeting room. The drawing shall be 36”W x 24” H. The drawing shall show all components of the presentation, public address, and video conferencing systems including the interconnections. The drawing shall be installed and mounted on the wall in the audio/video control room.

The Communications Contractor shall provide hands-on training to LA County staff at a date and time to be determined by the County Library in the operation of the system. A roster of attendees shall be documented.

B. Materials and Equipment

- a. Analog/Digital Tuner - Aurora V-Tune-PROHD
- b. Blu Ray DVD player – Sony, Samsung
- c. CD Player/recorder – Tascam CD-RW901SL
- d. Digital media streaming player – Apple TV and Apple Air Play
- e. AM/FM Tuner – Tascam TU-690
- f. AM/FM Antenna kit – Pixel Technologies AFHD-4
- g. Amplifier – QSC CX302V
- h. Speakers - JBL Control 128WT
- i. Audio processor – Biamp Audia Flex CM w/IP-2 and OP-2E cards for a 14 input x 10 output configuration
- j. Audio/Video Switcher – Crestron DM-MD8x8
- k. Switcher input cards – Crestron DMC-C, DMC-HD,
- l. Switcher output cards – Crestron DMCO-53
- m. Computer VGA with audio/HDMI wall plate – Crestron DM-TX-200-C-2G-W-T
- n. Video scaler – Crestron DM-RMC-SCALER-C
- o. Control system – Crestron PRO2 w/ dual Ethernet module
- p. Control system associated equipment and accessories – Crestron
- q. Control Panel, wireless – Crestron TPMC8X with wall mount docking station
- r. Control Panel/preview monitor, hardwired – Crestron V15-WALL-B, Digital graphics engine DGE-2, and Middle Atlantic custom rack kit
- s. Volume control – Built into Control Panel
- t. PoE Router/Switch – Netgear, Cisco
- u. Wireless Keyboard/Mouse suite - Gyration GP3200-001
- v. Equipment rack – Middle Atlantic MRK-4426AXS-Z4 with vented top, power strip, seismic bracket, slide out tracks, track leveler, and cable management.

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- w. Cabling and connectors – All required cables and connectors to furnish and install a complete and fully functional system including Crestron DM 8G plenum cable and associated Crestron connectors.
- x. Miscellaneous materials – All materials necessary to furnish and install a complete and fully functional system.

3.10 WiFi WIRELESS NETWORKS

A. LAC Employee Wireless Network

The intent is to provide authorized County employees with access to the LAC Employee Wireless Network, which provides controlled access to County information systems and networks via the County-side Enterprise Network. The LAC Employee Wireless Network requires user authentication utilizing a SecurID Token in order to gain access.

B. County Library Wireless Network

The intent is to provide the public with Internet access utilizing a separate VLAN County Library Wireless Network, routing users directly to the Internet via the County-side Enterprise Network.

C. Wireless Network Access Points

The intent is to provide centrally located (ceiling -mounted) Cisco Lightweight (controller-based) wireless access points to the LAC Employee Wireless Network and County Library Wireless Network as shown on the drawings or plans provided by the ISD Project Manager. Exact locations are to be reviewed and verified with ISD Project Manager.

ISD will dictate the quantity and model of Wireless Access Points units (internal or external) required to be used.

3.11 EQUIPMENT RACKS / MOUNTINGS

- a. The contractor shall provide and install equipment racks that are earthquake rated for Zone 4. All rack installations shall be in accordance with the Los Angeles County Standard 902. This standard will require the use of a 3-inch spacer bar (B-Line P/N STD108DET4) or the **Chatsworth Cable Tray Elevation Kit (P/N: CPI 10506-702)** to attach the rack to the cable tray.
- b. The contractor shall provide and install standard 2-Posts relay racks, 19"W x 7'H (**Chatsworth P/N 48353-703 or P/N 55053-703**, 45 RMU), color black, heavy duty rack shelves and cable trays as shown on the plans. 4 posts relay racks, 19"W x 29"D x 7'H (**Chatsworth P/N 50120-703, 45 RMU**), black color, shall be used to mount the Network equipment, UPS and batteries. The contractor shall install, position, reposition, or remove racks and equipment as required without disruption of ongoing services. The contractor shall furnish extension cables, power taps, or temporary racks if needed.

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- c. All equipment racks shall be augmented with horizontal and vertical wire management hardware, both front and back as required, to properly dress cables and patch cords.

The horizontal wire organizers shall be Panduit **WMPH2E** and **WMPSE** as required or as shown on the Equipment Rack Layout furnished by the ISD Project Manager. Furnish one (1) horizontal wire organizer per patch panel plus one (1) additional wire organizer at the top of each row of patch panels. Be sure to include the Panduit Mini-Com Jacks on the patch panel. Vertical wire managers shall also be furnished and installed using either Panduit **WMPVHC45E** or **WMPV45E** as required. Refer to the Equipment Rack Layout provided by the ISD Project Manager for further details.
- d. The number of equipment racks shall be determined by ISD Project Manager. The number of racks required shall be dependent on the size of the Library or the number of data ports and computer stations.
- e. All voice/data cables shall be terminated on separate patch panels in the MCR. Separate patch panels shall be allocated for STAFF ports and PUBLIC ports. The cables shall be terminated and labeled sequentially on the patch panels. The Equipment Rack Layout will be provided by the ISD Project Manager. Voice cables are normally terminated on the 66 blocks mounted on the designated backboard space as shown in the MCR layout. Confirm with ISD Project Manager regarding voice cable termination in the MCR/TR.
- f. Cable trays shall be Chatsworth Products, INC. (**CPI**) P/N **11252-713**, black color.
- g. All structural ironwork shall be UL-certified, providing the best bonding for static and grounding. Painted structural ironwork is not allowed.
- h. Cable tray shall be of the tubular type construction. The tray shall be installed with the rungs on the topside of the tray. All attachments to drywall shall be on ¾" plywood.
- i. Cable trays shall be mounted at 7'3" above the finish floor. This will require the installation of a 3" (Black) spacer manufactured by B-Line Systems, INC., P/N STD108DET4 or the **Chatsworth Cable Tray Elevation Kit (P/N: CPI 10506-702)**. The B-Line part number is not cataloged and requires special order. The 7'3" allows for the cable tray to be positioned over the 7' doorway.
- j. Structural cable tray, relay racks, cabinets, systems, attachments and earthquake bracing shall comply with Zone 4 earthquake, NEMA, NEC and TIA/EIA-569 standards. Floor mounting hardware shall be a 3/8" bolt, lock washer, flat washer, with anchor in the floor, quantity as required.
- k. All exposed cut and sharp edges shall be trimmed and filed to a safe finish. Cable tray runway ends shall be capped with a black rubber cap.
- l. Relay racks shall be high strength aluminum construction with universal 5/8"-5/8"-1/2" tapped mounting hole #12-24 thread pattern on both front and rear. Designed and seismic built to the EIA-310C Standard.
- m. All cable tray and racks shall be individually grounded to the Telecoms Ground Bus Bar using the standard ground lug and #6 AWG stranded ground copper wire with "Green" jacket or insulation. Daisy chaining the ground wire between racks is not allowed.

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- n. The Communications Contractor shall install, position, reposition, or remove racks and equipment as required without disruption of ongoing services. The Communications Contractor shall furnish extension cables, power taps, or temporary racks if needed.

PART 4 EXECUTION

4.1 INSTALLATION

A. General

All equipment shall be installed in accordance with the published practices of the equipment manufacturer, applicable FCC regulations, generally accepted industry standards, cited codes and standards, and this specification.

B. Temporary Installation

The contractor shall temporarily install all electronic equipment for the final tests of the equipment and the systems, and then shall remove and store all equipment which is not built-in until occupancy by County personnel. The contractor shall then return and make complete and final installation and check-out.

C. Equipment Not Installed

Equipment not meant for installation and all spares shall be delivered on site, to Library Capital Projects Staff and secured.

D. Wiring

Terminations and connections throughout all systems shall employ one of the following methods:

1. Solder terminals, telephone-type punch terminal strips or machine wire-wrapped terminals in all cabinets.
2. Crimp connectors at outlet boxes and screw type or plug and socket connections at all equipment. Note that crimp-type connections are approved only for stranded wire.
3. 66-Type blocks shall only be used for voice distribution cables. They are not permitted for any other installation (i.e. Intrusion Alarm system cabling).

E. Labels

All controls, function switches, etc. shall be clearly labeled on all equipment panels. This labeling shall be permanently etched or engraved. Neat nameplates engraved on two-layer plastic and affixed with epoxy glue may be used.

F. Flexible Wire

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Stranded wire and flexible cable shall be used for all connections to equipment not permanently attached to walls, floors or racks.

G. Conduits

1. Thin wall conduit shall be used for conduits 2" in diameter or less. For conduits over 2" in diameter, rigid steel galvanized shall be used. However, if it is necessary to use flex duct or plastic PVC, prior approval must be obtained in writing from ISD Project Manager and the next larger size flex duct or PVC shall be used. The flex shall be anchored at all bends and runs between bends must be straight and non-zigzagging through studding, joints, etc. If PVC conduit is to be used, use steel galvanized conduit for all bends over 15 degrees.
2. All communications conduit shall be one (1) inch inside diameter unless otherwise noted on the drawings.
3. A 1/4 inch nylon pull line shall be installed in each conduit. For conduits over two (2) inch in diameter, provide three-eighth (3/8) inch nylon pull line.
4. All conduits shall be clearly and permanently identified at all terminals or cabinets as to its terminating end.
5. Individual communications conduit runs shall not have bends more than the equivalent of two (2) 90-degree bends. The ISD Project Manager shall be consulted to determine the size, type and location of a pull box that must be installed. Pull boxes shall not be used for transitions in conduit runs.
6. The radius of any conduit bend shall not be less than ten (10) times the inside diameter of the conduit. Conduit bend radius for fiber optic cable shall have a minimum of twenty (20) times the O.D. of the cable.
7. Open ends of conduit shall be capped during construction to prevent the entrance of moisture or foreign materials. If moisture or foreign material is found at the time telephone and data cables are being installed, it shall be the responsibility of the contractor to thoroughly clean the conduit before the installation of any cable. The same shall be applied for walker-duct system.
8. All conduits shall be securely fastened in place and shall be free from burrs, defects or obstructions that could interfere with the installation of cables.
9. All conduits, unless otherwise noted on drawings, shall terminate on designated communications backboards either three (3) inches above the floor or six (6) inches below the ceiling.
10. All conduits shall be reamed and secured by locknuts where applicable. All conduits shall have bushings on both ends.

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11. All conduit not terminating in terminals, cabinets or outlet boxes shall be capped.
12. Conduit and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign objects or other defects.
13. Empty conduit/sleeves, unless noted otherwise, shall be run to and between respective communications rooms and/or closets, as shown on the plans.
14. All underground communications conduit shall be PVC and shall have a minimum earth cover of eighteen (18) inches, except where subject to vehicular traffic (including road right-of-way) the PVC conduit shall be concrete encased with a minimum of thirty (30) inches of earth cover. Telephone conduit may be buried in the same trench as power (480 Volts or less) if separated by a minimum of three (3) inches of concrete or twelve (12) inches of dirt.
15. The number of outlets included in each home run shall be specifically limited, as shown on the plans, and shall not be exceeded.
16. The ISD Project Manager is responsible for duct assignments and shall be contacted before the installation of cables in the conduits.
17. Any deviation from specifications or material substitution must be verified and approved in writing by the ISD Project Manager prior to use or implementation.

H. Outlets

All communications outlets shall be installed at the same height above the finished floor, unless otherwise noted on the drawings, as the electrical outlets, and shall be:

9. For single conduit entrance, 4 11/16 inches x 2 1/8 inches x 2 1/8 inches.
10. For two (2) or more conduit entrances, 4 11/16 inches x 4 11/16 inches x 2 1/8 inches.
11. Plaster rings are required. Tiger Box rings may not be used.
12. All core-drilled holes in counter tops shall be three (3) inches in diameter. A removable/reusable grommet and cover shall be installed.

4.2 FUNCTIONALITY TEST AND INSPECTION

The following functionality test and inspection deliverables are required where applicable to this project.

- a. The Communications Contractor shall, at a minimum, test all newly installed Cisco equipment and configuration using the County of Los Angeles LAN and IPT System

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Functionality and Cut-Over Test Plan developed prior to the test date. The Communications Contractor shall work with appropriate County staff to incorporate any required tests that are not already included in the attached sample. The County reserves the right to require additional tests not listed on the Test Plan. The Communications Contractor shall coordinate with Library Staff and the ISD Project Manager as to which tests are applicable. Library Staff and the ISD Project Manager shall be present and participate in all tests. Further, the Communications Contractor shall certify that the system is fully operational and fully functional.

- b. The County shall test all the newly installed equipment and verify that the system is fully operational and fully functional.
- c. The County shall accept the various systems installed and authorize payment to the Communications Contractor only **after the County has received all deliverables specified** and the Communications Contractor has fulfilled all obligations. This shall require, among other things, that the Communications Contractor:
 - i. Has provided all materials and services included in the Original (or Adjusted, if applicable) Bid Schedule of Materials & Services and all change orders.
 - ii. Has provided to the ISD Project Manager a final “As Built” Schedule of Materials & Services. This schedule is the net result of compilation of the Original (or Adjusted, if applicable) Bid Schedule of Materials and Services and all change orders and reflects the actual materials and services delivered to the County.
 - iii. Has tested all systems and provided test results to the ISD Project Manager indicating operability in accordance with the specifications.
 - iv. Has completely provided to the ISD Project Manager the documentation as required above.
 - v. Has cleared all deficiencies (Punch List items).
 - vi. Has turned over to the County any spare parts as specified.
 - vii. Has restored to original condition any damaged County premises, premise facilities, or equipment caused by Contractor personnel.
 - viii. Has cleared all material and debris from the work site and generally restored the work site to an orderly condition.
 - ix. Has removed all abandoned or non-working equipment, wiring and mountings from the TRs, ducts, and conduits.
 - x. Has contacted and made arrangements for the ISD Maintenance Supervisor to determine the disposition of existing equipment.
 - xi. Has dressed all cables, patch cables, and power cords after user migration.

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- xii. Has fire stopped required conduits and pathways.
- xiii. Has completed all required training sessions.
- d. Written procedures for the tests not included above shall be prepared by the contractor and submitted for review and approval by the ISD Project Manager and Library Communications Service Analyst at least 30 days prior to the test. The contractor shall supply personnel and, wherever required, auxiliary equipment for the test, without cost to the County.
- e. The County reserves the right to conduct, using contractor equipment and labor, a random re-test of up to five (5) percent of the cable plant to confirm documented results. Random re-testing, if performed, shall be at the expense of the contractor, using standard labor rates. Any failing cabling shall be re-tested and restored to a passing condition. In the event more than two (2) percent of the cable plant fails during re-test, the entire cable plant shall be re-tested and restored to a passing condition at no additional cost to the County.

4.3 TRAINING

- A. The contractor shall conduct training on each product in PART 2, except that the County may waive training on any products with which the County technicians and operators are already trained or for which training is inappropriate. The contractor shall furnish the services of a competent instructor for classroom and hands-on instruction in the operation and maintenance of the equipment supplied. The training shall be sufficient to qualify County technicians to maintain the equipment and systems.
- B. All training plans and materials shall be submitted by the contractor for review and approval by the ISD and Library Project Managers at least 30 days prior to acceptance tests.
- C. Classroom space for training will be provided by the County. All training classes shall be conducted on a mutually agreeable schedule prior to system acceptance.
- D. Operator training curriculum, if required, shall be comprehensive enough to enable County personnel receiving initial training to independently conduct training classes and instruct other operators. The contractor shall conduct training and furnish training materials for up to 20 students, as determined by County.
- E. Maintenance training. The Communications Contractor, if required, shall include in his maintenance training plan the recommended duration of maintenance training necessary to thoroughly cover the subject matter. This plan is subject to revision based upon County review.
- F. The contractor shall furnish training materials to each student, which they shall keep. The training material shall include the Systems Manual, less appendices. Maintenance training shall be conducted twice to provide training for up to 10 students in each session.

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- G. The contractor shall provide one formal, technical training seat for each product installed.
- H. Training shall be conducted on-site as follows:
 - End-User's Training. The Contractor shall provide IP telephone and Unity voice mail familiarization and usage classes for all newly assigned end-users at thirty (30) people or less per class. User guides reflecting County implanted features and access shall be provided for all end-users as follows:
 - a. Review how to use an IP phone
 - b. Review main IP Phone features (hold, transfer, conference, etc.)
 - c. Review how users can access the CM User Options page and use the various features (Speed dials, address book, etc.)
- I. The Contractor shall train Library staff and ISD technicians and analysts in programming of IP phone features. When feasible during the installation or configuration of any equipment that may be required, the Contractor will contact the County's Maintenance Supervisor and invite him/her to send a technician to accompany the Contractor's technician. This will permit the County's maintenance staff to become familiar with the equipment being installed and configured. This "over the shoulder" training should be conducted as may be deemed feasible to do so.
- J. Technician videoconference and projector training. The Contractor shall provide technician training for the Videoconference and projector systems. Technician training shall include troubleshooting and repair of the videoconference and projector systems down to the component level. Training shall also include overall system configuration, software programming, equipment and cabling interconnects and locations, purpose and function of each piece of equipment, troubleshooting and repair of each piece of equipment and troubleshooting and repair of the videoconference and projector systems as a whole. The Contractor shall furnish training and obtain manufacturer's certification for County technicians to install, maintain, troubleshoot and repair the videoconference and projector systems and equipment. The Contractor shall also provide training manuals detailing the training session concepts. Estimated number of technician training participants is ≤ 10 .

EXHIBIT J

Payment Schedule

(see attached)

PURCHASE PRICE AMORTIZATION TABLE

Purchase Date	Purchase Price	Lease Payment
30 days after Rent Commencement	10,860,532.00	
60 days after Rent Commencement	10,788,636.40	
90 days after Rent Commencement	10,818,350.33	(calculated prior to making scheduled annual lease payment)
120 days after Rent Commencement	7,124,817.96	3,644,172.23
150 days after Rent Commencement	7,145,074.42	
180 days after Rent Commencement	7,163,370.58	
210 days after Rent Commencement	7,183,627.05	
240 days after Rent Commencement	7,203,230.08	
270 days after Rent Commencement	7,223,486.54	
300 days after Rent Commencement	7,243,089.57	
330 days after Rent Commencement	7,263,346.03	
1 year after Rent Commencement	7,283,602.49	
1 year and 30 days after Rent Commencement	7,303,205.52	(calculated prior to making scheduled annual lease payment)
1 year and 60 days after Rent Commencement	3,567,958.00	3,644,172.23
1 year and 90 days after Rent Commencement	3,577,880.39	
1 year and 120 days after Rent Commencement	3,588,133.52	
1 year and 150 days after Rent Commencement	3,598,386.65	
1 year and 180 days after Rent Commencement	3,607,647.54	
1 year and 210 days after Rent Commencement	3,617,900.67	
1 year and 240 days after Rent Commencement	3,593,568.09	
1 year and 270 days after Rent Commencement	3,603,821.22	
1 year and 300 days after Rent Commencement	3,613,743.60	
1 year and 330 days after Rent Commencement	3,623,996.73	
2 years after Rent Commencement	3,634,249.87	
2 years and 30 days after Rent Commencement	3,644,172.25	(calculated prior to making scheduled annual lease payment)

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**COUNTY OF LOS ANGELES
CHIEF EXECUTIVE OFFICE
LEASE AGREEMENT**

**DEPARTMENT: Public Library , as Tenant
LANDLORD: Griffin/Swinerton, a joint venture**

5040 West Avenue M-2, Lancaster, County of Los Angeles, CA 93536

May 26, 2015

ATTACHMENT B

**PUBLIC LIBRARY:
QUARTZ HILL LIBRARY PROJECT
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM
APPROVE PROJECT AND LEASE AGREEMENT**

I. PROJECT SCHEDULE

Project Activity	Scheduled Completion Date
Construction Documents	4/10/2015*
Jurisdictional Approvals	5/22/2015
Construction Start	6/15/2015
Substantial Completion	8/26/2016
Final Acceptance	11/28/2016

* Actual completion date.

May 26, 2015

ATTACHMENT C

**PUBLIC LIBRARY:
QUARTZ HILL LIBRARY PROJECT
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM
APPROVE PROJECT AND LEASE AGREEMENT**

MITIGATED NEGATIVE DECLARATION

(SEE ATTACHED)

Quartz Hill Library Project

Final Initial Study/Mitigated Negative Declaration



PREPARED FOR:



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April 2015

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Chapter 1

Clarifications and Revisions to the Draft Initial Study/Mitigated Negative Declaration

Overview

The County of Los Angeles (County), as the lead agency under the California Environmental Quality Act (CEQA), prepared an initial study (IS) and mitigated negative declaration (MND) to evaluate the potential environmental effects associated with the Quartz Hill Library Project (proposed project), which would be located on a 1.75-acre undeveloped parcel in an unincorporated community in the Antelope Valley region of northern Los Angeles County. The Draft IS/MND and the Notice of Intent to Adopt the IS/MND were circulated to public agencies and interested parties on January 9, 2015, for a 30-day public review period that ended on February 9, 2015. Two comment letters were received during the public review. All comments are addressed in Chapter 2 of this Final IS/MND.

The clarifications and revisions presented in this chapter are intended to update the Draft IS/MND to reflect minor modifications to the revised project. These revisions effectively update the descriptions and analysis provided in the Draft MND. Therefore, this clarifications and revisions document, when considered in combination with the Draft IS/MND, serves as part of the Final IS/MND to be presented to the County Board of Supervisors along with the comment/response chapter, for consideration before adoption of the MND and approval of the project.

None of the comments raised or changes made to the project affect the conclusions or determinations contained within the Draft IS/MND that was circulated to the public. These modifications do not alter the conclusions of the environmental analysis and do not constitute “substantial revisions” within the meaning of State CEQA Guidelines Section 15073.5, which requires that a lead agency recirculate a MND when a document is substantially revised after issuance of the public notice of availability but prior to its adoption. State CEQA Guidelines Section 15073.5(b) defines a “substantial revision” to include identification of a new, avoidable significant effect that requires new mitigation measures to reduce an impact to a less-than-significant level or a determination that a proposed mitigation measure will not reduce the potential impacts to less-than-significant levels and new measures or revisions are thus required. The revisions to the IS/MND do not identify a new, avoidable significant effect that requires new mitigation. The severity of an impact has not increased, and new mitigation measures are not required. Revisions to the draft IS/MND have resulted from comments received during the 30-day public review or were deemed necessary for purposes of clarifying or amplifying information provided in the Draft IS/MND. Per State CEQA Guidelines Section 15073.5 (c), recirculation of an MND is not required when the project is revised in response to comments on project impacts identified in the Draft MND, which are not new, avoidable significant impacts, or new information is added to merely clarify, amplify, or make insignificant modifications to the analysis. Thus, recirculation of the IS/MND is not required pursuant to Section 15073.5(a), (b), and (c) of the State CEQA Guidelines.

As described under the Noise section in this chapter, Mitigation Measure MM NOI-1 has been updated in response to the update to the construction noise analysis, which now uses the mobile construction equipment noise standards as compared to the stationary construction equipment noise standards used in the Draft IS/MND. In addition, an update to MM NOI-3 is related to the construction schedule of the permanent operations noise barrier with a proposed flexibility of building it prior to the start of project construction so that it may comprise part of the construction noise barrier discussed under MM NOI-1 or at a later time once project construction has commenced. The primary update to MM NOI-1 involves a decrease in the height of the construction noise barrier proposed along the east property line down to 6- to 7-feet from the previously proposed 14- to 20-foot minimum temporary construction noise barrier in the Draft IS/MND, and a reduction in overall length of the construction noise barrier compared to what was proposed in the Draft IS/MND. This change in height and length of the construction noise barrier along the east property line and proposed construction schedule flexibility for the permanent operations noise barrier, does not constitute “deleting” or “substituting” a mitigation measure that has been identified as “infeasible or otherwise undesirable”, as described in the CEQA Guidelines Section 15074.1. Rather as described above, it serves as an update to a mitigation measure in response to revisions to the Draft IS/MND noise analysis for purposes of clarifying information by using the more appropriate construction noise standards. Thus, holding a public hearing on the matter or recirculation of the MND is not required per Sections 15073.5 (a), (b), and (c) and 15074.1 of the State CEQA Guidelines.

Additions to the Draft IS/MND are indicated as underlined text, and deletions are indicated as ~~strikeout~~ text. The modifications are indicated with the page number from the Draft IS/MND and include the text that they modify. This chapter is intended to become part of the MND for the project, which will be submitted to the Los Angeles County Board of Supervisors for their consideration.

Contents

Page ii, Appendices

Appendix G, Limited Phase II Environmental Services

Hazards and Hazardous Materials

Page 3-68, First Paragraph

This section discusses existing conditions related to hazardous materials in the project area. The information provided herein is based on the Phase I Environmental Site Assessment prepared by Earth Systems Southern California (ESSC) in July 2014 (Appendix D). A subsequent Limited Phase II Environmental Services Report was completed after the public review period per a comment received from the County of Los Angeles Fire Department’s Health Hazardous Materials Division to test a minimum of six surficial soil samples for organochlorine compounds. The results of the Phase II Report have been incorporated in the analysis in the appropriate places.

Page 3-68, Fourth Paragraph

A field reconnaissance survey of the project site was conducted by ESSC in July 2014. Regulated quantities of hazardous materials, aboveground storage tanks, underground storage tanks, and 55-gallon drums were not observed on the project site. It is unlikely that past land uses involved the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products. Only one recognized environmental condition (REC) was identified, resulting from the site's past use as an orchard. Although it is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during that time, the results of a subsequent Limited Phase II Environmental Services Report (Appendix G), based on six near-surface soil samples taken from the site and compared to the California Human Health Screening Levels, indicated that no organochlorine compounds are present in the soils and all metal sample concentrations in the sampled soils are within naturally occurring levels for soils in the project area. Thus, no further environmental investigations are required at this time.~~it is not known if any residual chemicals remain in the soil. However, because the project site has remained vacant for approximately 78 years and these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action.~~

Page 3-74, First Paragraph

The only REC identified for the project site is related to the site's past use as an orchard. Although it is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during that time, the results of a subsequent Limited Phase II Environmental Services Report (Appendix G), based on six near-surface soil samples taken from the site and compared to the California Human Health Screening Levels, indicated that no organochlorine compounds are present in the soils and all metal sample concentrations in the sampled soils are within naturally occurring levels for soils in the project area. Thus, no further environmental investigations are required at this time.~~it is not known if any residual chemicals remain in the soil. However, because the project site has remained vacant for approximately 78 years and these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action.~~ In the unlikely event that odiferous, stained, or discolored soil is encountered during construction, mitigation measure HAZ-1 would be implemented to ensure appropriate identification and handling of potentially hazardous materials.

Page 3-75, Third Paragraph

However, because of the project site's use as an orchard in 1928), the Phase I Environmental Site Assessment identified one REC on the project site related to the possible application of agricultural chemicals (insecticides, pesticides, and/or herbicides) during that time. The results of a subsequent Limited Phase II Environmental Services Report (Appendix G), based on six near-surface soil samples taken from the site and compared to the California Human Health Screening Levels, indicated that no organochlorine compounds are present in the soils and all metal sample concentrations in the sampled soils are within naturally occurring levels for soils in the project area. Thus, no further environmental investigations are required at this time. It is not known if any residual chemicals remain in the soil; however, the project site has remained undeveloped land for approximately 78 years. Because these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action.~~In the unlikely event that odiferous, stained, or discolored soil is encountered during construction, mitigation measure HAZ-1 has would be implemented to ensure appropriate identification and handling of potentially hazardous materials.~~

Page 3-76, Second Paragraph

However, one REC was identified on the project site because of its past use as an orchard. The results of a subsequent Limited Phase II Environmental Services Report (Appendix G), based on six near-surface soil samples taken from the site and compared to the California Human Health Screening Levels, indicated that no organochlorine compounds are present in the soils and all metal sample concentrations in the sampled soils are within naturally occurring levels for soils in the project area. Thus, no further environmental investigations are required at this time.

Any potentially hazardous materials remaining on the project site are expected to be discovered during the construction phase and remediated per the requirements of mitigation measure HAZ-1.

Page 3-78, Mitigation Measure MM-HAZ-1

HAZ-1: If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following:

- Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous materials.
- The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel.
- Analytical results shall be compared to EPA's Regional Screening Levels (RSLs) for residential developments¹ and the California Human Health Screening Levels (CHHSLs). RSLs are screening levels developed by EPA for common environmental pollutants.

Noise

The January 2015 draft IS/MND prepared for the Quartz Hill Library Project referenced a construction noise significance threshold of 70 dBA for stationary construction equipment and a land use designation of "Semi-residential/Commercial," as provided in Section 12.08.440 of the County of Los Angeles Noise Ordinance.

Since preparation of the draft IS/MND, the County has determined that the mobile construction equipment threshold of 85 dBA for a land use designation of "Semi-residential/Commercial" is the more appropriate significance threshold for construction noise impacts analysis in the final IS/MND.

Use of the mobile standard acknowledges that heavy construction equipment is anticipated to regularly move around the site—sometimes at one location, sometimes at another—and is unlikely to generate maximum noise levels from discrete locations on the site for extended periods of time. Thus, the construction noise impacts analysis in the draft IS/MND has been updated to reflect the application of the 85 dBA mobile equipment threshold. These changes are presented below.

Page 3-108, Third Paragraph

The construction noise limit for the project would be 85 dBA L_{max} (maximum noise level) based on the County's standard for permitted maximum noise levels depend on the duration of use for each piece of construction equipment and the land use(s) in the area. "Mmobile Equipment" operating in

¹ Residential being the more conservative of the two land uses considered for RSLs, the other being industrial.

a semi-residential/commercial area (surrounding properties in the area are noise standards govern noise levels from equipment that operates on-site for less than 10 days, and “Stationary Equipment” noise standards govern noise levels from equipment that operates on-site for 10 days or more. Scheduling information for the project indicates that construction will last a total of 13 months, with overlapping phases, each lasting between 6 and 30 weeks; therefore, it is anticipated that most, if not all, of the equipment used will be on-site for at least 10 days, and the “Stationary Equipment” noise standards would provide the appropriate thresholds of significance. Because the project site is in an area with a mix of residential, commercial, and industrial properties), the relevant land use designation is “Semi-residential/Commercial” and the resulting noise limit would be 70 dBA L_{max} (maximum noise level). This standard would apply at the façade of any residential building.

Page 3-111, Second Paragraph

As noted previously, the applicable threshold of significance, based on the County’s construction noise standards, is ~~70~~ 85 dBA L_{max} at the adjacent residential buildings. Referring to Table 3-15, the following phases are predicted to comply with this noise standard: on- and off-site utilities and improvements; structure and framing; rough-ins, exterior skin, and roofing; interior finishes; and, fixtures, furnishings, and equipment.

Page 3-111, Third Paragraph

The following phases are predicted to exceed the standard of ~~70~~ 85 dBA L_{max}: grading, foundations, and slab-on-grade; ~~on- and off-site utilities and improvements; structure and framing;~~ and, exterior hardscape and landscape. These exceedances of the County’s noise standards would be significant impacts; however, with the implementation of the construction noise control measures provided in MM-NOI-1, impacts would be reduced to less than significant.

Page 3-111, Fourth Paragraph

Referring to the figure provided in Appendix E (*Estimated Mitigated Noise Levels at Nearby Sensitive Receptors Due to Project Construction*), implementation of MM-NOI-1 is anticipated to reduce construction noise levels by ~~11 to 19~~ 11 to 19 dB at the closest homes to less than, ~~resulting in worst-case noise levels of 65 to 70~~ 85 dBA L_{max}, which would be in compliance with the County’s construction noise threshold of ~~70~~ 85 dBA L_{max}.

Page 3-116, Mitigation Measure MM-NOI-1

The construction contractor shall implement the following measures to comply with the County’s construction noise threshold of ~~70~~ 85 dBA L_{max} defined by the County’s municipal code. ~~The construction contractor shall design mitigation to attenuate noise levels, which would include but not be limited to:~~

- Prior to the start of any construction activity on the project site, a ~~temporary~~ noise barrier shall be erected along a portions of the east, south, and west property lines of the project site, as illustrated in Figure 3-12 and ~~as~~ described below. The barrier shall remain in place until all exterior construction activity is completed.

- The north portion of the barrier shall have a minimum length height of 7 feet and shall extend from the barrier shall be as illustrated in Figure 3-12 at least 25 feet north of the residential property at 41837 50th Street to at least 25 feet south of the residential property.
- The remainder (i.e., the south portion) of the barrier along the east side of the property shall have a minimum height of 6 be at least 14 feet and shall extend to the south property line of the project site. high where it occurs along the west and south property lines and at least 20 feet high where it occurs along the east property line.
- All barrier heights are relative to the ground elevation at the property line.
- The barrier shall be constructed from one or more of the materials described below. The barrier shall be continuous, without gaps between different materials or at the base of the barrier.
 - Concrete block (note that the permanent block wall as required under MM-NOI-3 below to mitigate on-site noise impacts from project operations could be built prior to the start of project construction in order to form part of this construction noise barrier.)
 - Acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum sound transmission class rating of 28 and a minimum noise reduction coefficient of 0.80 and be firmly secured to the framework, with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 4 inches at seams and taped and/or closed with hook-and-loop fasteners (i.e., Velcro®) so that no gaps exist. The largest blankets available should be used to minimize the number of seams. ~~The blankets shall be draped to the ground to eliminate any gaps at the base of the barrier.~~
 - Plywood at least ¾ inch thick. The barrier shall be constructed so that there are no gaps between adjacent sheets of plywood.
- Construction activities shall be limited to between 7 a.m. and 7 p.m. Monday through Friday and shall not occur at any time on weekends or legal holidays. Construction personnel shall not be permitted on the job site, and material or equipment deliveries and collections shall not be permitted outside of these hours.
- All ~~mobile and fixed noise producing~~ construction equipment used on the project site that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity.
- All construction equipment shall be properly maintained. (Poor maintenance of equipment typically causes excessive noise levels.)
- All construction equipment, ~~stationary and mobile,~~ shall be equipped with properly operating and maintained mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specification.
- All ~~noisy~~ equipment shall be operated only when necessary and shall be switched off when not in use.

- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.)
- Storage, staging, parking, and maintenance areas on the project site shall be located as far away as possible from noise-sensitive receptors.
- ~~Stationary noise sources,~~ Construction equipment, such as generators and compressors, on the project site shall be positioned as far away as possible from noise-sensitive receptors.
- ~~The quietest type of construction equipment available shall be used whenever possible. (Newer equipment is generally quieter than older equipment. Electrically powered equipment is typically quieter than diesel or gasoline powered equipment, and hydraulically powered equipment is typically quieter than pneumatic equipment.)~~
- Construction equipment shall be stored on the project site while in use whenever possible. This will eliminate noise associated with repeated transportation of the equipment to and from the site.
- Haul roads shall not be designated through noise-sensitive areas whenever possible.

Page 3-117, Figure 3-12



K:\In\GIS\Projects\LA\DPW\00153_14\mapdoc\Fig3-12_Temp_Noise_Barrier.mxd Date: 9/5/2014 2:49:01



Figure 3-12
Location and Height of Temporary Construction Noise Barrier per MM-NOI-1
Los Angeles County Quartz Hill Library



Figure 3-12
Location and Height of Construction Noise Barrier per MM-NOI-1
Los Angeles County Quartz Hill Library

Page 3-118, Mitigation Measure MM-NOI-3

MM-NOI-3: A permanent noise barrier shall be constructed between the project site and the adjacent residential properties. A 6-foot-high (minimum) block wall shall be constructed at the south and east property line of the project site, adjacent to the neighboring residential properties, as illustrated in Figure 3-13. (Note that this block wall could be built prior to the start of project construction in order to form part of the construction noise barrier required under MM-NOI-1 as discussed above.)

Utilities and Service Systems**Page 3-153, 1st and 2nd Paragraphs**

Wastewater management for the Antelope Valley is provided by LACSD. Wastewater generated in Quartz Hill is conveyed to, and treated by, ~~two facilities~~, the Lancaster Water Reclamation Plant (District 14) ~~and the Palmdale Water Reclamation Plant (District 20)~~. The Lancaster Water Reclamation Plant, which would serve the project site, provides tertiary treatment for up to 18 million gallons per day (mgd) of wastewater and processes an average flow of 13.7 mgd (LACSD 2014a).

The Lancaster Water Reclamation Plant has recently undergone upgrades and expansion. The major components of the project included upgraded wastewater treatment facilities, recycled water management facilities storage and distribution, and municipal agricultural reuse.

Page 3-154, 4th Paragraph and Page 3-155, 1st Paragraph

The project area is outside the jurisdictional boundaries of the LACSD and would require annexation into District No. 14 before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey the wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled 14 13.7 mgd (LACSD 2014a, 2014b).

Page 3-156, 2nd Paragraph

Less-than-significant impact. Because the project area is outside the jurisdictional boundaries of the LACSD, operation of the proposed project would require annexation into District No. 14 and new connections to the LACSD sanitary sewer system before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system would be installed in compliance with County regulations and annexation procedures. The generation of wastewater at the project site would increase compared with existing conditions; however, it would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities.

Using a wastewater generation factor of ~~150~~ 100 gallons per day (gpd)/1,000 square feet, operation of the proposed project would be expected to generate ~~1,875~~ 1,250 gpd of wastewater.² This wastewater would be primarily in the form of sanitary waste and would be discharged into a

² Estimated wastewater assumptions, calculation, and source: A wastewater generation factor ~~for Office~~ provided by the LACSD was used for this calculation; a wastewater generation factor specific to libraries was not available (~~150~~ 100 gpd/1,000 square feet)(12,500 square feet) = ~~1,875~~ 1,250 gpd (County of Los Angeles 2012).

local sewer line, which is not maintained by the LACSD, for conveyance to the LACSD Trunk “F” Relief Section 3 Trunk Sewer, located in Avenue L at 50th Street West. This 18-inch-diameter trunk sewer had a design capacity of 2.9 mgd and conveyed a peak flow of 1.2 mgd when last measured in 2011.

The LACSD sanitary sewer system would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled of 13.7 ~~14~~ mgd (LACSD 2014a, 2014b).

Page 3-158, 3rd Paragraph

Less-than-significant impact. The proposed project was designed to achieve a LEED Silver rating. It would include features to minimize the generation of wastewater, such as low-flow water fixtures. Operation of the proposed project would be expected to generate approximately ~~1,875~~ 1,250 gpd of wastewater. The project area is outside the jurisdictional boundaries of the LACSD and would require annexation into District No. 14 before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled 14 ~~13.7~~ mgd (LACSD 2014a, 2014b).

Page 3-160, Table 3-32. Generation of Solid Waste and Wastewater from Related Projects

Description	Address/Location	Size	Solid Waste	Wastewater
Single-family lots	4748 West Avenue M-12	Two proposed single-family lots	4.05 tons per year ^a	410.2 <u>520</u> gallons per day ^{c, d, f}
Retail, carwash, and automotive service station (no gas)	Northeast corner of 50 th Street West and West Avenue L-2	18,995 square feet for retail, 2,500 square feet for carwash, 7,575 square feet for automotive service station	43.32 tons per year ^b	50.2 <u>9,407</u> gallons per day ^{c, g}
General office for a public utility service center	Southwest corner of 50 th Street West and West Avenue N	7,944 square feet	7.89 tons per year ^b	1,191.6 <u>1,588.8</u> gallons per day ^e
Single-family lots	South of 47 th Street between Avenue M and Quartz Hill Road	Nine proposed single-family lots	18.22 tons per year ^a	1,846.05 <u>2,340</u> gallons per day ^{c, d, f}
Total			73.48 tons per year	3,498.05 <u>13,855.8</u> gallons per day

- ^a CalRecycle 2013b.
- ^b CalRecycle 2013c.
- ^c LACSD, 2015.
- ^e ~~Ellis 2004.~~
- ^d ~~U.S. Census Bureau 2010.~~
- ^e ~~County of Los Angeles 2012.~~
- ^f ~~Assumed 2.93 members per household.~~
- ^g ~~Assumed five cars per day.~~

Page 3-161, 3rd Paragraph

The related projects would be served by the Lancaster Water Reclamation Plant (District 14) and/or the Palmdale Water Reclamation Plant (District 20). As discussed above, the Lancaster Water Reclamation Plant provides tertiary treatment for up to 18 mgd of wastewater; average flows of treated wastewater in 2013 totaled approximately 14 mgd (LACSD 2014a, 2014b). ~~The Palmdale Water Reclamation Plant has a capacity of 12 mgd of wastewater; average flows of treated wastewater in 2013 totaled 8.7 mgd (LACSD 2014b).~~ The residual treatment capacities capacity of the Lancaster Water Reclamation Plant and the Palmdale Water Reclamation Plant, which is approximately 4 mgd and 3 mgd, respectively, would be more than adequate to serve the related projects and the proposed project. Therefore, it is not anticipated that the related projects would result in significant cumulative impacts with respect to wastewater treatment and infrastructure.

References

Page 4-5, VIII. Hazards and Hazardous Materials

Earth Systems Southern California. 2015. *Limited Phase II Environmental Services, APN 3101-013-058, Avenue M-2, West of 50th Street West, Quartz Hill, Los Angeles County, California. PL-06948-04. March.*

Appendix G

Limited Phase II Environmental Services

LIMITED PHASE II
ENVIRONMENTAL SERVICES

Proposed Los Angeles County Library
APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California
PL-06948-04

Prepared For

GRIFFIN / SWINERTON VENTURE

March 31, 2015

Prepared by
Earth Systems
Southern California
1024 West Avenue M-4
Palmdale, California 93551
(661) 948-7538
FAX (661) 948-7963



March 31, 2015

PL-06948-04

Griffin/Swinerton Venture
c/o Griffin Structures, Inc.
385 Second Street
Laguna Beach, California 92651

Attention: Mr. Justin DiRico

Subject: **Limited Phase II Environmental Services**
Proposed County of Los Angeles Library
APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California

Presented herewith is Earth Systems Southern California's (Earth System's) Limited Phase II Environmental Services Report prepared, as authorized, for the proposed Los Angeles County Library to be constructed on an approximate 1.75-acre site located on the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in Quartz Hill, Los Angeles County, California. Earth Systems Southern California appreciates this opportunity to be of service. If you need clarification of the information contained in this report, or if we can be of additional service, please contact the undersigned.

Respectfully submitted,

Earth Systems
Southern California

Bruce A. Hick
Project Manager



3-31-2015

Distribution: 1 – e-mail: jdirico@griffinholding.net

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Appendix A Laboratory Data Report and Chain-of-Custody Document

**LIMITED PHASE II ENVIRONMENTAL SERVICES
PROPOSED LOS ANGELES COUNTY LIBRARY
APN 3101-013-058
AVENUE M-2, WEST OF 50TH STREET WEST
QUARTZ HILL, LOS ANGELES COUNTY**

INTRODUCTION

This report presents the findings of a Limited Phase II Environmental Service conducted for the proposed Los Angeles County Library to be constructed on an approximate 1.75-acre site located on the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in Quartz Hill, Los Angeles County, California (see attached Vicinity Map, Plate I). A Phase I Environmental Site Assessment was conducted for this property by Earth Systems in July, 2014. The following environmental condition was identified:

1. Historical research conducted for this study indicates that the property consisted of an orchard in 1928. It is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during this time period. It is not known if any residual chemicals remain in the soil. These compounds tend to biodegrade over time, and it is Earth Systems' experience that residual concentrations of these chemicals found at similar sites are rarely discovered at levels requiring regulatory action. The subject property has consisted of vacant undeveloped land for approximately 78 years. If this is a concern, soil sampling and laboratory analysis can be conducted to determine the actual presence or absence of agricultural chemicals in the soils on the property. Some counties and/or cities require soil testing on current and/or former agricultural properties prior to approving development.

The intent of this limited assessment was to collect and analyze soil samples from the soils on the property, to ensure that the levels of pesticides remaining in the surface soils of the property are within acceptable regulatory limits. Earth System's services were performed in accordance with Earth System's proposal dated March 5, 2015. The scope of services consisted of collecting twelve (12) soil samples from the site, laboratory analysis of six (6) of the samples for Organochlorine pesticides and selected metals, and preparation of this written report presenting Earth System's findings, conclusions, and recommendations.

SITE LOCATION AND DESCRIPTION

The subject property consists of approximately 1.75 acres of land on the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in the community of Quartz Hill, Los Angeles County, California (see attached Vicinity Map, Plate I). The property is identified as Assessor's Parcel Number 3101-013-058. Access to the property is made from Avenue M-2, a paved improved street located adjacent to the northern boundary of the site. The property currently consists of vacant land. Land use in the immediate vicinity of the property consists of a mix of vacant, residential and commercial land.

The property is identified as a portion of the northeast quarter Section 2, Township 6 North, Range 13 West, San Bernardino Base Meridian. The elevation of the property is approximately 2,510 feet above sea level. The property is relatively flat, with an overall gentle downward gradient to the north (U.S.G.S. Topographic Map, Lancaster West Quadrangle, 1974).

SOIL SAMPLING

In general conformance with the guidelines presented in the referenced State of California Department of Toxic Substance Control (DTSC) document dated August 26, 2002, twelve (12) soil samples were collected from the property on March 17, 2015, in the approximate locations shown on the Sample Location Plan, Plate II. Six (6) of the samples were collected from the near surface soils (0 to 6 inches below the ground surface) and six (6) from the subsurface

(2 to 3 feet in depth). All samples were obtained using hand-auger sampling equipment. The soil samples were placed in clean laboratory supplied glass jars. Two sample jars were filled at each sample location. Following sample collection, the sample jars were sealed, labeled, and placed in an ice chest for delivery to a California Department of Health Services (DOHS) certified hazardous waste testing laboratory.

Chain-of-custody procedures were utilized for the soil samples collected to ensure sample integrity and to document sample possession from the time of collection to the final destination. The near surface soil samples (0 to 6 inches below the ground surface) were delivered under chain-of-custody documentation to the DOHS certified hazardous waste testing laboratory at Test America, located at 17461 Derian Avenue, Suite 100, Irvine, California, 92614. The subsurface soil samples (2 to 3 feet below the ground surface) are currently be stored as the near surface soil sample test results indicate no significant results.

LABORATORY TESTING

The six (6) near surface soil samples (0 to 6 inches below the ground surface) were analyzed for Organochlorine pesticides (EPA Test Method EPA 8081A), California Title 22 Metals (CAM 17 metals) using EPA Test Method EPA 6010B and EPA Test Method 7471A for Mercury. Laboratory data, laboratory quality control procedures, and chain-of-custody documents for the soil sampling performed for this report are included in Appendix A of this report.

DISCUSSIONS

Laboratory test results for the current soil sampling indicate no presence of Organochlorine pesticides in the sampled soils above the reporting limit. Laboratory test results indicate all metal sample concentrations in the sampled soils appear to be within naturally occurring levels for soils in the project area (see attached reference).

CONCLUSIONS

This report documents the environmental soil sample collection activities, along with the results of a Limited Phase II report, for the referenced property. The laboratory results from the samples collected indicate no presence of Organochlorine pesticides of the soils tested and all metal sample concentrations in the sampled soils appear to be within naturally occurring levels for soils in the project area. Based upon these test results, no further environmental investigation of the subject property appears warranted at this time.

LIMITATIONS

This report has been prepared for the exclusive use of Griffin/Swinerton Venture, as it pertains to the property described herein. The conclusions in this report are opinions, based on readily available information obtained to date, within the scope of work authorized by Griffin/Swinerton Venture. Use of, or reliance on the information and opinions contained in this report by other parties without first consulting this office is at those parties' own risk.

The results contained in this report are based upon the information acquired during this assessment. It is possible that variations exist beyond or between points observed during the course of this assessment. Changes in observed conditions could occur due to contamination migration, variations in rainfall, temperature, and/or other factors not apparent at the time of the field evaluation. No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property.

Earth Systems Southern California has strived to prepare this report in accordance with generally accepted geologic/environmental practices in this community. No warranty or guarantee is expressed or implied.

CLOSURE

Earth Systems Southern California trusts this report is sufficient at this time and meets your current needs. Earth Systems Southern California appreciates the opportunity to provide professional environmental services for this project. If you have any questions regarding this information or require additional studies, please contact this office at your convenience.

Respectfully submitted,

**Earth Systems
Southern California**



Bruce A. Hick, C.E. #45784
Project Manager



3-31-2015

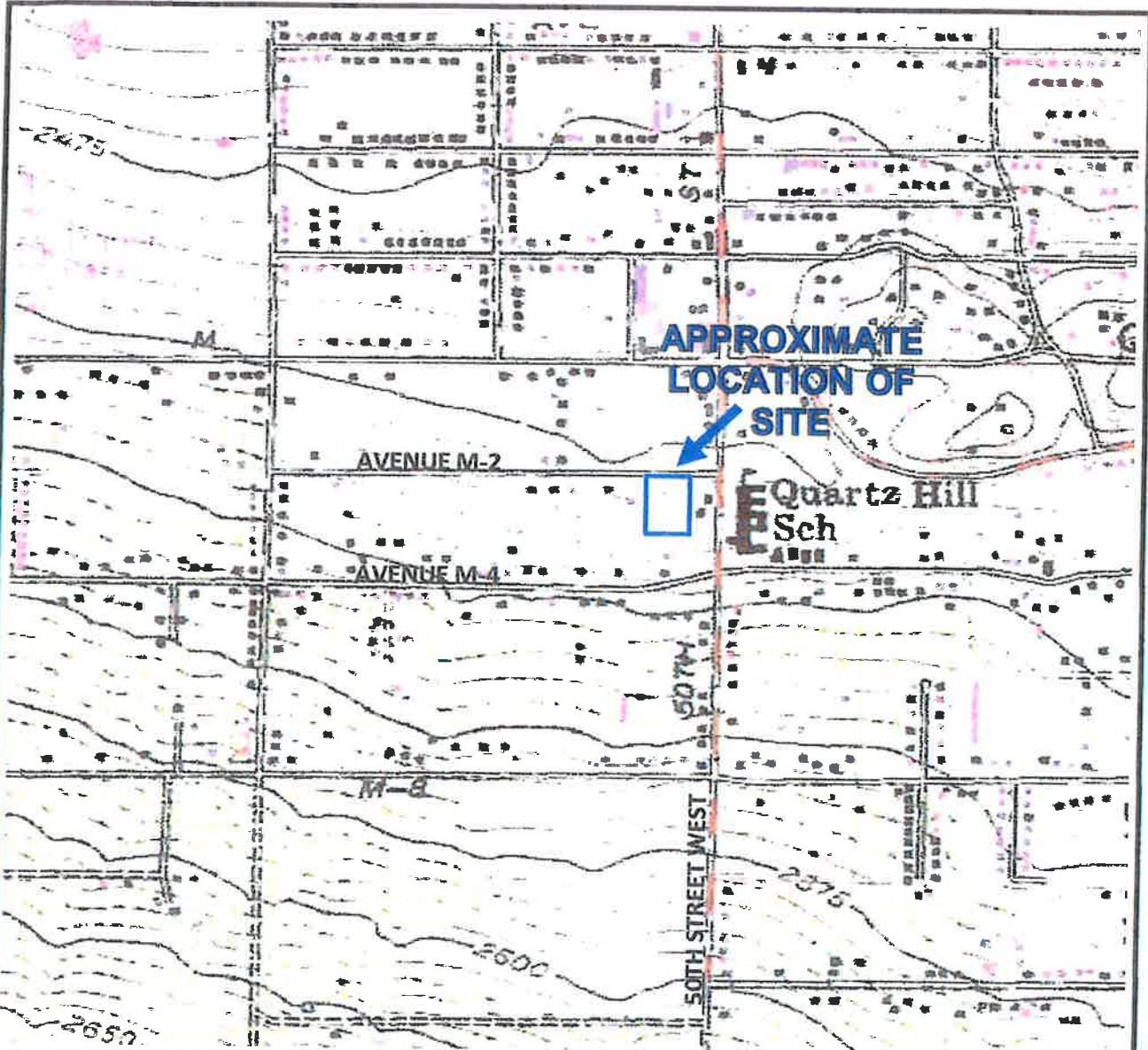
REFERENCES

Phase I Environmental Site Assessment, "APN 3101-013-058, Avenue M-2, West of 50th Street West, Quartz Hill, Los Angeles County, California" dated July 29, 2014 (project number PL-06648-01) by Earth Systems Southern California

"Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision)", California Department of Toxic Substances Control, California Environmental Protection Agency, dated August 26, 2002

"Background Concentrations of Trace and Major Elements in California Soils", Kearney Foundation of Soil Science Division of Agricultural and Natural Resources University of California, Bradford, G.R., Chang, A.C., Page, A.L., Bakhtar, D., Frampton, J.A., and Wright, H., 1996, dated March 1996, 51 pp.

U.S.G.S. Topographic Map, Lancaster West Quadrangle, Photorevised 1974



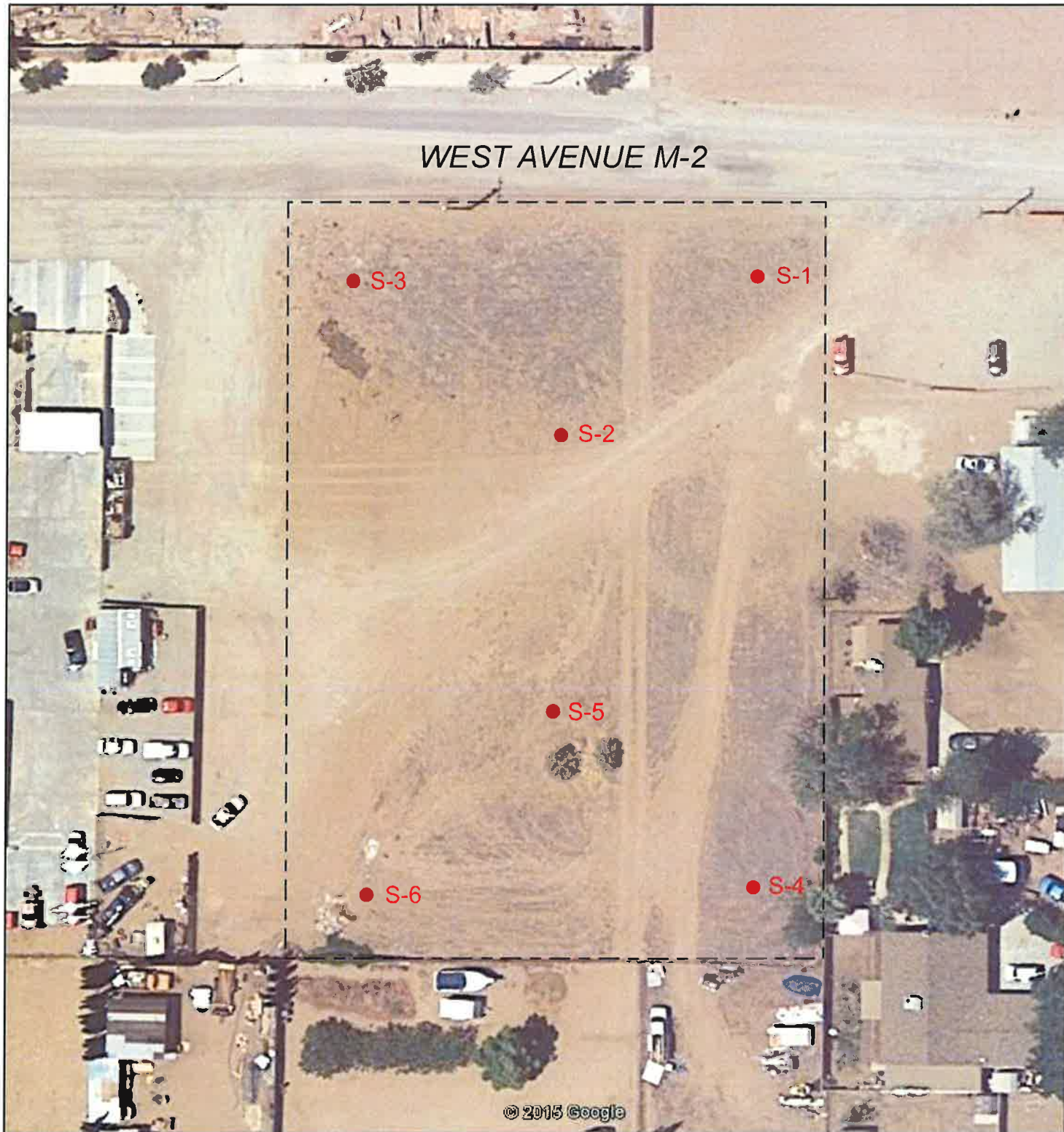
SOURCE: USGS Topographic Map, 7.5-Minute Lancaster West, California Quadrangle, 1958, Photorevised 1974



APPROXIMATE SCALE: 1" = 1,000'

PLATE I

VICINITY MAP	
APN 3101-013-058 AVENUE M-2, WEST OF 50TH STREET WEST QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA	
EARTH SYSTEMS SOUTHERN CALIFORNIA	
MARCH 31, 2015	PL-06948-04



SOURCE: GOOGLE EARTH, 2015

PLATE II

● S-1 DENOTES NUMBER AND APPROXIMATE LOCATION OF SOIL SAMPLE



NOT TO SCALE

SAMPLE LOCATION PLAN

APN 3101-013-058
 AVENUE M-2, WEST OF 50TH STREET WEST
 QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA



Earth Systems
Southern California

3-31-2015

PL-06948-04

-3. Regulatory Levels and Naturally Occuring Levels

Parameters of Concern	Naturally Occuring Levels [a]		Regulatory Limits	
	U.S. Range (mg/Kg) [b]	(Western U.S. Mean) (mg/Kg)	STLC (mg/L) [b]	TTLIC (mg/Kg)
Antimony	<150-500 (Eastern U.S.)	-	15	500
Arsenic	<0.2-97	(61)	5	500
Barium	70-5,000	(560)	100	10,000
Beryllium	<1-7	(0.6)	0.75	75
Cadmium	<1-10	(1)	1	100
Chromium VI	-	-	5	500
Chromium III & Total Chromium	38	(3-1,500)	5	2,500
Cobalt	8	(3-50)	80	8,000
Copper	21	(2-300)	25	2,500
Lead	18	(<7-700)	5	1,000
Mercury	0.055	(<0.1-4.6)	0.2	20
Molybdenum	3	(<3-7)	350	3,500
Nickel	16	(<3-700)	20	2,000
Selenium	0.25	(<0.1-4.3)	1	100
Silver	<0.5	(<0.5-5)	5	500
Thallium	-	-	7	700
Vanadium	66	(7-500)	24	2,400
Zinc	51	(10-2,000)	250	5,000

[a] - Conner and Shacklette, 1975.

[b] - mg/Kg=milligrams per Kilogram, mg/L=milligrams per Liter.

1 ppm = 1000 ppb

Appendix A

Laboratory Data Report and Chain of Custody Document

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-104887-1

Client Project/Site: Los Angeles County Library

For:

Earth Systems Southern California

1024 West Avenue M-4

Palmdale, California 93551

Attn: Bruce Hick



Authorized for release by:

4/1/2015 10:51:48 AM

Lena Davidkova, Project Manager II

(949)261-1022

lena.davidkova@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-104887-1	1	Solid	03/17/15 14:25	03/19/15 10:00
440-104887-2	2	Solid	03/17/15 14:32	03/19/15 10:00
440-104887-3	3	Solid	03/17/15 14:46	03/19/15 10:00
440-104887-4	4	Solid	03/17/15 14:57	03/19/15 10:00
440-104887-5	5	Solid	03/17/15 15:14	03/19/15 10:00
440-104887-6	6	Solid	03/17/15 15:29	03/19/15 10:00



Case Narrative

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Job ID: 440-104887-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-104887-1

Comments

No additional comments.

Receipt

The samples were received on 3/19/2015 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3,8° C.

GC Semi VOA

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 246101 recovered above the upper control limit for 4,4 DDD and DDE, delta BHC, and Endrin. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 440-246101/16), 1 (440-104887-1).

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 246141 recovered above the upper control limit for 4,4 DDT and Methoxychlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVRT 440-246141/8), 2 (440-104887-2), 3 (440-104887-3), 4 (440-104887-4), 5 (440-104887-5), 6 (440-104887-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



Client Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 1

Lab Sample ID: 440-104887-1

Date Collected: 03/17/15 14:25

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
4,4'-DDE	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
4,4'-DDT	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Aldrin	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
alpha-BHC	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
beta-BHC	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Chlordane (technical)	ND		49		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
delta-BHC	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Dieldrin	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endosulfan I	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endosulfan II	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endosulfan sulfate	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endrin	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endrin aldehyde	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Endrin ketone	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
gamma-BHC (Lindane)	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Heptachlor	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Heptachlor epoxide	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Methoxychlor	ND		4.9		ug/Kg		03/28/15 15:04	03/31/15 14:41	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	69		35 - 115	03/28/15 15:04	03/31/15 14:41	1
DCB Decachlorobiphenyl (Surr)	84		45 - 120	03/28/15 15:04	03/31/15 14:41	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Arsenic	3.8		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Barium	89		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Beryllium	ND		0.50		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Cadmium	ND		0.50		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Chromium	35		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Cobalt	6.3		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Copper	17		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Lead	11		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Nickel	23		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Selenium	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Thallium	ND		10		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Vanadium	34		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Zinc	48		5.0		mg/Kg		03/20/15 08:59	03/23/15 19:14	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:14	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 21:08	03/26/15 15:06	1

TestAmerica Irvine

Client Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 2

Lab Sample ID: 440-104887-2

Date Collected: 03/17/15 14:32

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
delta-BHC	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endosulfan sulfate	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 15:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		35 - 115				03/28/15 15:04	03/31/15 15:45	1
DCB Decachlorobiphenyl (Surr)	78		45 - 120				03/28/15 15:04	03/31/15 15:45	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Arsenic	3.8		2.9		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Barium	93		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Beryllium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Cadmium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Chromium	37		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Cobalt	7.1		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Copper	17		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Lead	6.5		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Nickel	25		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Selenium	ND		2.9		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Thallium	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Vanadium	37		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Zinc	46		4.9		mg/Kg		03/20/15 08:59	03/23/15 19:16	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:16	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 21:08	03/26/15 16:19	1

TestAmerica Irvine

Client Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 3

Lab Sample ID: 440-104887-3

Date Collected: 03/17/15 14:46

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
delta-BHC	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endosulfan sulfate	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 15:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		35 - 115				03/28/15 15:04	03/31/15 15:59	1
DCB Decachlorobiphenyl (Surr)	68		45 - 120				03/28/15 15:04	03/31/15 15:59	1

Method: 6010B - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Arsenic	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Barium	90		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Beryllium	ND		0.50		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Cadmium	ND		0.50		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Chromium	33		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Cobalt	6.3		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Copper	16		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Lead	11		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Nickel	22		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Selenium	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Thallium	ND		10		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Vanadium	34		1.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Zinc	46		5.0		mg/Kg		03/20/15 08:59	03/23/15 19:18	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:18	5

Method: 7471A - Mercury (CVAA)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 22:01	03/26/15 17:13	1

Client Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 4

Lab Sample ID: 440-104887-4

Date Collected: 03/17/15 14:57

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
delta-BHC	ND		10		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endosulfan sulfate	ND		10		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		35 - 115				03/28/15 15:04	03/31/15 16:14	1
DCB Decachlorobiphenyl (Surr)	65		45 - 120				03/28/15 15:04	03/31/15 16:14	1

Method: 6010B - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Arsenic	3.9		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Barium	95		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Beryllium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Cadmium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Chromium	40		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Cobalt	7.4		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Copper	17		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Lead	10		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Nickel	26		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Selenium	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Thallium	ND		9.9		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Vanadium	39		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Zinc	46		4.9		mg/Kg		03/20/15 08:59	03/23/15 19:19	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:19	5

Method: 7471A - Mercury (CVAA)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 21:08	03/26/15 15:16	1

TestAmerica Irvine

Client Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 5

Lab Sample ID: 440-104887-5

Date Collected: 03/17/15 15:14

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
delta-BHC	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endosulfan sulfate	ND		9.9		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 16:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	72		35 - 115				03/28/15 15:04	03/31/15 16:29	1
DCB Decachlorobiphenyl (Surr)	61		45 - 120				03/28/15 15:04	03/31/15 16:29	1

Method: 6010B - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.9		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Arsenic	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Barium	92		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Beryllium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Cadmium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Chromium	40		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Cobalt	7.5		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Copper	18		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Lead	5.8		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Nickel	26		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Selenium	ND		3.0		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Thallium	ND		9.9		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Vanadium	38		0.99		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Zinc	39		4.9		mg/Kg		03/20/15 08:59	03/23/15 19:21	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:21	5

Method: 7471A - Mercury (CVAA)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 22:01	03/26/15 17:11	1

Client Sample Results

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 6

Lab Sample ID: 440-104887-6

Date Collected: 03/17/15 15:29

Matrix: Solid

Date Received: 03/19/15 10:00

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
delta-BHC	ND		10		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endosulfan sulfate	ND		10		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		35 - 115				03/28/15 15:04	03/31/15 16:43	1
DCB Decachlorobiphenyl (Surr)	71		45 - 120				03/28/15 15:04	03/31/15 16:43	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Arsenic	4.0		2.9		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Barium	110		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Beryllium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Cadmium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Chromium	44		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Cobalt	8.4		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Copper	21		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Lead	13		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Nickel	28		2.0		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Selenium	ND		2.9		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Thallium	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Vanadium	44		0.98		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Zinc	51		4.9		mg/Kg		03/20/15 08:59	03/23/15 19:23	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 19:23	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 21:08	03/26/15 16:14	1

TestAmerica Irvine

Method Summary

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 1

Date Collected: 03/17/15 14:25

Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.18 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.18 g	2 mL	246101	03/31/15 14:41	KS	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.01 g	50 mL	244599	03/23/15 19:14	EN	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	245101	03/25/15 21:08	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.50 g	50 mL	245302	03/26/15 15:06	EN	TAL IRV

Client Sample ID: 2

Date Collected: 03/17/15 14:32

Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.10 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.10 g	2 mL	246141	03/31/15 15:45	KS	TAL IRV
Total/NA	Prep	3050B			2.04 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.04 g	50 mL	244599	03/23/15 19:16	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	245101	03/25/15 21:08	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.51 g	50 mL	245302	03/26/15 16:19	EN	TAL IRV

Client Sample ID: 3

Date Collected: 03/17/15 14:46

Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.11 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.11 g	2 mL	246141	03/31/15 15:59	KS	TAL IRV
Total/NA	Prep	3050B			2.01 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.01 g	50 mL	244599	03/23/15 19:18	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	245112	03/25/15 22:01	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.51 g	50 mL	245329	03/26/15 17:13	EN	TAL IRV

Client Sample ID: 4

Date Collected: 03/17/15 14:57

Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.06 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.06 g	2 mL	246141	03/31/15 16:14	KS	TAL IRV
Total/NA	Prep	3050B			2.03 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.03 g	50 mL	244599	03/23/15 19:19	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	245101	03/25/15 21:08	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.51 g	50 mL	245302	03/26/15 15:16	EN	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Client Sample ID: 5

Date Collected: 03/17/15 15:14
 Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.15 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.15 g	2 mL	246141	03/31/15 16:29	KS	TAL IRV
Total/NA	Prep	3050B			2.03 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.03 g	50 mL	244599	03/23/15 19:21	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	245112	03/25/15 22:01	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.51 g	50 mL	245329	03/26/15 17:11	EN	TAL IRV

Client Sample ID: 6

Date Collected: 03/17/15 15:29
 Date Received: 03/19/15 10:00

Lab Sample ID: 440-104887-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.04 g	2 mL	245658	03/28/15 15:04	KDP	TAL IRV
Total/NA	Analysis	8081A		1	15.04 g	2 mL	246141	03/31/15 16:43	KS	TAL IRV
Total/NA	Prep	3050B			2.04 g	50 mL	243977	03/20/15 08:59	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.04 g	50 mL	244599	03/23/15 19:23	EN	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	245101	03/25/15 21:08	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.50 g	50 mL	245302	03/26/15 16:14	EN	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 440-245658/1-A

Matrix: Solid

Analysis Batch: 246101

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245658

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
4,4'-DDD	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
4,4'-DDE	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
4,4'-DDT	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Aldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
alpha-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
beta-BHC	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Chlordane (technical)	ND		50		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
delta-BHC	ND		10		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Dieldrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endosulfan I	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endosulfan II	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endosulfan sulfate	ND		10		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endrin	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endrin aldehyde	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Endrin ketone	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
gamma-BHC (Lindane)	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Heptachlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Heptachlor epoxide	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Methoxychlor	ND		5.0		ug/Kg		03/28/15 15:04	03/31/15 13:45	1
Toxaphene	ND		200		ug/Kg		03/28/15 15:04	03/31/15 13:45	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	80		35 - 115	03/28/15 15:04	03/31/15 13:45	1
DCB Decachlorobiphenyl (Surr)	98		45 - 120	03/28/15 15:04	03/31/15 13:45	1

Lab Sample ID: LCS 440-245658/2-A

Matrix: Solid

Analysis Batch: 246101

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245658

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
4,4'-DDD	13.3	12.7		ug/Kg		95	60 - 120	
4,4'-DDE	13.3	11.8		ug/Kg		89	60 - 120	
4,4'-DDT	13.3	12.3		ug/Kg		93	65 - 120	
Aldrin	13.3	9.72		ug/Kg		73	50 - 115	
alpha-BHC	13.3	11.0		ug/Kg		83	60 - 115	
beta-BHC	13.3	11.2		ug/Kg		84	60 - 115	
delta-BHC	13.3	11.6		ug/Kg		87	60 - 115	
Dieldrin	13.3	11.9		ug/Kg		89	65 - 115	
Endosulfan I	13.3	11.4		ug/Kg		86	40 - 120	
Endosulfan II	13.3	11.8		ug/Kg		89	55 - 120	
Endosulfan sulfate	13.3	11.9		ug/Kg		89	65 - 115	
Endrin	13.3	12.9		ug/Kg		97	55 - 120	
Endrin aldehyde	13.3	9.87		ug/Kg		74	55 - 115	
Endrin ketone	13.3	12.3		ug/Kg		92	65 - 115	
gamma-BHC (Lindane)	13.3	10.5		ug/Kg		79	55 - 115	
Heptachlor	13.3	11.4		ug/Kg		85	55 - 115	
Heptachlor epoxide	13.3	11.7		ug/Kg		88	55 - 115	
Methoxychlor	13.3	12.0		ug/Kg		90	65 - 120	

TestAmerica Irvine

QC Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 440-245658/2-A
Matrix: Solid
Analysis Batch: 246101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245658

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	77		35 - 115
DCB Decachlorobiphenyl (Surr)	94		45 - 120

Lab Sample ID: 440-104887-1 MS
Matrix: Solid
Analysis Batch: 246101

Client Sample ID: 1
Prep Type: Total/NA
Prep Batch: 245658

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
4,4'-DDD	ND		13.3	13.1		ug/Kg		99		40 - 130
4,4'-DDE	ND		13.3	13.0		ug/Kg		98		35 - 130
4,4'-DDT	ND		13.3	13.0		ug/Kg		98		35 - 130
Aldrin	ND		13.3	11.2		ug/Kg		85		40 - 115
alpha-BHC	ND		13.3	11.2		ug/Kg		85		40 - 115
beta-BHC	ND		13.3	12.1		ug/Kg		91		40 - 120
delta-BHC	ND		13.3	12.2		ug/Kg		92		45 - 120
Dieldrin	ND		13.3	12.5		ug/Kg		94		40 - 125
Endosulfan I	ND		13.3	11.8		ug/Kg		89		40 - 120
Endosulfan II	ND		13.3	11.8		ug/Kg		89		40 - 125
Endosulfan sulfate	ND		13.3	11.7		ug/Kg		89		45 - 120
Endrin	ND		13.3	13.8		ug/Kg		104		45 - 125
Endrin aldehyde	ND		13.3	10.1		ug/Kg		76		30 - 120
Endrin ketone	ND		13.3	12.5		ug/Kg		94		40 - 120
gamma-BHC (Lindane)	ND		13.3	10.9		ug/Kg		82		40 - 120
Heptachlor	ND		13.3	12.0		ug/Kg		90		40 - 115
Heptachlor epoxide	ND		13.3	12.3		ug/Kg		93		45 - 115
Methoxychlor	ND		13.3	12.1		ug/Kg		92		40 - 135

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	76		35 - 115
DCB Decachlorobiphenyl (Surr)	92		45 - 120

Lab Sample ID: 440-104887-1 MSD
Matrix: Solid
Analysis Batch: 246101

Client Sample ID: 1
Prep Type: Total/NA
Prep Batch: 245658

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
4,4'-DDD	ND		13.2	14.6		ug/Kg		110		40 - 130	11	30
4,4'-DDE	ND		13.2	12.9		ug/Kg		98		35 - 130	1	30
4,4'-DDT	ND		13.2	13.1		ug/Kg		99		35 - 130	1	30
Aldrin	ND		13.2	11.2		ug/Kg		85		40 - 115	1	30
alpha-BHC	ND		13.2	11.2		ug/Kg		85		40 - 115	0	30
beta-BHC	ND		13.2	12.6		ug/Kg		95		40 - 120	3	30
delta-BHC	ND		13.2	12.4		ug/Kg		94		45 - 120	1	30
Dieldrin	ND		13.2	12.7		ug/Kg		96		40 - 125	2	30
Endosulfan I	ND		13.2	11.9		ug/Kg		90		40 - 120	1	30
Endosulfan II	ND		13.2	12.3		ug/Kg		93		40 - 125	3	30
Endosulfan sulfate	ND		13.2	11.4		ug/Kg		86		45 - 120	3	30
Endrin	ND		13.2	15.2		ug/Kg		115		45 - 125	10	30

TestAmerica Irvine

QC Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 440-104887-1 MSD

Matrix: Solid

Analysis Batch: 246101

Client Sample ID: 1

Prep Type: Total/NA

Prep Batch: 245658

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier		Result	Qualifier						
Endrin aldehyde	ND		13.2	9.41		ug/Kg		71	30 - 120	7	30
Endrin ketone	ND		13.2	11.4		ug/Kg		87	40 - 120	9	30
gamma-BHC (Lindane)	ND		13.2	11.0		ug/Kg		83	40 - 120	1	30
Heptachlor	ND		13.2	12.1		ug/Kg		91	40 - 115	1	30
Heptachlor epoxide	ND		13.2	12.0		ug/Kg		91	45 - 115	2	30
Methoxychlor	ND		13.2	12.4		ug/Kg		94	40 - 135	2	30
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Tetrachloro-m-xylene	73		35 - 115								
DCB Decachlorobiphenyl (Surr)	91		45 - 120								

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-243977/1-A ^5

Matrix: Solid

Analysis Batch: 244599

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 243977

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Arsenic	ND		2.9		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Barium	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Beryllium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Cadmium	ND		0.49		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Chromium	ND		0.98		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Cobalt	ND		0.98		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Copper	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Lead	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Molybdenum	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Nickel	ND		2.0		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Selenium	ND		2.9		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Thallium	ND		9.8		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Vanadium	ND		0.98		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Zinc	ND		4.9		mg/Kg		03/20/15 08:59	03/23/15 18:31	5
Silver	ND		1.5		mg/Kg		03/20/15 08:59	03/23/15 18:31	5

Lab Sample ID: LCS 440-243977/2-A ^5

Matrix: Solid

Analysis Batch: 244599

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243977

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Antimony	49.3	58.9		mg/Kg		120	80 - 120
Arsenic	49.3	56.6		mg/Kg		115	80 - 120
Barium	49.3	57.7		mg/Kg		117	80 - 120
Beryllium	49.3	56.2		mg/Kg		114	80 - 120
Cadmium	49.3	56.4		mg/Kg		115	80 - 120
Chromium	49.3	56.9		mg/Kg		116	80 - 120
Cobalt	49.3	58.3		mg/Kg		118	80 - 120
Copper	49.3	57.6		mg/Kg		117	80 - 120

TestAmerica Irvine

QC Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-243977/2-A ^5
Matrix: Solid
Analysis Batch: 244599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 243977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	49.3	58.9		mg/Kg		119	80 - 120
Molybdenum	49.3	58.4		mg/Kg		118	80 - 120
Nickel	49.3	57.8		mg/Kg		117	80 - 120
Selenium	49.3	52.6		mg/Kg		107	80 - 120
Thallium	49.3	57.5		mg/Kg		117	80 - 120
Vanadium	49.3	57.0		mg/Kg		116	80 - 120
Zinc	49.3	54.3		mg/Kg		110	80 - 120
Silver	24.6	28.3		mg/Kg		115	80 - 120

Lab Sample ID: 440-104698-A-3-F MSD ^5
Matrix: Solid
Analysis Batch: 244599

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 243977

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		49.8	37.8		mg/Kg		76	75 - 125	13	20
Arsenic	8.4		49.8	52.0		mg/Kg		88	75 - 125	17	20
Barium	100	F1	49.8	172	F1	mg/Kg		136	75 - 125	8	20
Beryllium	ND		49.8	46.6		mg/Kg		93	75 - 125	13	20
Cadmium	ND		49.8	44.6		mg/Kg		89	75 - 125	12	20
Chromium	12		49.8	59.0		mg/Kg		94	75 - 125	15	20
Cobalt	4.6		49.8	51.5		mg/Kg		94	75 - 125	14	20
Copper	31		49.8	70.0		mg/Kg		78	75 - 125	14	20
Lead	5.0		49.8	50.8		mg/Kg		92	75 - 125	15	20
Molybdenum	ND		49.8	45.3		mg/Kg		91	75 - 125	14	20
Nickel	17		49.8	59.3		mg/Kg		85	75 - 125	16	20
Selenium	ND		49.8	41.6		mg/Kg		84	75 - 125	16	20
Thallium	ND		49.8	43.0		mg/Kg		86	75 - 125	12	20
Vanadium	31		49.8	75.4		mg/Kg		89	75 - 125	15	20
Zinc	40	F1	49.8	76.8	F1	mg/Kg		74	75 - 125	12	20
Silver	ND		24.9	23.7		mg/Kg		95	75 - 125	15	20

Lab Sample ID: 440-104698-A-3-H MS ^5
Matrix: Solid
Analysis Batch: 244599

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 243977

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		50.0	43.0		mg/Kg		86	75 - 125
Arsenic	8.4		50.0	61.4		mg/Kg		106	75 - 125
Barium	100	F1	50.0	187	F1	mg/Kg		166	75 - 125
Beryllium	ND		50.0	53.2		mg/Kg		106	75 - 125
Cadmium	ND		50.0	50.1		mg/Kg		100	75 - 125
Chromium	12		50.0	68.9		mg/Kg		113	75 - 125
Cobalt	4.6		50.0	59.5		mg/Kg		110	75 - 125
Copper	31		50.0	80.6		mg/Kg		99	75 - 125
Lead	5.0		50.0	59.1		mg/Kg		108	75 - 125
Molybdenum	ND		50.0	52.3		mg/Kg		105	75 - 125
Nickel	17		50.0	69.7		mg/Kg		106	75 - 125
Selenium	ND		50.0	48.8		mg/Kg		98	75 - 125
Thallium	ND		50.0	48.3		mg/Kg		97	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-104698-A-3-H MS ^5		Client Sample ID: Matrix Spike							
Matrix: Solid		Prep Type: Total/NA							
Analysis Batch: 244599		Prep Batch: 243977							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Vanadium	31		50.0	87.2		mg/Kg		113	75 - 125
Zinc	40	F1	50.0	86.2		mg/Kg		92	75 - 125
Silver	ND		25.0	27.5		mg/Kg		110	75 - 125

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-245101/1-A		Client Sample ID: Method Blank							
Matrix: Solid		Prep Type: Total/NA							
Analysis Batch: 245302		Prep Batch: 245101							
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 21:08	03/26/15 15:01	1

Lab Sample ID: LCS 440-245101/2-A		Client Sample ID: Lab Control Sample					
Matrix: Solid		Prep Type: Total/NA					
Analysis Batch: 245302		Prep Batch: 245101					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.800	0.867		mg/Kg		108	80 - 120

Lab Sample ID: 440-104887-1 MS		Client Sample ID: 1							
Matrix: Solid		Prep Type: Total/NA							
Analysis Batch: 245302		Prep Batch: 245101							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.784	0.928		mg/Kg		117	70 - 130

Lab Sample ID: 440-104887-1 MSD		Client Sample ID: 1									
Matrix: Solid		Prep Type: Total/NA									
Analysis Batch: 245302		Prep Batch: 245101									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.800	0.952		mg/Kg		117	70 - 130	3	20

Lab Sample ID: MB 440-245112/1-A		Client Sample ID: Method Blank							
Matrix: Solid		Prep Type: Total/NA							
Analysis Batch: 245329		Prep Batch: 245112							
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg		03/25/15 22:01	03/26/15 16:34	1

Lab Sample ID: LCS 440-245112/2-A		Client Sample ID: Lab Control Sample					
Matrix: Solid		Prep Type: Total/NA					
Analysis Batch: 245329		Prep Batch: 245112					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.800	0.844		mg/Kg		106	80 - 120

TestAmerica Irvine

QC Sample Results

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 440-105115-H-22-N MSD

Matrix: Solid

Analysis Batch: 245329

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245112

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Mercury	ND		0.784	0.801		mg/Kg		102	70 - 130	2	20

Lab Sample ID: 440-105115-H-22-O MS

Matrix: Solid

Analysis Batch: 245329

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245112

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Mercury	ND		0.784	0.817		mg/Kg		104	70 - 130		



QC Association Summary

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

GC Semi VOA

Prep Batch: 245658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-1	1	Total/NA	Solid	3546	
440-104887-1 MS	1	Total/NA	Solid	3546	
440-104887-1 MSD	1	Total/NA	Solid	3546	
440-104887-2	2	Total/NA	Solid	3546	
440-104887-3	3	Total/NA	Solid	3546	
440-104887-4	4	Total/NA	Solid	3546	
440-104887-5	5	Total/NA	Solid	3546	
440-104887-6	6	Total/NA	Solid	3546	
LCS 440-245658/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 440-245658/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 246101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-1	1	Total/NA	Solid	8081A	245658
440-104887-1 MS	1	Total/NA	Solid	8081A	245658
440-104887-1 MSD	1	Total/NA	Solid	8081A	245658
LCS 440-245658/2-A	Lab Control Sample	Total/NA	Solid	8081A	245658
MB 440-245658/1-A	Method Blank	Total/NA	Solid	8081A	245658

Analysis Batch: 246141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-2	2	Total/NA	Solid	8081A	245658
440-104887-3	3	Total/NA	Solid	8081A	245658
440-104887-4	4	Total/NA	Solid	8081A	245658
440-104887-5	5	Total/NA	Solid	8081A	245658
440-104887-6	6	Total/NA	Solid	8081A	245658

Metals

Prep Batch: 243977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104698-A-3-F MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	
440-104698-A-3-H MS ^5	Matrix Spike	Total/NA	Solid	3050B	
440-104887-1	1	Total/NA	Solid	3050B	
440-104887-2	2	Total/NA	Solid	3050B	
440-104887-3	3	Total/NA	Solid	3050B	
440-104887-4	4	Total/NA	Solid	3050B	
440-104887-5	5	Total/NA	Solid	3050B	
440-104887-6	6	Total/NA	Solid	3050B	
LCS 440-243977/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
MB 440-243977/1-A ^5	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 244599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104698-A-3-F MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	243977
440-104698-A-3-H MS ^5	Matrix Spike	Total/NA	Solid	6010B	243977
440-104887-1	1	Total/NA	Solid	6010B	243977
440-104887-2	2	Total/NA	Solid	6010B	243977
440-104887-3	3	Total/NA	Solid	6010B	243977
440-104887-4	4	Total/NA	Solid	6010B	243977

TestAmerica Irvine

QC Association Summary

Client: Earth Systems Southern California
 Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Metals (Continued)

Analysis Batch: 244599 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-5	5	Total/NA	Solid	6010B	243977
440-104887-6	6	Total/NA	Solid	6010B	243977
LCS 440-243977/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	243977
MB 440-243977/1-A ^5	Method Blank	Total/NA	Solid	6010B	243977

Prep Batch: 245101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-1	1	Total/NA	Solid	7471A	
440-104887-1 MS	1	Total/NA	Solid	7471A	
440-104887-1 MSD	1	Total/NA	Solid	7471A	
440-104887-2	2	Total/NA	Solid	7471A	
440-104887-4	4	Total/NA	Solid	7471A	
440-104887-6	6	Total/NA	Solid	7471A	
LCS 440-245101/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 440-245101/1-A	Method Blank	Total/NA	Solid	7471A	

Prep Batch: 245112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-3	3	Total/NA	Solid	7471A	
440-104887-5	5	Total/NA	Solid	7471A	
440-105115-H-22-N MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	
440-105115-H-22-O MS	Matrix Spike	Total/NA	Solid	7471A	
LCS 440-245112/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 440-245112/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 245302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-1	1	Total/NA	Solid	7471A	245101
440-104887-1 MS	1	Total/NA	Solid	7471A	245101
440-104887-1 MSD	1	Total/NA	Solid	7471A	245101
440-104887-2	2	Total/NA	Solid	7471A	245101
440-104887-4	4	Total/NA	Solid	7471A	245101
440-104887-6	6	Total/NA	Solid	7471A	245101
LCS 440-245101/2-A	Lab Control Sample	Total/NA	Solid	7471A	245101
MB 440-245101/1-A	Method Blank	Total/NA	Solid	7471A	245101

Analysis Batch: 245329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-104887-3	3	Total/NA	Solid	7471A	245112
440-104887-5	5	Total/NA	Solid	7471A	245112
440-105115-H-22-N MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	245112
440-105115-H-22-O MS	Matrix Spike	Total/NA	Solid	7471A	245112
LCS 440-245112/2-A	Lab Control Sample	Total/NA	Solid	7471A	245112
MB 440-245112/1-A	Method Blank	Total/NA	Solid	7471A	245112

Definitions/Glossary

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



Certification Summary

Client: Earth Systems Southern California
Project/Site: Los Angeles County Library

TestAmerica Job ID: 440-104887-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15

* Certification renewal pending - certification considered valid.

TestAmerica Irvine



TestAmerica Irvine
 17461 Derian Ave
 Suite 100
 Irvine, CA 92614
 phone 949.261.1022 fax

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Program: DW NPDES RCRA Other:

Client Contact
 Earth Systems
 1024 West Avenue M-4
 Palmdale, CA 93551
 (661) 948-7538
 (xxx) xxx-xxxx FAX
 Project Name: Los Angeles County Library
 Site: Quartz Hill, CA
 P.O.# Earth Systems Job # PL-06948-04

Project Manager: Bruce Hick
 Tel/Fax: (661) 948-7538

Site Contact: 3/18/2015
 Lab Contact: Lena Davidkova
 Carrier:

1 of 1 COCs

Sampler:
 For Lab Use Only:
 Walk-in Client:
 Lab Sampling:
 Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)		Perform MS / MSD (Y / N)		Sample Specific Notes:
						8081A Chlorinated Pesticides	6010B CAM Metals	8081A Chlorinated Pesticides	6010B CAM Metals	
1	3-17-15	2:25 pm	G	soil	2	N	N	N	X	
2	3-17-15	2:32 pm	G	soil	2	N	N	N	X	
3	3-17-15	2:46 pm	G	soil	2	N	N	N	X	
4	3-17-15	2:57 pm	G	soil	2	N	N	N	X	
5	3-17-15	3:14 pm	G	soil	2	N	N	N	X	
6	3-17-15	3:29 pm	G	soil	2	N	N	N	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Unlabeled

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Cooler Temp. (°C): Obs'd: 4.5 Corrd: 3.8 Therm ID No.: ER-72

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seal No. _____

Relinquished by: [Signature] Date/Time: 3/18/15 1:23 PM
 Company: CAROL'S SY-TEMS

Relinquished by: [Signature] Date/Time: _____
 Company: _____

Relinquished by: [Signature] Date/Time: 3/19/15 10:00
 Company: TAI

Login Sample Receipt Checklist

Client: Earth Systems Southern California

Job Number: 440-104887-1

Login Number: 104887

List Number: 1

Creator: Soderblom, Tim

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Chapter 2

Comments Received on the Draft IS/MND and Responses to Comments

The comment letters received during the public review period for the Draft IS/MND are included on the following pages. Table 1 lists the interested parties that submitted letters during the public review period and their order of appearance. The responses to each comment letter follow the letter to which they respond.

Table 1. Comments Received During Public Review

Commenter		Dated
A	County of Los Angeles Fire Department	February 2, 2015
B	County Sanitation Districts of Los Angeles County	February 6, 2015

Comment Letter A: County of Los Angeles Fire Department (February 2, 2015)



COUNTY OF LOS ANGELES
 FIRE DEPARTMENT
 1320 NORTH EASTERN AVENUE
 LOS ANGELES, CALIFORNIA 90063-3294

DARYL L. OSBY
 FIRE CHIEF
 FORESTER & FIRE WARDEN

February 2, 2015

Alisa Chepeian, Project Manager
 LA County Chief Executive Office
 Kenneth Hahn Hall of Administration
 500 West Temple Street
 Los Angeles, CA 90012

Dear Ms. Chepeian:

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION, "QUARTZ HILL LIBRARY PROJECT," IT WOULD BE BUILT ON AN UNDEVELOPED 1.75-ACRE PARCEL, THAT WILL HELP MEET THE SERVICE NEEDS OF THE ANTICIPATED LOCAL POPULATION IN QUARTZ HILL, 50TH STREET WEST ON AVENUE M-2, QUARTZ HILL (FFER 201500008)

The Notice of Intent to Adopt a Mitigated Negative Declaration has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. We have no comments at this time.

LAND DEVELOPMENT UNIT:

Specific Fire Department access and water system requirements will be addressed with further review of plans for the proposed development.

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS	CALABASAS	DIAMOND BAR	HIDDEN HILLS	LA MIRADA	MALIBU	POMONA	SIGNAL HILL
ARTESIA	CARSON	DUARTE	HUNTINGTON PARK	LA PUENTE	MAYWOOD	RANCHO PALOS VERDES	SOUTH EL MONTE
AZUSA	CERRITOS	EL MONTE	INDUSTRY	LAKEWOOD	NORWALK	ROLLING HILLS	SOUTH GATE
BALDWIN PARK	CLAREMONT	GARDENA	INGLEWOOD	LANCASTER	PALMDALE	ROLLING HILLS ESTATES	TEMPLE CITY
BELL	COMMERCE	GLENDORA	IRWINDALE	LAWDALE	PALOS VERDES ESTATES	ROSEMEAD	WALNUT
BELL GARDENS	COVINA	HAWAIIAN GARDENS	LA CANADA FLINTRIDGE	LOMITA	PARAMOUNT	SAN DIMAS	WEST HOLLYWOOD
BELLFLOWER	CUDAHY	HAWTHORNE	LA HABRA	LYNWOOD	PICO RIVERA	SANTA CLARITA	WESTLAKE VILLAGE
BRADBURY							WHITTIER

Alisa Chepeian, Project Manager
February 2, 2015
Page 2

COMMENT 1

Conditions of Approval - Access

1. All on-site Fire Department's vehicular access roads shall be labeled as "Private Driveway and Fire Lane" on the site plan along with the widths clearly depicted on the plan. Labeling is necessary to assure the access availability for the Fire Department's use. The designation allows for appropriate signage prohibiting parking.
2. The Fire Department's vehicular access roads must be installed and maintained in a serviceable manner prior to and during the time of construction. Fire Code 501.4.
3. All fire lanes shall be clear of all encroachments and shall be maintained in accordance with the Title 32, County of Los Angeles Fire Code.
4. The edge of the fire access roadway shall be located at a minimum of 5 feet from the building or any projections therefrom.
5. The fire apparatus access roads and designated fire lanes shall be measured from flow line to flow line.
6. Provide a minimum unobstructed width of 26 feet exclusive of shoulders and an unobstructed vertical clearance "clear to sky" Fire Department vehicular access to within 150 feet of all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building. Fire Code 503.1.1 and 503.2.2.
7. The dimensions of the approved Fire Apparatus Access Roads shall be maintained as originally approved by the fire code official. Fire Code 503.2.2.1.
8. Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved Fire Department turnaround. Fire Code 503.2.5.
9. The Fire Department's vehicular access roads shall be provided with a 32-foot centerline turning radius. Fire Code 503.2.4.
10. Fire apparatus access roads shall be designed and maintained to support the imposed load of fire apparatus weighing 37 ½ tons and shall be surfaced so as to provide all-weather driving capabilities. Fire apparatus access roads having a grade of 10 percent or greater shall have a paved or concrete surface. Fire Code 503.2.3

Alisa Chepeian, Project Manager
February 2, 2015
Page 3

COMMENT 1
(CONT'D.)



- 11. Provide approved signs or other approved notices or markings that include the words "NO PARKING - FIRE LANE." Signs shall have a minimum dimension of 12 inches wide by 18 inches high and have red letters on a white reflective background. Signs shall be provided for fire apparatus access roads to clearly indicate the entrance to such road or prohibit the obstruction thereof and at intervals as required by the Fire Inspector. Fire Code 503.3.
- 12. A minimum 5-foot-wide approved firefighter access walkway leading from the fire department access road to all required openings in the building's exterior walls shall be provided for firefighting and rescue purposes. Fire Code 504.1.
- 13. Fire apparatus access roads shall not be obstructed in any manner including by the parking of vehicles or the use of traffic calming devices including but not limited to, speed bumps or speed humps. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times. Fire Code 503.4.
- 14. Traffic Calming Devices including but not limited to, speed bumps and speed humps shall be prohibited unless approved by the fire code official. Fire Code 503.4.1.
- 15. Security barriers, visual screen barriers, or other obstructions shall not be installed on the roof of any building in such a manner as to obstruct firefighter access or egress in the event of fire or other emergency. Parapets shall not exceed 48 inches from the top of the parapet to the roof surface on more than two sides. Fire Code 504.5.
 - a) Clearly indicate the height of all parapets in a section view.
- 16. Approved building address numbers, building numbers, or approved building identification shall be provided and maintained so as to be plainly visible and legible from the street fronting the property. The numbers shall contrast with their background, be Arabic numerals or alphabet letters, and be a minimum of 4 inches high with a minimum stroke width of 0.5 inch. Fire Code 505.1.

COMMENT 2



Conditions of Approval – Water

- 1. All fire hydrants shall measure 6"x 4"x 2-1/2" brass or bronze, conforming to current AWWA standard C503 or approved equal, and shall be installed in accordance with the County of Los Angeles Fire Department Regulation 8.
- 2. All required public fire hydrants shall be installed, tested, and accepted prior to beginning construction. Fire Code 501.4.

Alisa Chepeian, Project Manager
February 2, 2015
Page 4

COMMENT 2
(CONT'D.)



3. The required fire flow for the public fire hydrants for this project is 3000 gpm at 20 psi residual pressure for 2 hours. Two (2) public fire hydrants flowing simultaneously may be used to achieve the required fire flow. Fire Code 507.3 and Appendix B105.1.

a) To determine the exact fire flow for the proposed development, provide the type of construction and confirmation of the type of automatic fire sprinkler system to be installed.

4. Install a minimum of one (1) public fire hydrant. Additional public fire hydrants will be determined with further review of the proposed development.

For any questions regarding the report, please contact FPEA Wally Collins at (323) 890-4243 or at Wally.Collins@fire.lacounty.gov.

COMMENT 3



FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

COMMENT 4



HEALTH HAZARDOUS MATERIALS DIVISION:

1. The subject property was used for a short period as an orchard and there is a potential for residual pesticides in soil. It is recommended that at a minimum six (6) surficial soil samples to be collected and analyzed for organo chlorine pesticides. If the concentrations of pesticides in soil exceed the California Human Health Screening Levels (CHHSLs), the site should be further assessed under oversight of the Los Angeles County Fire Site Mitigation Unit or a State agency prior to grading.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

KEVIN T. JOHNSON, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

KTJ:ad

Response to Comment Letter A

Response to Comment 1

The County shall include the LA County Fire Department's Conditions of Approval 1 through 16 for access as part of the adoption of the Quartz Hill Library Final Initial Study/Mitigated Negative Declaration.

Response to Comment 2

The County shall include the LA County Fire Department's Conditions of Approval 1 through 4 for water as part of the adoption of the Quartz Hill Library Final Initial Study/Mitigated Negative Declaration.

Response to Comment 3

The Quartz Hill Library Draft IS/MND addressed impacts to the following environmental concerns in the respective sections of the IS/MND: Erosion Control and Watershed Management– Section VI, Geology and Soils and Section IX, Hydrology and Water Quality; Rare and Endangered Species, Vegetation, County Oak Tree Ordinance – Section IV Biological Resources; Fire Zones – Section VIII Hazards and Hazardous Materials; Archaeological and Cultural Resources – Section V Cultural Resources. Please see below a discussion of how these environmental concerns were addressed in the Draft IS/MND:

- Erosion control during construction would be managed through the requirements of the Construction General Permit and the project-specific Stormwater Pollution and Prevention Plan. Operational impacts would be minimized through compliance with the MS4 permit and other applicable stormwater requirements as well as incorporation of a sustainable landscape design that would take into consideration the desert conditions of the area and emphasize drought-tolerant plant materials, rainwater capture systems, and a highly efficient irrigation design. Further details on erosion impacts can found in Sections VI, Geology and Soils and IX, Hydrology and Water Quality of the IS/MND.
- Rare and endangered species are not expected to be impacted as a result of the proposed project. The primary vegetation on the project site consists of nonnative species and a few nonnative trees. Some native species were observed on the site, but none that been classified as rare, special-status or endangered. In addition, no wildlife species were observed in the biological survey area. Moreover, the project site does not contain any protected oak trees and therefore would not conflict with the County Oak Tree Ordinance. Further details on biological resources can be found in Section IV, Biological Resources of the IS/MND.
- The project site is not located within a Very High Fire Hazard Severity Zone as delineated by CAL FIRE. No significant impacts or fuel modifications activities would occur or be required as a result of implementation of the proposed project. Further details on fire risk can be found in Section VIII, Hazards and Hazardous Materials of the IS/MND.
- Although archaeological and paleontological resources are not known to occur within the project site, the IS/MND has included mitigation to ensure impacts would be minimized and reduced to less than significant levels should any significant resources be encountered. Further details on archaeological and cultural resources can be found in Section V, Cultural Resources of the IS/MND.

Response to Comment 4

The LA County Fire Department has recommended that a minimum of 6 surficial soil samples be collected and analyzed for organochlorine pesticides as a result of the historic agricultural uses on the project site and the potential for residual hazardous materials to occur in the soil. Therefore, a subsequent Limited Phase II Environmental Services Report was completed after the public review period to test a minimum of six surficial soil samples for organochlorines. This report is included as Appendix G in Chapter 1 of this Final MND. The results of the Phase II Report have been incorporated in the MND analysis in the appropriate places (see Chapter 1 of the Final MND) and indicated that no organochlorines are present in the soils and all metal sample concentrations in the sampled soils are within naturally occurring levels for soils in the project area. Thus, no further environmental investigations are required at this time.

Any potentially hazardous materials remaining on the project site are expected to be discovered during the construction phase and remediated per the requirements of mitigation measure HAZ-1, which has been updated to add reference to the California Human Health Screening Levels per your comment.

Mitigation Measure HAZ-1 of the Quartz Hill Library IS/MND has been revised as follows:

HAZ-1: If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following:

- Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous materials.
- The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel.
- Analytical results shall be compared to EPA's Regional Screening Levels (RSLs) for residential developments¹ and the California Human Health Screening Levels (CHHSLs). RSLs are screening levels developed by EPA for common environmental pollutants.

¹ Residential being the more conservative of the two land uses considered for RSLs, the other being industrial.

Comment Letter B: County Sanitation Districts of Los Angeles County (February 6, 2015)



1955 Workman Mill Road, Whittier, CA 90601-1400
 Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
 Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

GRACE ROBINSON HYDE
 Chief Engineer and General Manager

February 6, 2015

Ref File No.: 3201311

Ms. Alisa Chepeian, Project Manager
 Chief Executive Office
 County of Los Angeles
 754, Kenneth Hahn Hall of Administration
 500 West Temple Street
 Los Angeles, CA 90012

Dear Ms. Chepeian:

Quartz Hill Library Project

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Intent to Adopt a Mitigated Negative Declaration for the subject project on January 9, 2015. We offer the following comments regarding sewerage service:

COMMENT 1

1. The project area is outside the jurisdictional boundaries of the Districts and will require annexation into District No. 14 before sewerage service can be provided to the proposed development. For a copy of the Districts' Annexation Information and Processing Fee sheets, go to www.lacsd.org, Wastewater & Sewer Systems, Will Serve Program, and click on the appropriate link. For more specific information regarding the annexation procedure and fees, please contact Ms. Donna Curry at (562) 908-4288, extension 2708.

COMMENT 2

2. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Trunk "F" Relief Section 3 Trunk Sewer, located in Avenue L at 50th Street West. This 18-inch diameter trunk sewer has a design capacity of 2.9 million gallons per day (mgd) and conveyed a peak flow of 1.2 mgd when last measured in 2011.

COMMENT 3

3. The wastewater generated by Quartz Hill, including the proposed project site, is or will be treated at the Lancaster Water Reclamation Plant, which has a design capacity of 18 mgd and currently processes an average flow of 13.7 mgd.

COMMENT 4

4. The Lancaster Water Reclamation Plant has recently undergone upgrades and expansion. The major components of the project included facilities for upgraded wastewater treatment, recycled water storage and distribution, and agriculture reuse.

COMMENT 5

5. The expected average wastewater flow from the proposed project, a 12,500-square foot library, is 1,250 gallons per day. For a copy of the Districts' average wastewater generation factors, go to

DOC: #3201311.D9914



Ms. Alisa Chepeian

-2-

February 6, 2015

**COMMENT 5
(CONT'D)**

www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the [Table 1, Loadings for Each Class of Land Use](#) link.

COMMENT 6

6. The Districts are empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System for increasing the strength or quantity of wastewater attributable to a particular parcel or operation already connected. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and search for the appropriate link. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at extension 2727.

COMMENT 7

7. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the Districts intend to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Grace Robinson Hyde



Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

cc: D. Curry

DOC: #3201311.D9914

Response to Comment Letter B

Response to Comment 1

Comment 1 notes that the project area is outside the jurisdictional boundaries of the Districts and will require annexation into District No. 14 before sewerage service can be provided to the proposed development. The comment provides information pertaining to the Districts' Annexation Information and Processing Fee sheets.

Annexation is largely an administrative procedure. It is addressed in the MND through the following language: "[n]ew connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures." As a result, annexation should not result in environmental impacts not covered in the MND.

In response to this comment, the IS-MND has been revised as follows:

Page 3-154, 4th Paragraph

The project area is outside the jurisdictional boundaries of the LACSD and would require annexation into District No. 14 before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey the wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of ~~treated wastewater in 2013 totaled 14~~ 13.7 mgd (LACSD 2014a, 2014b).

Page 3-156, 2nd Paragraph

Less-than-significant impact. Because the project area is outside the jurisdictional boundaries of the LACSD, operation of the proposed project would require annexation into District No. 14 and new connections to the LACSD sanitary sewer system before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system would be installed in compliance with County regulations and annexation procedures.

Page 3-158, 3rd Paragraph

The project area is outside the jurisdictional boundaries of the LACSD and would require annexation into District No. 14 before sewerage service could be provided to the proposed project. New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of ~~treated wastewater in 2013 totaled 14~~ 13.7 mgd (LACSD 2014a, 2014b).

Response to Comment 2

The comment notes that wastewater flow originating from the proposed project would discharge to a local sewer line, which is not maintained by the LACSD, for conveyance to the LACSD Trunk "F" Relief Section 3 Trunk Sewer. The comment states the specifications of the sewer.

In response to this comment, the IS-MND has been revised as follows:

Page 3-156, 2nd Paragraph

This wastewater would be primarily in the form of sanitary waste and would be discharged into a local sewer line, which is not maintained by the LACSD, for conveyance to the LACSD Trunk "F" Relief Section 3 Trunk Sewer, located in Avenue L at 50th Street West. This 18-inch diameter trunk sewer has a design capacity of 2.9 mgd and conveyed a peak flow of 1.2 mgd when last measured in 2011.

Response to Comments 3 and 4

The comment states that the wastewater generated by Quartz Hill is treated at the Lancaster Water Reclamation Plant, which has a design capacity of 18 mgd and currently processes an average flow of 13.7 mgd. The comment notes that the Lancaster Water Reclamation Plant has recently undergone upgrades and expansion and the major components of the upgrades are listed.

In response to this comment, the IS-MND has been revised as follows:

Page 3-153, 1st and 2nd Paragraphs

Wastewater management for the Antelope Valley is provided by LACSD. Wastewater generated in Quartz Hill is conveyed to, and treated by, ~~two facilities, the Lancaster Water Reclamation Plant (District 14) and the Palmdale Water Reclamation Plant (District 20).~~ The Lancaster Water Reclamation Plant, which would serve the project site, provides tertiary treatment for up to 18 million gallons per day (mgd) of wastewater, and processes an average flow of 13.7 mgd (LACSD 2014a).

The Lancaster Water Reclamation Plant has recently undergone upgrades and expansion. The major components of the project included upgraded wastewater treatment facilities, recycled water management facilities storage and distribution, and municipal agricultural reuse.

Page 3-154, 4th Paragraph and Page 3-155, 1st Paragraph

New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey the wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled 14 13.7 mgd (LACSD 2014a, 2014b).

Page 3-156, 2nd Paragraph

The LACSD sanitary sewer system would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled of 13.7 14-mgd (LACSD 2014a, 2014b).

Page 3-158, 3rd Paragraph

New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations and annexation procedures, would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; and currently processes an average flows of treated wastewater in 2013 totaled 14 13.7 mgd (LACSD 2014a, 2014b).

Page 3-161, 3rd Paragraph

The related projects would be served by the Lancaster Water Reclamation Plant (District 14) ~~and/or the Palmdale Water Reclamation Plant (District 20)~~. As discussed above, the Lancaster Water Reclamation Plant provides tertiary treatment for up to 18 mgd of wastewater; average flows of treated wastewater in 2013 totaled approximately 14 mgd (LACSD 2014a, 2014b). ~~The Palmdale Water Reclamation Plant has a capacity of 12 mgd of wastewater; average flows of treated wastewater in 2013 totaled 8.7 mgd (LACSD 2014b)~~. The residual treatment ~~capacities~~ capacity of the Lancaster Water Reclamation Plant ~~and the Palmdale Water Reclamation Plant, which is~~ approximately 4 mgd ~~and 3 mgd, respectively~~, would be more than adequate to serve the related projects and the proposed project. Therefore, it is not anticipated that the related projects would result in significant cumulative impacts with respect to wastewater treatment and infrastructure.

Response to Comment 5

The comment states that the expected average wastewater flow from the proposed project is 1,250 gallons per day. The comment provides location information for the LACSD’s loadings for each class of land use.

In response to this comment, the IS-MND has been revised to reflect the LACSD loadings, as follows:

Page 3-156, 2nd Paragraph

Using a wastewater generation factor of ~~150~~ 100 gallons per day (gpd)/1,000 square feet, operation of the proposed project would be expected to generate ~~1,875~~ 1,250 gpd of wastewater.²

Page 3-158, 3rd Paragraph

Less-than-significant impact. The proposed project was designed to achieve a LEED Silver rating. It would include features to minimize the generation of wastewater, such as low-flow water fixtures. Operation of the proposed project would be expected to generate approximately ~~1,875~~ 1,250 gpd of wastewater.

Page 3-160, Table 3-32. Generation of Solid Waste and Wastewater from Related Projects

Description	Address/Location	Size	Solid Waste	Wastewater
Single-family lots	4748 West Avenue M-12	Two proposed single-family lots	4.05 tons per year ^a	410.2 <u>520</u> gallons per day ^{c,d,f}
Retail, carwash, and automotive service station (no gas)	Northeast corner of 50 th Street West and West Avenue L-2	18,995 square feet for retail, 2,500 square feet for carwash, 7,575 square feet for automotive service station	43.32 tons per year ^b	50.2 <u>9,407</u> gallons per day ^{c,g}

² Estimated wastewater assumptions, calculation, and source: A wastewater generation factor ~~for Office~~ provided by the LACSD was used for this calculation; a wastewater generation factor specific to libraries was not available (~~150~~ 100 gpd/1,000 square feet)(12,500 square feet) = ~~1,875~~ 1,250 gpd (County of Los Angeles 2012).

Description	Address/Location	Size	Solid Waste	Wastewater
General office for a public utility service center	Southwest corner of 50 th Street West and West Avenue N	7,944 square feet	7.89 tons per year ^b	1,191.6 <u>1,588.8</u> gallons per day ^{ec}
Single-family lots	South of 47 th Street between Avenue M and Quartz Hill Road	Nine proposed single-family lots	18.22 tons per year ^a	1,846.05 <u>2,340</u> gallons per day ^{c,d,f}
Total			73.48 tons per year	3,498.05 <u>13,855.8</u> gallons per day
<p>^a CalRecycle 2013b. ^b CalRecycle 2013c. ^c LACSD, 2015. ^e Ellis 2004. ^d U.S. Census Bureau 2010. ^e County of Los Angeles 2012. ^f Assumed 2.93 members per household. ^g Assumed five cars per day.</p>				

Response to Comment 6

The comment describes the fee for connecting to the LACSD’s Sewerage System.

Thank you for your comment. No changes were made to the IS-MND in response to this comment.

Response to Comment 7

The comment states that the design capacities of the LACSD’s wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). The comment notes that the available capacity of the LACSD’s treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. The comment states that their letter does not constitute a guarantee of wastewater service, but instead advises that the LACSD intends to provide this service up to the levels that are legally permitted, and provides information pertaining to currently existing capacity and proposed expansion of the LACSD’s facilities.

Thank you for your comment. No changes were made to the IS-MND in response to this comment.

Mitigation Monitoring and Reporting Program

Purpose

Pursuant to the California Environmental Quality Act (CEQA), the potential environmental effects of the proposed Quartz Hill Library Project have been analyzed in an initial study/mitigated negative declaration (IS/MND). Section 21081.6 of CEQA and Section 15097 of the State CEQA Guidelines require a public agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) for assessing and ensuring the implementation of required mitigation measures, which are applied to proposed projects where mitigation is proposed because of potentially significant impacts from the proposed project. The County of Los Angeles is the designated lead agency for this MMRP, which is written in accordance with California Public Resources Code 21081.6 and Section 15097 of the State CEQA Guidelines.

The purpose of this MMRP is to ensure that the Quartz Hill Library Project implements the necessary environmental mitigation, as required by the IS/MND. Those mitigation measures have been included in this MMRP, which provides a mechanism for monitoring the mitigation measures, in compliance with the IS/MND, and general guidelines for the use and implementation of the monitoring program, as described below.

This MMRP describes the mitigation program that will be implemented by the County of Los Angeles. In addition, the County of Los Angeles is responsible for reviewing all monitoring reports, enforcement actions, and document disposition. Copies of the measures shall be distributed to participants in the monitoring effort to ensure that all parties have a clear understanding of the mitigation monitoring measures that have been adopted.

Format

The mitigation measures that are applicable to the Quartz Hill Library Project entail avoiding certain impacts altogether or minimizing potentially significant environmental impacts by limiting the degree or magnitude of the action and implementing and/or requiring supplemental structural controls.

Within the following table, mitigation measures are organized and referenced by environmental impact area. The environmental impact areas for which mitigation is proposed in the IS/MND are aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, and noise. The mitigation measure is listed in the first column, the timeframe for implementation is listed in the second column, the agency or party with primary responsibility for implementation is listed in the third column, and the agency or party with responsible for monitoring compliance is listed in the fourth column.

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
AESTHETICS			
<p>MM AES-1: The construction contractor shall use appropriate screening (i.e., temporary fencing with opaque materials) to buffer views of construction equipment as well as materials and soil in construction staging areas.</p>	<p>During construction activities</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>
BIOLOGICAL RESOURCES			
<p>MM BIO-1: Nesting Bird Compliance. Within 7 days of the commencement of any construction activities between February 15 and September 15, a qualified biologist shall perform a nesting bird survey to determine whether active nests are present within the project site and a 100-foot buffer. This survey shall identify the species and, to the degree feasible, the nesting stage (e.g., incubation of young, feeding of young, near fledging). Nest locations must be mapped with handheld GPS units or an alternate method that allows the nest to be mapped. If breeding activity and/or an active bird nest is located, a construction avoidance zone shall be established, and no construction activities shall be permitted within the established zone. The size of the construction avoidance zone shall be determined by the qualified biologist and demarcated in the field with fencing, stakes, and/or flagging. This area shall not be disturbed until the nest becomes inactive, as determined by the qualified biologist.</p>	<p>Within 7 days of commencement of any construction activities between February 15 and September 15</p>	<p>The construction contractor; a qualified biologist</p>	<p>The County of Los Angeles</p>

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
CULTURAL RESOURCES			
<p>MM CUL-1: Stop work if buried cultural deposits are encountered during construction activities. If buried cultural resources, such as chipped or ground stone, historic debris, or building foundations, are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find, treat the find according to accepted practices, and, if necessary, develop a response plan. Preservation in place shall be the preferred treatment method, per State CEQA Guidelines Section 15126.4(b) (Avoidance, Open Space, Capping, Easement).</p>	<p>During construction activities</p>	<p>The construction contractor; a qualified archaeologist</p>	<p>The County of Los Angeles</p>
<p>MM CUL-2: Stop work if human remains are encountered during construction activities. If human skeletal remains are encountered, ground-disturbing activities shall stop within a 100-foot radius of the discovery. Under State Health and Safety Code (HSC) Section 7050.5, if human remains are discovered during any project activity, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition, pursuant to California Public Resources Code (PRC) Section 5097.98. If the county coroner determines that the remains are Native American, the coroner</p>	<p>During construction activities</p>	<p>The construction contractor; a qualified archaeologist</p>	<p>The County of Los Angeles</p>

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<p>shall contact the NAHC within 24 hours. A qualified archaeologist shall also be contacted immediately. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so it can inspect the burial site and make recommendations for treatment or disposal.</p>	<p>During construction activities</p>	<p>The construction contractor; a qualified paleontologist</p>	<p>The County of Los Angeles</p>
<p>MM CUL-3: Stop work if paleontological resources are encountered during construction activities. During grading and site preparation activities, if paleontological resources are encountered, all work in the immediate vicinity of the find shall halt until a qualified paleontologist can evaluate the find and make recommendations. Paleontological resource materials may include fossils, plant impressions, or animal tracks that have been preserved in rock. Impacts on these resources, if not mitigated, would be potentially adverse. If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. Construction shall not resume until the appropriate mitigation measures are implemented or the materials are determined to be less than significant.</p>			

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
GEOLOGY AND SOILS			
<p>MM GEO-1. To provide a more uniform bearing for the proposed library, the construction contractor shall implement the applicable recommendations contained in the Geotechnical Engineering Report prepared by Earth Systems Southern California (2006) to reduce the potential for hydrocompression during construction and implementation of the proposed project.</p>	<p>During site preparation and construction activities</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>
HAZARDS AND HAZARDOUS MATERIALS			
<p>MM HAZ-1. If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following:</p>	<p>During site preparation and construction activities</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>
<ul style="list-style-type: none"> ● Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous materials. ● The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel. ● Analytical results shall be compared to EPA’s Regional Screening Levels (RSLs) for residential developments¹ and the California Human Health Screening Levels (CHHSLs). RSLs are screening levels developed by EPA for common environmental pollutants. 			

¹ Residential being the more conservative of the two land uses considered for RSLs, the other being industrial.

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<p>NOISE</p>			
<p>MM-NOI-1: The construction contractor shall implement the following measures to comply with the construction noise threshold of 85 dBA L_{max} defined by the County's Municipal Code:</p>	<p>During construction activities</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>
<ul style="list-style-type: none"> ● Prior to the start of any construction activity on the project site, a noise barrier shall be erected along a portion of the east property line of the project site, as illustrated in Figure 3-12 and described below. The barrier shall remain in place until all exterior construction activity is completed. <ul style="list-style-type: none"> ○ The north portion of the barrier shall have a minimum height of 7 feet and shall extend from at least 25 feet north of the residential property at 41837 50th Street to at least 25 feet south of the residential property. ○ The remainder (i.e., the south portion) of the barrier along the east side of the property shall have a minimum height of 6 feet and shall extend to the south property line of the project site. ○ All barrier heights are relative to the ground elevation at the property line. ○ The barrier shall be constructed from one or more of the materials described below. The barrier shall be continuous, without gaps between different materials or at the base of the barrier. 			

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<ul style="list-style-type: none"> ▪ Concrete block (note that the permanent block wall, as required under MM-NOI-3, to mitigate on-site noise impacts from project operations could be built prior to the start of project construction in order to form part of this construction noise barrier.) ▪ Acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum sound transmission class rating of 28 and a minimum noise reduction coefficient of 0.80 and be firmly secured to the framework, with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 4 inches at seams and taped and/or closed with hook-and-loop fasteners (i.e., Velcro®) so that no gaps exist. The largest blankets available should be used to minimize the number of seams. ▪ Plywood, at least 0.75 inch thick. The barrier shall be constructed so that there are no gaps between adjacent sheets of plywood. • Construction activities shall be limited to between 7 a.m. and 7 p.m. Monday through Friday and shall not occur at any time on weekends or legal holidays. Construction personnel shall not be permitted on the job site and 			

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<p>material or equipment deliveries and collections shall not be permitted outside of these hours.</p> <ul style="list-style-type: none"> ● All construction equipment used on the project site that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity. ● All construction equipment shall be properly maintained. (Poorly maintained equipment typically causes excessive noise levels.) ● All construction equipment shall be equipped with properly operating and maintained mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specification. ● All equipment shall be operated only when necessary and shall be switched off when not in use. ● The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. ● Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.) 			

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<ul style="list-style-type: none"> ● Storage, staging, parking, and maintenance areas on the project site shall be located as far away as possible from noise-sensitive receptors. ● Construction equipment, such as generators and compressors, on the project site shall be positioned as far away as possible from noise-sensitive receptors. ● Construction equipment shall be stored on the project site while in use whenever possible. This will eliminate noise associated with repeated transportation of the equipment to and from the site. ● Haul roads shall not be designated through noise-sensitive areas whenever possible. 	<p>During the architectural and engineering design phase of the project and prior to the issuance of any building permits</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>
<p>MM-NOI-2: The project HVAC system shall be designed to ensure that rooftop HVAC equipment complies with Section 12.08.390 of the Los Angeles County Code. During the architectural and engineering design phases of the project and prior to the issuance of any building permits for the library building, a County-approved acoustical consultant shall be retained by the contractor to evaluate the rooftop HVAC equipment and provide recommendations, as necessary, to ensure that the associated 1-hour noise levels do not exceed 55 dBA L₅₀ during the daytime (7 a.m. to 10 p.m.) or 50 dBA L₅₀ during the nighttime (10 p.m. to 7 a.m.), as measured at any</p>			

Mitigation Measure	Timeframe	Responsible Party for Implementation	Responsible Party for Monitoring and/or Reporting
<p>neighboring residential property. Such recommendations may include, but are not limited to, the selection of quieter rooftop units, changes in unit locations, changes to rooftop parapet walls, and acoustical louvers or screens.</p> <p>MM-NOI-3: A permanent noise barrier shall be constructed between the project site and the adjacent residential properties. A 6-foot-high (minimum) block wall shall be constructed at the south and east property line of the project site, adjacent to the neighboring residential properties, as illustrated in Figure 3-13. (Note that this block wall could be built prior to the start of project construction in order to form part of the construction noise barrier required under MM-NOI-1, as discussed above.)</p>	<p>During construction activities</p>	<p>The construction contractor</p>	<p>The County of Los Angeles</p>

QUARTZ HILL LIBRARY PROJECT

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION



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Acronyms and Abbreviations

°F	degrees Fahrenheit
AB 32	Assembly Bill 32
ADT	average daily traffic
amsl	above mean sea level
APE	area of potential effect
APN	assessor's parcel number
ARB	California Air Resources Board
AVAQMD	Antelope Valley Air Quality Management District
AVEK	Antelope Valley-East Kern Water Agency
AVTA	Antelope Valley Transit Authority
AVUHSD	Antelope Valley Unified High School District
BAU	business as usual
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CALGreen	California Green
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCAP	Community Climate Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	census-designated place
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
Construction General Permit	General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities
County	County of Los Angeles

CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted sound level
DBH	diameter at breast height
DHS	Department of Health Services
DOT	U.S. Department of Transportation
DPR	Los Angeles County Department of Parks and Recreation
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
du/ac	dwelling units per acre
DWR	Department of Water Resources
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESSC	Earth Systems Southern California
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Rate Insurance Maps
FTA	Federal Transit Administration
GHG	greenhouse gas
gpd	gallons per day
GWP	global warming potential
HA	Hydrologic Area
HCP	habitat conservation plan
HSC	Health and Safety Code
HU	Hydrologic Unit
HVAC	heating, ventilation, and air conditioning
ICF	ICF International
IPCC	Intergovernmental Panel on Climate Change
IRUWMP	Integrated Regional Urban Water Management Plan
IS	initial study
IS/MND	initial study/mitigated negative declaration
ITE	Institute of Transportation Engineers
LACFCD	Los Angeles County Flood Control District
LACFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sanitation District
Lahontan Water Board	Lahontan Regional Water Quality Control Board
LASD	Los Angeles County Sheriff's Department
LEED-NC	Leadership in Energy and Environmental Design for New Construction
L_{eq}	equivalent sound level
L_{max}	maximum sound level

L _{min}	minimum sound level
LOS	level of service
L _{xx}	percentile-exceeded sound level
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
Metro	Los Angeles County Metropolitan Transportation Authority
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
mgd	million gallons per day
mgd	million gallons per day
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MS4s	municipal separate storm sewer systems
MT	metric tons
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
ND	negative declaration
NO ₂	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
O ₃	ozone
OA	Operational Area
OAERP	Operational Area Emergency Response Plan
OEM	Office of Emergency Management
Pb	lead
PM ₁₀	particulate matter up to 10 micrometers in size
PM _{2.5}	particulate matter up to 2.5 micrometers in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
proposed project	Quartz Hill Library Project
RCNM	Roadway Construction Noise Model
REC	recognized environmental condition
Regional Water Boards	Regional Water Quality Control Boards
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SEAs	Significant Ecological Areas
SHMA	Seismic Hazards Mapping Act

SIP	State Implementation Plan
SMARA	Surface Mining Reclamation Act of 1975
SO ₂	sulfur dioxide
SR	State Route
ST	short term
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solids
TIA	Transportation Impact Analysis
U.S.C.	U.S. Government Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
V/C	vehicle to capacity
VOCs	volatile organic compounds
WUESD	Westside Union Elementary School District
µg/m ³	micrograms per cubic meter

Overview

The County of Los Angeles (County), as the lead agency under the California Environmental Quality Act (CEQA), has prepared this initial study (IS) and proposed mitigated negative declaration (MND) to evaluate environmental effects associated with the Quartz Hill Library Project (proposed project), which would be located on a 1.75-acre undeveloped parcel in an unincorporated area of the County.

Preparation of an Initial Study/ Mitigated Negative Declaration

When a proposed project, as defined under CEQA, involves a discretionary action,¹ the lead agency is required to prepare an environmental impact analysis and disclosure document. The intent of the document is to: (1) inform the decision-maker, responsible and trustee agencies, and the general public of the environmental effects of the project, and (2) mitigate those effects to the greatest extent feasible. However, if the lead agency determines that the proposed project is exempt from CEQA, an environmental impact analysis and disclosure document is not prepared; upon approval of the project, a notice of exemption may be filed by the lead agency or the applicant with the Office of Planning and Research or the county clerk.

Unless it is already determined that an environmental impact report (EIR) will be prepared and the lead agency will not prepare an IS for the project, or the proposed project falls within one of the CEQA-defined statutory exemption classes,² the lead agency often starts the documentation process by preparing an IS. Once completed, the IS provides the lead agency with direction on which level of CEQA documentation is appropriate for a given project. For projects where the IS determines that a potentially significant and unavoidable impact would occur, an EIR is appropriate.³ For projects that would have little to no effect on the environment, a categorical exemption is generally appropriate; for projects where there is no substantial evidence that a significant impact could occur, a negative declaration (ND) is generally appropriate.⁴ For projects where mitigation is needed to reduce a potentially significant impact, as identified in an IS, to a less-than-significant level and no significant unavoidable impacts would result, an MND is prepared.⁵

¹ See State CEQA Guidelines Section 15377 (“Private Project”) and Section 15378 (“Project”).

² See State CEQA Guidelines Sections 15250 to 15253 (“Statutory Exemptions”) and Sections 15300 to 15332 (“Categorical Exemptions”).

³ See State CEQA Guidelines Sections 15063 to 15065.

⁴ See State CEQA Guidelines Section 15300 and Section 15070.

⁵ See State CEQA Guidelines Section 15070.

Based on the results of the IS, the County has determined that the proposed project would result in less-than-significant impacts after mitigation is incorporated and no significant unavoidable impacts would occur. Therefore, the appropriate CEQA compliance document is an IS/MND.

Requirements of a Mitigated Negative Declaration

The preparation of an IS/MND is governed by two principal sets of documents: CEQA (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000, et seq.). Specifically, State CEQA Guidelines Section 15063 (“Initial Study”) and Sections 15070–15075 (“Negative Declaration Process”) guide the process for the preparation of an IS/MND. Where appropriate and supportive to an understanding of the issues, reference is made either to the statute, the State CEQA Guidelines, or appropriate case law.

This IS/MND, as required by State CEQA Guidelines Section 15071, contains (1) a brief description of the project, (2) the project location, (3) a proposed finding that the project will not have a significant effect on the environment, (4) a copy of the IS documenting support for the findings, and (5) all mitigation measures to be implemented.

Environmental Issues Addressed

This IS/MND evaluates the proposed project’s effects on the following resource topics.

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gas emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Mineral resources
- Noise
- Population and housing
- Public services
- Recreation
- Transportation and traffic
- Utilities and service systems
- Mandatory findings of significance

The environmental setting and impact analysis discussion for each of these topics is provided in Chapter 3, “Environmental Analysis.”

Document Organization and Content

The content and format of this IS/MND is designed to meet the requirements of CEQA. This report is organized as follows:

- Chapter 1, “Introduction and Overview,” identifies the purpose and scope of the IS/MND and the terminology used in the IS/MND.

- Chapter 2, “Project Description,” describes the location, general environmental setting, project background, project components, and the characteristics of the proposed project’s construction and operational phases.
- Chapter 3, “Environmental Analysis,” presents the environmental setting and impact analysis for each resource topic.
- Chapter 4, “References,” identifies all printed references and individuals cited in this IS/MND.
- Chapter 5, “List of Preparers and Persons Consulted,” identifies the individuals who prepared this report and their areas of technical expertise, as well as the individuals consulted for the preparation of this report.

Project Overview

The proposed Quartz Hill library project would include construction and operation of a new public library in the Business District of Quartz Hill, an unincorporated community in the Antelope Valley region of northern Los Angeles County. The County of Los Angeles is the lead agency under CEQA. The new library would be approximately 12,500 square feet in area and built on an undeveloped 1.75-acre parcel, which is located approximately 150 feet west of 50th Street West on Avenue M-2, a private street. The one-story library would include a community meeting room, public lobby, customer service desk, and outdoor learning courtyards. Parking would be provided in a 55-space surface parking lot, and the site would be improved with landscape and hardscape features. Access to the library would be from Avenue M-2. The new library would replace the existing 3,530-square-foot Quartz Hill library, which is located in a leased building approximately 0.2 mile north of the project site. The leased building would be surrendered to the private landlord upon completion of the proposed project. The establishment of a new library in Quartz Hill to meet the service needs of the anticipated local population is consistent with the County's long-range facility planning.

Construction is anticipated to begin in July 2015 and be completed within 13 months, including 2 months for installing fixtures, furnishings, and equipment in the new facility.

Existing Setting

Location and Vicinity

The project site is located in the Business District of the unincorporated Quartz Hill community in Los Angeles County. The cities of Palmdale and Lancaster are located 0.4 mile southeast and 0.5 mile northeast of Quartz Hill, respectively. For this project, the Business District of Quartz Hill is defined as 50th Street West from Avenue L to Avenue M-4, Avenue M from Quartz Hill Road to 52nd Street West, Avenue L-14 from 50th Street West to 51st Street West, and Avenue L between 42nd Street West and 47th Street West.

The project site is an undeveloped parcel located approximately 150 feet west of 50th Street West on Avenue M-2. This parcel was vacant land in 1917, had an orchard in 1928, and has been vacant since 1936. The assessor's parcel number (APN) for the site is 3101-013-058. Figure 2-1 shows the regional vicinity, and Figure 2-2 provides a project location map.

The nearest major street is 50th Street West, which runs north/south just east of the project site. Site access would be available from Avenue M-2, which runs east/west along the site's northern boundary. The surrounding land uses in the vicinity of the project site consist of a mix of residential, commercial, and vacant land. The site is adjacent to a Grange Hall, which is used as a meeting hall, to the east; single-family residences to the south and southeast; an auto body repair shop less than 200 feet to the west; and vacant land less than 200 feet to the north across Avenue M-2. State Route (SR) 14 is located approximately 3.7 miles to the east; SR-138 is located approximately 6.4 miles north of the project site.



Figure 2-1
Regional Vicinity Map
Los Angeles County Quartz Hill Library





Figure 2-2
Project Location Map
Los Angeles County Quartz Hill Library

Existing Site Conditions

According to Title 22 (Planning and Zoning) of the *Los Angeles County, California, Code of Ordinances* (County of Los Angeles 1927), more than half of the undeveloped project site is in an M-1 (Light Manufacturing) zone; an A-1 (Light Agriculture) zone is on the east side of the property. The site falls within the boundaries of the Antelope Valley Area Plan component of the *Los Angeles County General Plan 2035*. According to the adopted *Antelope Valley Areawide General Plan*, the planned land uses for the project site are M (Industry) and U-1 (Urban 1) (i.e., 1.1 to 3.3 dwelling units per acre [du/ac]) (County of Los Angeles, 1986). However, the *Los Angeles County General Plan 2035*, along with the Antelope Valley Area Plan, is currently being updated. Per the July 2014 *Preliminary Draft Antelope Valley Area Plan*, the planned land use for the project site is IL (Light Industrial) (County of Los Angeles 2014a, 2014b).

The project site, which is relatively flat, slopes to the north at an approximate 1 percent gradient. The site is open on all sides and has no fencing. The vegetation cover ranges from light to moderate and includes typical desert vegetation, consisting of weeds, grasses, brush, and bushes. In addition, various dirt trails are visible on the project site. Native soil on the site is composed of alluvial deposits, consisting primarily of silty soils and gravel; however, some of the upper 3 to 4 feet is relatively loose and non-uniform, with relatively low compaction. There are no existing stormwater drains on-site. Currently, water from properties to the south flows onto the site; however, the natural drainage flows northward and off the site. The closest storm drain is in 50th Street West, approximately 150 feet northeast of the site. Figures 2-3a through 2-3c provide photographs of the project site.

Adjacent land uses consist of a Grange Hall immediately to the east, single-family residences to the south and southeast, and an auto body repair shop less than 200 feet to the west. In addition, there is vacant land less than 200 feet to the north across Avenue M-2.

Proposed Project

Project Background

The County Public Library agency serves 50 of the 88 cities in the county and most unincorporated county areas (County of Los Angeles Public Library 2014a). The Quartz Hill community is currently served by the County Public Library's existing Quartz Hill Library, which was founded on July 24, 1959. The library is located in a leased 3,530-square-foot one-level building in the Quartz Hill Business District at 42018 North 50th Street West, Quartz Hill. The existing library is located approximately 0.2 mile north of the project site and has a children's area with a family space, a teen space, and a 24-hour book drop for returning items. The existing library had 112,801 visitors last year and 3,712 people attended library programs (Keledjian pers. comm.). The new library is expected to have approximately 201,000 visitors annually (Hungerford pers. comm.). Upon completion of the proposed project, the existing library facility would be surrendered to the landlord and would no longer operate as a County library; the educational resources from the existing library would be transferred, as needed, to the new Quartz Hill public library on Avenue M-2. The new library would serve as the permanent library for the community of Quartz Hill.



Looking southwest from the intersection of Avenue M2 and 50th St West.
Project site is in the background



Looking southwest from Avenue M2 at the project site

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Figure 2-3a
Site Photographs
Los Angeles County Quartz Hill Library



Looking south at single family residence in the background and Avenue M2 in the foreground.
Photo taken from across Avenue M2.



Looking southwest from Avenue M2 with the Auto Body repair shop seen to the west of the site.

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Figure 2-3b
Site Photographs
Los Angeles County Quartz Hill Library



Looking east from the project site at Grange Hall.



Looking north from the middle of the project site. Vacant land across Avenue M2 seen in the northeast corner in the background.

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Figure 2-3c
Site Photographs
Los Angeles County Quartz Hill Library

Project Characteristics

The proposed project involves the construction of a public library in the Business District of Quartz Hill. The new library would replace the existing Quartz Hill library, which is located in a leased building. The proposed library would be approximately 12,500 square feet in area and constructed on a currently undeveloped 1.75-acre parcel located about 150 feet southwest of 50th Street West on Avenue M-2, which is a private street. This parcel was vacant land in 1917, had an orchard in 1928, and has been vacant since 1936. Access to the library would be from Avenue M-2. Parking would be provided in a 55-space surface parking lot located alongside 50th Street West, and the entire site would be improved with landscape and hardscape features. Utilities would be extended to support the proposed project.

The proposed library would be a one-story facility with a height of up to 30 feet. It would be designed to achieve a U.S. Green Building Council Leadership in Energy and Environmental Design for New Construction (LEED-NC) silver rating. The conceptual design includes reading rooms; library support rooms and offices, including a customer service desk; a public lobby; a kitchen; a community meeting room; outdoor learning courtyards; and covered service areas for daily shipments and deliveries. The proposed library's conceptual design incorporates solar panels on the roof, bioswales, an underground stormwater detention system, and a sustainable landscape design that takes into consideration the desert conditions of the area and emphasizes drought-tolerant plant materials, rainwater capture systems, and an irrigation design that utilizes highly efficient systems. Further, all fixtures and appliances installed at the library would, at minimum, follow the 2013 California Green (CALGreen) Building Standards that came into effect in July 2014. Figure 2-4 shows the conceptual site plan, and Figure 2-5 shows the conceptual illustrative plan for the proposed project. Figure 2-6 shows the conceptual design as seen from Avenue M-2.

Project Construction

All proposed construction activities would take place within the existing undeveloped lot. Equipment staging and material laydown areas would also be on-site. However, off-site work related to utility connections, right-of-way setback improvements, and street improvements, such as grading, compacting, and paving, would be required. The off-site construction work would be staged on-site to the maximum extent feasible.

Site preparation would disturb the entire 1.75 acres. Excavation and fill work would be performed on-site, and approximately 2,500 cubic yards of soil would be over-excavated and recompacted to create the building pad, parking lot, and perimeter bioswale. The maximum depth for over-excavation and recompaction would be approximately 5 feet in the building pad area; excavation depths for the sewer and underground stormwater detention system could be slightly greater. The maximum depth for fill would be about 4 feet in the northern area to create a level building pad. Approximately 500 cubic yards of soil is anticipated to be exported off-site.

The entire 1.75-acre site is currently pervious. Once construction is complete, approximately 1.1 acres would remain pervious.

Construction would consist of the following phases:

- Grading, foundations, and slab-on-grade
- On- and off-site utility work and improvements
- Structure and framing



Figure 2-4
Conceptual Master Plan- Site Plan
Los Angeles County Quartz Hill Library

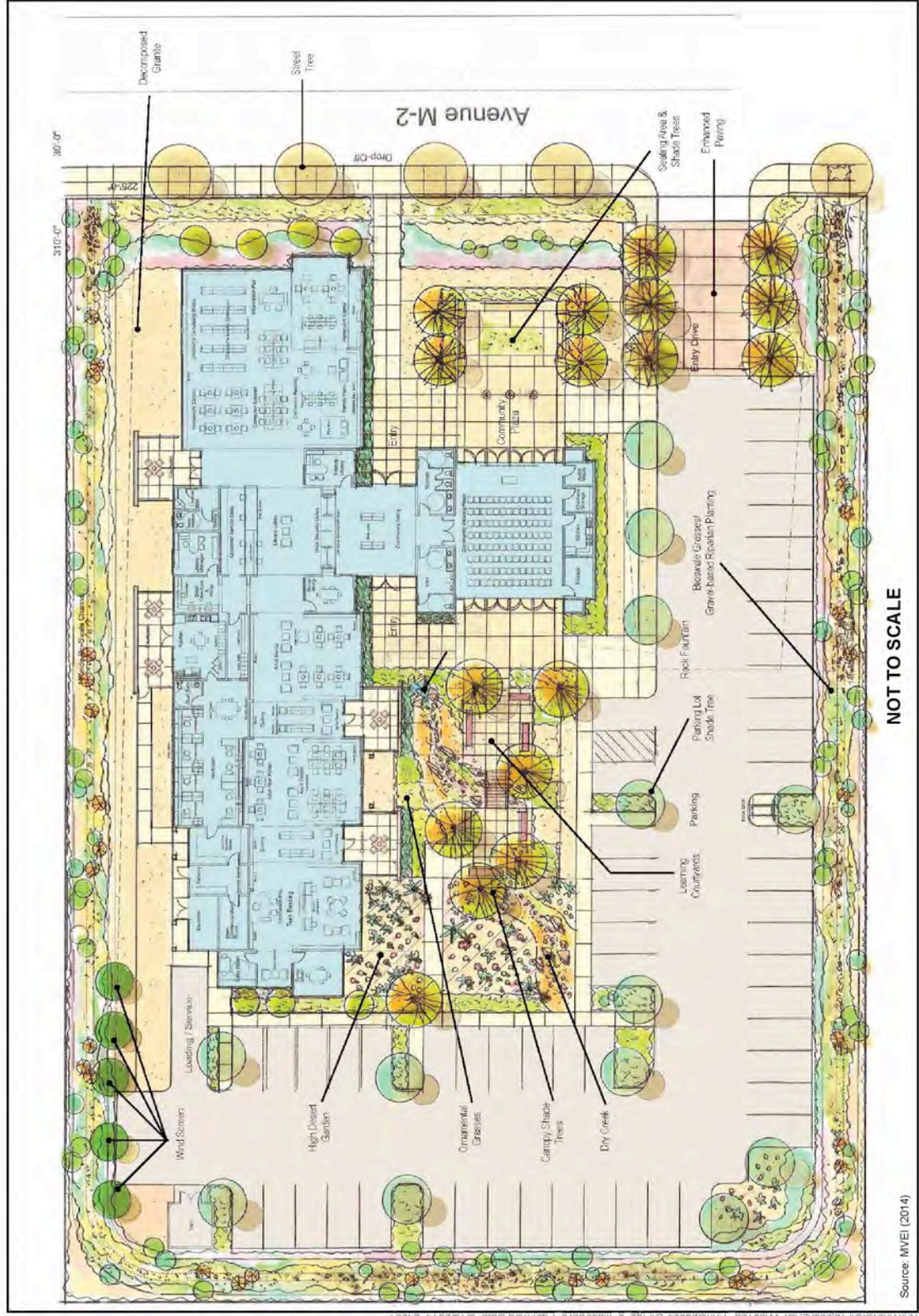


Figure 2-5
Conceptual Master Plan- Illustrative Plan
Los Angeles County Quartz Hill Library

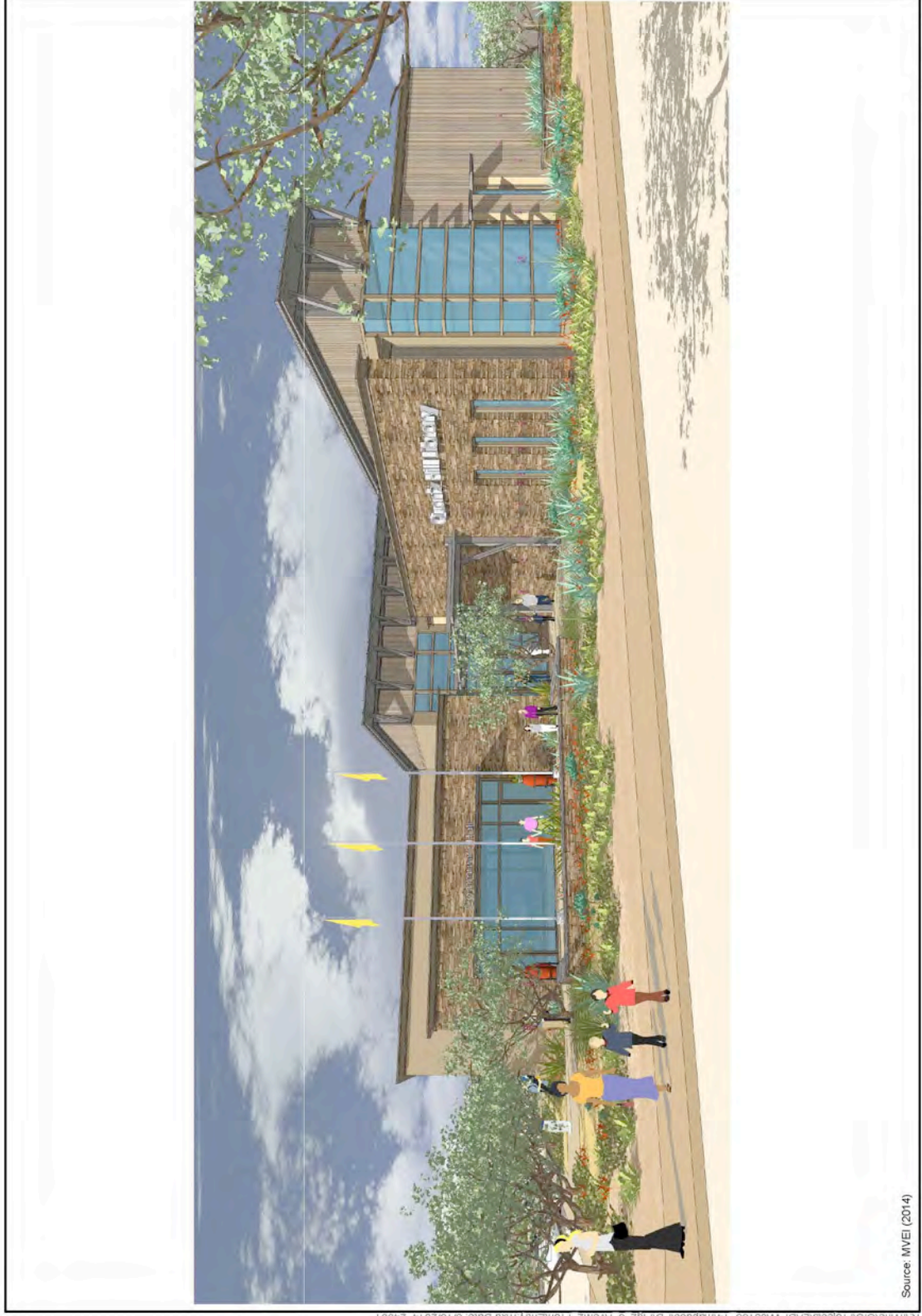


Figure 2-6
Conceptual Design of the library as seen from Avenue M2/Front Entry
Los Angeles County Quartz Hill Library

- Rough-ins, exterior skin, and roofing
- Interior finishes
- Exterior hardscape and landscape
- Fixtures, furnishings, and equipment

Section III, Air Quality, provides additional details regarding construction phases, and Appendix A includes specifics regarding construction times and potential phase overlapping.

Construction would be carried out with equipment and tools that are typical for building construction projects, including backhoes, delivery trucks, concrete trucks, trash trucks, compactors, pavers, graders, scrapers, trenchers, forklifts, and plaster applicators. Construction vehicles would include the workers' commute vehicles, equipment trucks, delivery trucks, concrete trucks, light trucks, and haul trucks.

Construction would take place between the hours of 7 a.m. and 5 p.m. Monday through Friday and is anticipated to start in July 2015 and last for 13 months, including 11 months for construction and 2 months for installing fixtures, furniture, and equipment. Any additional work periods would be restricted to emergencies or special situations only. No activities are planned to occur on-site outside of the specified hours or on weekends.

Related Projects

Cumulative impacts are the project's environmental impacts combined with the environmental impacts of other related past, present, and reasonably foreseeable future projects. As stated in CEQA, Title 14, Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable." In addition, as stated in the State CEQA Guidelines, it should be noted that "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are cumulatively considerable" (CCR, Title 14, Division 6, Chapter 3, Section 15064(I)(5)).

According to the State CEQA Guidelines:

Cumulative impacts refer to two or more individual effects that, when considered together, are considerable and compound or increase other environmental impacts.

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CCR, Title 14, Division 6, Chapter 3, Section 15355).

As set forth in the State CEQA Guidelines, related projects consist of "closely related past, present, and reasonably foreseeable probable future projects that would be likely to result in similar impacts and be located in the same geographic area" (CCR, Title 14, Division 6, Chapter 3, Section 15355). The cumulative analysis in this IS/MND includes all projects within a 1.5-mile radius of the proposed project, per the County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines, because of the proximity of past, present, and reasonably foreseeable future

projects to the proposed project and their potential to affect resources similar to those that would be affected by the proposed project. For environmental factors where a geographic scope larger than the 1.5-mile radius is more appropriate for the consideration of cumulative impacts, it is specified in the cumulative impacts analysis for that particular environmental factor. No projects were identified in the city of Lancaster. Table 2-1 provides a list of related projects. The map numbers listed in the first column correspond to the projects depicted in Figure 2-7.

Cumulative impact discussions for each environmental topic area are provided at the end of each technical analysis contained in Chapter 3 under “Cumulative Impacts.”

CEQA Finding

Changes or alterations have been required in, or incorporated into, the proposed project that mitigate or avoid project-related significant effects on the environment. Chapter 3 contains the complete environmental analysis. Proposed mitigation measures, which are also contained in Chapter 3, will be provided in a separate mitigation monitoring and reporting program (MMRP). The MMRP would be recommended to the Los Angeles County Board of Supervisors for adoption along with the MND.

Project Review and Approvals

The County is the lead agency under CEQA and is responsible for permitting the project. The following permits and approvals would be required to construct the proposed project:

- County of Los Angeles Board of Supervisors (lead agency)
 - Approval of the project
 - Approval of the MND
 - Adoption of the MMRP
 - Implementation and oversight of the MMRP
- Los Angeles County Department of Regional Planning
 - Site Plan Review
 - Issuance of demolition, grading, foundation, and building permits
- South Coast Air Quality Management District
 - Issuance of a Generator Permit

Table 2-1: Related Projects within 1.5 Miles of the Project Site

Map Number	Description	Address/Location	Size	Project Proponent	Current Project/Entitlement Status	Environmental Document Status	Time Period for Proposed Construction of Project
1	Single-family lots	4748 West Avenue M-12	Two single-family lots proposed	Michael Depafquale	Approved in 2005	ND adopted in 2004	Complete; map recording possible but unknown
2	Proposed retail, carwash, and automotive service station (no gas)	Northeast corner of 50 th Street West and West Avenue L-2	18,995 sq. ft. for retail, 2,500 sq. ft. for carwash, and 7,575 sq. ft. for automotive service station	Ernest Ramirez	Permit approval expired in October 2012 because of non-use; applicant did not submit fees or affidavit	None	Proposed lot is vacant
3	General office for a public utility service center	Southwest corner of 50 th Street West and West Avenue	7,944 sq. ft.	Quartz Hill Water District	Approved 2013	MND approved in 2013	Building permits were applied for earlier in the year; most likely under construction
4	Single-family lots	South of 47 th Street between Avenue M and Quartz Hill Road	Nine single-family lots proposed	Joseph Murat	Project was withdrawn September 2014; case is closed (applicant would need to start a new project application process to move forward)	None	N/A

Source: Intueor Consulting, Inc. 2014; Avalos pers. comm.; Taylor pers. comm.
 Note: N/A = not applicable.

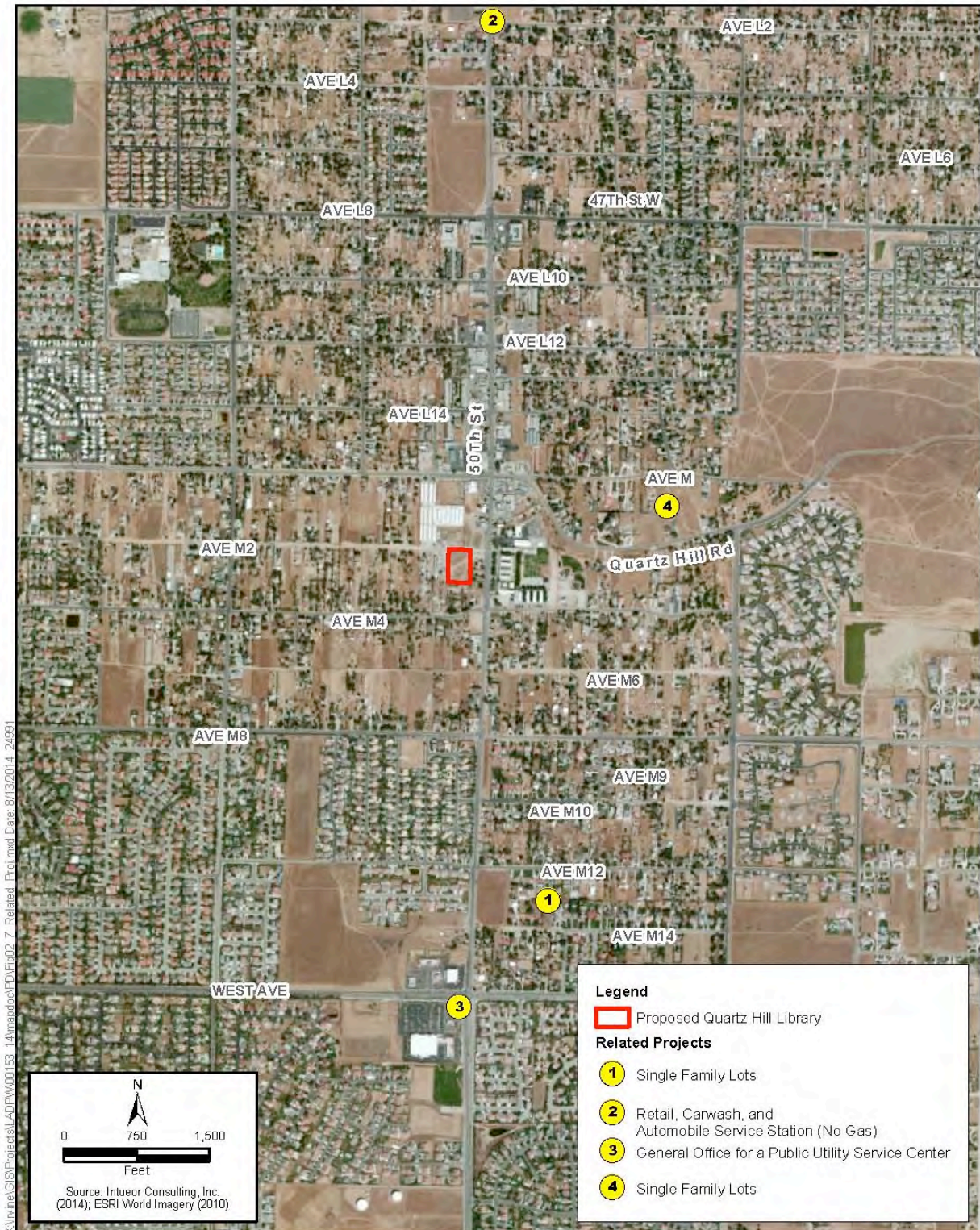


Figure 2-7
Related Projects
Los Angeles County Quartz Hill Library

Chapter 3

Environmental Analysis

1. Project Title: Quartz Hill Library Project
2. Lead Agency Name and Address: County of Los Angeles
Chief Executive Office
500 West Temple Street
Los Angeles, CA 90012
3. Contact Person and Phone Number: Alisa Chepeian, Project Manager
Chief Executive Office
500 West Temple Street
Los Angeles, CA 90012
(213) 974-4266
4. Project Location: The project is located within the unincorporated community of Quartz Hill in Los Angeles County, California, on an undeveloped parcel approximately 150 feet west of 50th Street West on Avenue M-2. The assessor's parcel number is 3101-013-058 (see Figures 2-1 and 2-2).
5. Project Sponsor's Name and Address: County of Los Angeles
Chief Executive Office
500 West Temple Street
Los Angeles, CA 90012
6. General Plan Designation: M (Industry) and U-1 (Urban 1) (i.e., 1.1 to 3.3 dwelling units per acre [du/ac]) per the adopted Antelope Valley Areawide General Plan.
7. Zoning: M-1 (Light Manufacturing) and A-1 (Light Agriculture) per the County of Los Angeles's Zoning Ordinance
8. Description of Project: The County is proposing to construct and operate a new public library in Quartz Hill, an unincorporated community in the Antelope Valley region of northern Los Angeles County (see Chapter 2). The library would replace a smaller County library, which currently operates nearby.
9. Surrounding Land Uses and Setting: Residential, commercial, and vacant land (see Chapter 2).
10. Other Public Agencies Whose Approval Is Required: None

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a “Potentially Significant Impact” or “Less than Significant with Mitigation Incorporated”), as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality |
| <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

Determination

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have an impact on the environment that is “potentially significant” or “potentially significant unless mitigated” but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature 

January 9, 2015

Date

Alisa Chepeian

Chief Executive Office

Printed Name

Agency

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an environmental impact report (EIR) is required.
4. “Negative Declaration: Less than Significant with Mitigation Incorporated” applies when the incorporation of mitigation measures has reduced an effect from a “Potentially Significant Impact” to a “Less-than-Significant Impact.” The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level.
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where earlier analyses are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less than Significant with Mitigation Incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.

9. The explanation of each issue should identify:
 - a. the significance criteria or threshold, if any, used to evaluate each question; and
 - b. the mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

The thresholds that have been identified to determine the significance of project impacts are generally based on the environmental checklist questions in Appendix G of the State CEQA Guidelines. Where agencies that have jurisdiction over resources that could be affected by the proposed project have established specific quantifiable thresholds, those thresholds have been used to determine the significance of project impacts.

I. Aesthetics		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Visual Conditions

The project site is located in unincorporated Los Angeles County in the community of Quartz Hill. The relatively flat ground on the rectangular site slopes to the north at an approximate 1 percent gradient. The project site is situated behind the one-story Grange Hall, which fronts 50th Street West. The site is approximately 150 feet west of 50th Street West on Avenue M-2, a private road.

Existing visual conditions at the project site include vacant, unimproved land that is vegetated with a light to moderate covering of typical desert vegetation. Specifically, vegetation at the site consists of weeds, grasses, brush, and bushes. Two large bushes are located in the central portion of the site. No oak trees or special-status species are located on the project site, and no structures or paved areas are found on the site. However, a few dirt paths are scattered throughout the site.

The visual character of the surrounding area lacks visual consistency because the surrounding uses display varying ages, architectural styles, and massing. The project site is immediately surrounded by a one-story structure (Grange Hall, used as a meeting hall) to the east, a one-story single-family residence to the south, an auto body repair shop to the west, and warehouses and vacant land across Avenue M-2 to the north. The Grange Hall borders the site to the east, and the single-family residence borders the site to the south. The auto body repair shop is located less than 200 feet to the west. The warehouses and vacant land are located less than 200 feet to the north.

Figures 3-1 and 3-2 depict the visual character of the site and surrounding area. As shown in these figures, the undeveloped site has low visual quality and is covered with mostly grasses and weeds. Partial views of the Leona Valley hills can be seen when looking east and southeast from the site.



Looking southwest from the intersection of Avenue M2 and 50th St West. Project site is in the background



Looking southwest from Avenue M2 at the project site

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Figure 3-1
Site Photographs
Los Angeles County Quartz Hill Library



Looking south at single family residence in the background and Avenue M2 in the foreground.
Photo taken from across Avenue M2.



Looking southwest from Avenue M2 with the Auto Body repair shop seen to the west of the site.

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Figure 3-2
Site Photographs
Los Angeles County Quartz Hill Library

Viewer Groups and Scenic Resources

Viewer groups are broadly characterized as having public or private views. Public views, such as views from a neighborhood park or public roadway, are available to all visual receptors. Private views, however, are exclusive to property owners and their guests or members; the properties involved can be residences and private facilities (e.g., religious institutions or a community area of a homeowners' association).

Limited public views of the project site are available from 50th Street West while traveling northbound. However, most views are blocked by the Grange Hall and single-family residences that front the street. The project site is more visible from 50th Street West when traveling southbound and approaching the Avenue M-2/50th Street West intersection, as shown in Figure 3-3. An unobstructed view of the project site is available from Avenue M-2, which, as previously stated, is a private road.

Scenic Resources

The project site is relatively flat land and not located adjacent to any hillsides. The site consists of undeveloped land and is not occupied by any structures. Therefore, no historic structures are located on the project site. See Section V, Cultural Resources, for a discussion of historic resources.

There is one officially designated State Scenic Highway (State Route 2) and two officially designated County Scenic Highways in Los Angeles County (California Department of Transportation 2014).

The following are the designated scenic highways within Los Angeles County, along with their approximate distances from the project site:

- Angeles Crest Highway (State Route 2), from just north of Interstate 210 to the Los Angeles/San Bernardino county line. The highway is more than 50 miles south of the project site.
- Mulholland Highway from State Route 1 to Kanan Dume Road and west of Cornell Road to east of Las Virgenes Road. The highway is more than 60 miles southwest of the project site.
- Malibu Canyon Road-Las Virgenes Road, from State Route 1 to Lost Hills Road. (California Department of Transportation 2014.) The road is more than 70 miles southwest of the project site.

The project site is not located along or in the vicinity of these designated roadways.

The project site does not contain any rock outcroppings. Two large bushes are located in the central portion of the site.



Looking east from the project site at Grange Hall.



Looking north from the middle of the project site. Vacant land across Avenue M2 seen in the northeast corner in the background.

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Figure 3-3
Site Photographs
Los Angeles County Quartz Hill Library

Impact Analysis

Would the project:

a. Have a substantial adverse effect on a scenic vista?

The term “scenic vista” typically refers to views of an area that is visually or aesthetically pleasing, including, but not limited to, natural lands or developed and undeveloped natural areas. The project site is located in the Business District of the Quartz Hill community. It is not part of a scenic vista or located within a designated scenic corridor.

Under existing conditions, the project site is visible to motorists while traveling southbound on 50th Street West and approaching the 50th Street West/West Avenue M-2 intersection. It is also visible from West Avenue M-2 when looking south. Views of the project site from these vantage points currently include the desert vegetation (i.e., grasses, bushes, and weeds) that grows on the vacant property. Existing views of the project site are considered to be of low visual quality. Although limited views of the Leona Valley hills are available from this area, these views are partially blocked by the trees in the immediate project area.

Construction

Less-than-significant impact. The proposed project would involve the construction of a single-story, 12,500-square-foot library with parking lot and the installation of landscaping. Additionally, under the proposed project, a 6-foot wall (minimum height) would be constructed on the southern border of the property and along part of the eastern border. Construction of the proposed project would not obstruct any valued public views.

Operation

Less-than-significant impact. Operation of the proposed project would not obstruct any valued public views. Figures 3-4 and 3-5 provide renderings of the proposed project, including the proposed structure and courtyard. As shown in these figures, the proposed project would be visible from West Avenue M-2. Specifically, the one-story structure, along with trees and landscaping in the proposed community plaza, would be visible from the roadway. The trees that are associated with the adjacent single-family residences would continue to interrupt views of the surrounding hills.

Trees would be used to buffer the project site from surrounding land uses located to the east, west, and south. The proposed one-story library would be approximately 30 feet in height; it would not be expected to block any valued public views. Accordingly, operation of the proposed project would not be expected to change the view in a manner that would result in a substantial adverse effect on a scenic vista, and the impacts would be less than significant.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?

Construction

No impact. As previously discussed, the project site is not located along or in the vicinity of any designated scenic highways. Additionally, the project site does not contain any historic buildings, oak trees, or prominent rock outcroppings. The two large bushes that are currently located on the site would be removed as part of the proposed project. The bushes are not considered to be of scenic



Figure 3-4
Conceptual Design of the library as seen from Avenue M2/Front Entry
Los Angeles County Quartz Hill Library

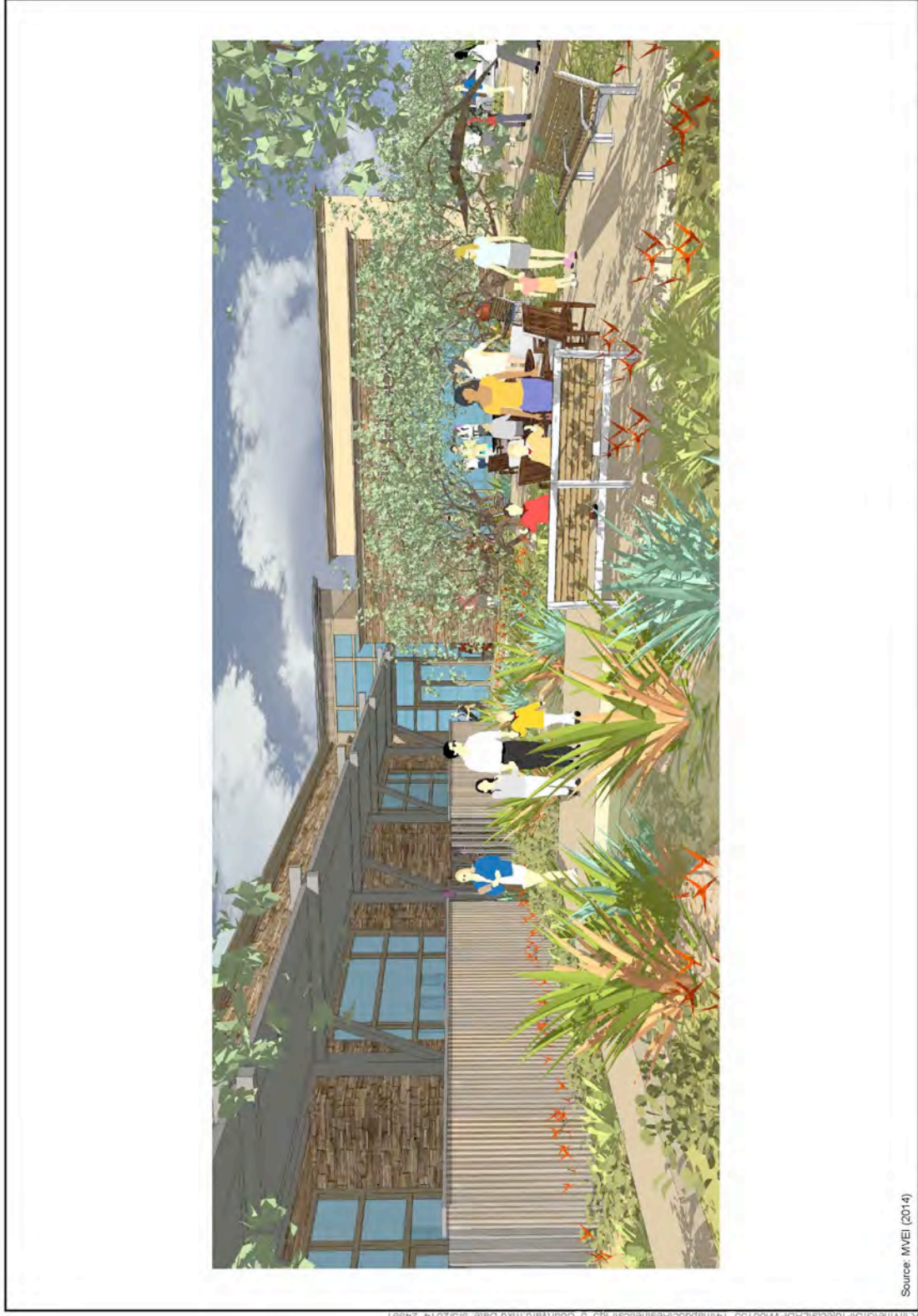


Figure 3-5
Conceptual Design of the library as seen from the Courtyard
Los Angeles County Quartz Hill Library

value. Proposed construction of the one-story library and associated parking and the installation of ornamental landscaping would not damage scenic resources, protected trees, or rock outcroppings. Therefore, construction of the project would have no impact on scenic resources.

Operation

No impact. For the same reasons discussed for construction, operation of the proposed project would not damage scenic resources, protected trees, or rock outcroppings. Therefore, operation of the project would have no impact on scenic resources.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

The project site is currently undeveloped. It contains typical desert vegetation, including weeds, grasses, and bushes. In its existing condition, the site is considered to be of low visual quality.

Construction

Less-than-significant impact with mitigation incorporated. Construction activities associated with the proposed project would last approximately 13 months. As previously described, existing vegetation on the site is not considered to be of great scenic value. Removal of vegetation during construction would not result in a significant impact. Various pieces of construction equipment, materials, and stockpiled soils would occupy the site during the construction period. These construction elements could temporarily degrade the visual character of the project site. Mitigation measure AES-1 is recommended to reduce visual impacts during construction activities. This would result in a less-than-significant-impact with mitigation incorporated.

Operation

Less-than-significant impact. The proposed project would introduce a new library, surface parking, and landscaped areas to the site. The proposed library structure and associated landscaping would enhance the visual character of the project site and be visually compatible in mass and scale with the mix of single-story land uses in the surrounding area.

The design of the proposed library would include features that would maintain compatibility with the surrounding visual environment. The linear one-story building design would be organized around a central area with a metal canopy that would run north/south along the eastern façade of the structure. The architectural language would be inspired by the natural environment. Desert-like in nature, the building's massing would consist of south-facing canted roof forms with subtle earth tones, stone, and metal canopies for shade.

One of the project objectives is to maintain existing street landscaping and provide new landscaping to soften the architectural design and create a pleasant, attractive street appearance that compliments the surrounding area. Figure 3-5 shows the landscaping that would be included under the proposed project. The landscape palette for the Quartz Hill Library takes into consideration both climate and environmental factors. The design emphasizes drought-tolerant plant materials and takes into consideration the placement of windbreaks, rainwater capture, and highly efficient irrigation designs with drip and bubbler emitters. The specific plant materials would be high-desert adaptable (many of these plants have a great floral season display); the plants would help the library conserve water, offer comfort and livability, be low-maintenance species, and reinforce the high-desert environment. Tree selections would be a mix of palo verde, mesquite, chitalpa, flowering locust, fruitless olive, and crape myrtle. Date palms would be located at the front of the community

plaza, with pines and cottonwoods used as windbreaks; blue elderberries and willows would be found within the bioswale. Thus, although the project would result in a change in the visual appearance of the site, this change would enhance the visual character of the site and the surrounding area. Proposed development would be compatible with surrounding development, providing landscaping features that would enhance the visual character and quality of the site and surrounding area. Impacts would be less than significant.

d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Construction

Less-than-significant impact. All construction lighting would conform to Los Angeles County requirements and guidelines and be directed away from sensitive uses, including nearby residences. Although construction activities would not occur during nighttime hours, security lighting would be installed in the proposed structure during construction. This would consist of string lights with incandescent bulbs and would illuminate only the interior of the structure. The lighting would help police and security patrols observe the site. Project construction activities would not adversely affect daytime or nighttime views in the area. This would be considered a less-than-significant impact.

Operation

Less-than-significant impact. The proposed project would introduce new lighting to the area during evening hours, including interior and exterior lighting for the library and standard safety lighting for the parking lot. New signage and lighting along walkways and in parking areas would incorporate LEED-certified, energy-efficient fixtures. To control daytime lighting effects within the building's interior spaces and prevent glare, windows would be outfitted with high-performance low-E glass, and each reading area would have operable interior shades, where needed. In addition, fixtures would be positioned to direct light toward the ground, which would avoid spillover and sky-glow lighting effects while providing for adequate safety and security at the library. As such, the potential for spillover and glare impacts on adjacent residential properties would be low. Although light from vehicles that enter the proposed parking lot may result in spillover, existing vegetation would screen the light, as would the proposed wall that, under the proposed project, would be included on the southern border and along part of the eastern border of the site. The additional light from vehicles is not anticipated to result in a significant impact during project operation. The proposed library would be designed with appropriate colors and textures as well as non-reflective materials. These elements would be integrated into the adjoining landscape so as not to produce substantial glare, spillover light, or sky-glow effects. All proposed lighting would conform to applicable Los Angeles County lighting guidelines and requirements. This would be a less-than-significant impact.

Mitigation Measures

The following mitigation measure is recommended to reduce construction impacts related to the visual character of the site:

MM AES-1: The construction contractor shall use appropriate screening (i.e., temporary fencing with opaque materials) to buffer views of construction equipment as well as materials and soil in construction staging areas.

Cumulative Impacts

The geographic scope of the cumulative aesthetics analysis is the area surrounding the project site and the four related projects identified in Table 2-1 that are located within a 1.5-mile radius of the project site. The related projects include single-family residences as well as office and retail uses. None of these projects would be located within the viewshed of the proposed project. No scenic vistas or scenic corridors have been identified within the project viewshed. As discussed above, the scale and mass of the proposed structure would be visually compatible with surrounding land uses. The design of the proposed library would include features that would maintain compatibility with the surrounding visual environment. The proposed project would also maintain existing street landscaping and provide new landscaping that would soften the architectural design and create a pleasant, attractive street appearance that would complement the surrounding area.

A mitigation measure is recommended to screen equipment during construction. With the implementation of this mitigation measure, visual impacts would be less than significant. Similar to the proposed project, any lighting proposed in conjunction with new construction in the area would be required to be directed on-site to avoid spillover effects. No combined effect on aesthetics would be expected to occur as a result of the related projects and the proposed project. Therefore, cumulative impacts would be less than significant.

II. Agriculture and Forest Resources	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project, the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
<p>a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>c. Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d. Result in the loss of forestland or conversion of forestland to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>e. Involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is an undeveloped, unimproved 1.75 acre parcel located in the Business District of Quartz Hill. The project site consists of relatively flat ground that slopes to the north at an approximate 1 percent gradient. There is less than 5 feet of elevation differential across the site.

The project site formerly contained of an orchard; however, the project site has not been used for agricultural purposes for almost 80 years. The project site is currently vegetated with a light to moderate covering of typical desert vegetation, consisting of weeds, grasses, and brush. Approximately two-thirds of the project site is zoned M-1, Light Manufacturing. One-third of the project site is zoned A-1, Light Agriculture (see Figure 3-9 in Section X, Land Use).

Impact Analysis

Would the project:

- a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?***

Construction

No impact. The California Department of Conservation, Division of Land Protection, lists Prime Farmland, Unique Farmland, and Farmland of Statewide Importance under the general category of “Important Farmland.” The California Important Farmland Finder, maintained by the Division of Land Protection, indicates that the project site, which is within in the Quartz Hill Business District, is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation 2014). Therefore, construction impacts associated with the proposed project would not convert such Farmland to nonagricultural use, and no impact would occur.

Operation

No impact. As stated above, the project site is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation 2014). Therefore, operational impacts associated with the proposed project would not convert such Farmland to nonagricultural use, and no impact would occur.

- b. *Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?***

Construction

No impact. The project site is located in the Quartz Hill Business District. According to Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances, the project site is zoned M-1, Light Manufacturing, and A-1, Light Agriculture. While a portion of the project site is zoned for agricultural use, it does not contain active, productive farmland. The proposed 12,500-square-foot library would be constructed on the portion of the project site zoned M-1. The associated parking area would be constructed on land zoned A-1. A parking area is an allowed use in land zoned A-1. The project site is not under Williamson Act contract, which is a legal document that obligates a property owner, and any successors of interest, to enforceable restrictions regarding a property’s agricultural and compatible open-space use. Construction activities associated with the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, no impacts would occur.

Operation

No impact. As stated above, the project site is zoned M-1, Light Manufacturing, and A-1, Light Agriculture. While a portion of the project site is zoned for agricultural use, it does not contain active, productive farmland. The proposed 12,500-square-foot library would be constructed on the

portion of the project site zoned M-1. The associated parking area would be constructed on land zoned A-1. A parking area is an allowed use in land zoned A-1. The project site is not under Williamson Act contract. Operational activities associated with the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, a less-than-significant impact would occur.

- c. *Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?***

Construction

No impact. According to the Los Angeles County Zoning Ordinance (Ord. 1494, Ch. 1, Art. 1, Sections 100 and 108, 1927), the project site is not zoned as forestland, timberland, or timberland zoned Timberland Production. The project site does not contain forestland or timberland. Therefore, construction activities associated with the proposed project would not conflict with existing zoning or cause rezoning of forest or timberland, and no impact would occur.

Operation

No impact. As stated above, the project site is not zoned as forestland, timberland, or timberland zoned Timberland Production. The project site does not contain forestland or timberland. Therefore, operational activities associated with the proposed project would not conflict with existing zoning or cause rezoning of forest or timberland. No impact would occur.

- d. *Result in the loss of forestland or conversion of forestland to non-forest use?***

Construction

No impact. The project site is not located on or near forestland. As a result, construction activities associated with the proposed project would not result in the loss or conversion of forest land, and no impact would occur.

Operation

No impact. The project site is not located on or near forestland. As a result, operational activities associated with the proposed project would not result in the loss or conversion of forest land, and no impact would occur.

- e. *Involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?***

Construction

No impact. The proposed project would not involve other changes in the existing environment that would result in the conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forest land. The project site is not located in the vicinity of Prime Farmland, Unique Farmland, Farmland of Statewide importance, or forest land and would therefore not convert such land to non-agricultural and non-forest uses. Therefore, construction activities associated with the proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Operation

No impact. As stated above, the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forest land. The project site is not located in the vicinity of Prime Farmland, Unique Farmland, Farmland of Statewide importance, or forest land and would, therefore, not convert such land to non-agricultural and non-forest uses. Therefore, operational activities associated with the proposed project would not involve other changes in the existing environment that, due to their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures

No potentially significant impacts related to agricultural resources would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. Four related projects located within 1.5 miles of the project site are considered in the cumulative impacts analysis because of their proximity to the site and their potential to affect resources similar to those that would be affected by the proposed project. The four related projects include development of two single-family lots at 4748 West Avenue M-12; a proposed retail, carwash, and automobile service station at the northeast corner of 50th Street West and West Avenue L-2; an office or a public utility service center at the southwest corner of 50th Street West and West Avenue; and the development of nine single-family lots south of 47th Street between Avenue M and Quartz Hill Road.

The other related projects, if approved, would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, and they would not involve other changes in the existing environment that would result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The related projects would also not conflict with existing zoning, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production. Two of the related projects would result in the development of single-family homes on a small amount of land zoned R-A, Residential Agriculture. However, single-family residences are an allowed use in land zoned R-A. Therefore, the related projects would not conflict with existing zoning for agricultural use.

As discussed above, the proposed project would not result in any potentially significant impacts to agriculture and forest resources. The proposed project would not directly convert, or result in other changes that would convert, Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forest land to non-agricultural or non-forest uses. The proposed project would, however, convert a small amount of land zoned for agricultural use to accommodate construction of the library. However, none of the project site is considered to be productive agricultural land. Furthermore, a parking area is an allowed use in land zoned A-1. Therefore, the proposed project would be consistent with, and would not conflict with, the existing zoning within the project site. Thus, cumulative agricultural impacts would be less than significant.

III. Air Quality

When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The area potentially affected by the proposed project is within the Antelope Valley portion of unincorporated Los Angeles County. This section describes the existing environmental setting and describes the regional and local climatology and air quality conditions in the project area.

Regional Setting

The project area lies within the Antelope Valley portion of the Mojave Desert Air Basin (MDAB). The MDAB, with its assemblage of mountain ranges, is interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise 1,000 to 4,000 feet above the valley floor. The MDAB is separated from Southern California, the Central Valley, and coastal regions by mountains (highest elevation is approximately 10,000 feet). Mountain passes form channels for air masses.

The Antelope Valley is bordered to the northwest by the Tehachapi Mountains and separated from the Sierra Nevada to the north by Tehachapi Pass (3,800 feet). The Antelope Valley is bordered to the south by the San Gabriel Mountains and bisected by Soledad Canyon (3,300 feet) (Antelope Valley Air Quality Management District 2011).

During the summer the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between 3 and 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation), with maximum average temperatures exceeding 100 degrees Fahrenheit (°F) at least 3 months per year. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB (Antelope Valley Air Quality Management District 2011.)

Existing Air Quality in the Region

The U.S. Environmental Protection Agency (EPA) and California Air Resources Board (ARB) maintain an extensive network of monitoring stations throughout California, and existing air quality conditions in the project area can be characterized by monitoring data collected by these stations. The only air quality monitoring station within the Antelope Valley is the Lancaster-Division Street station, approximately 5 miles to the northeast of the project site. Table 3-1 presents pollutant concentrations measured at the Lancaster-Division Street monitoring station for the past 3 years for which complete data are available (2010–2012). Concentrations are typically measured in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). As shown in Table 3-1, the monitoring station has experienced frequent violations of the state and federal ozone (O_3) standards as well as a violation of federal particulate matter up to 2.5 micrometers in size (PM_{2.5}) in 2011 and both state and federal particulate matter up to 10 micrometers in size (PM₁₀) in 2013.

Table 3-1. Ambient Background Concentrations from the Lancaster-Division Street Monitoring Station

Pollutant Standards		2011	2012	2013
1-Hour Ozone (O_3)				
	State Maximum Concentration (ppm)	0.115	0.112	0.108
	California Designation Value	0.11	0.11	0.11
<i>Number of Days Standard Exceeded</i>				
	CAAQS 1-hour (> 0.09 ppm)	19	13	9
8-Hour Ozone (O_3)				
	State Maximum Concentration (ppm)	0.100	0.096	0.094
	State Designation Value (ppm)	0.102	0.098	0.100
	National Maximum Concentration (ppm)	0.100	0.095	0.094
	National Fourth-Highest Concentration (ppm)	0.094	0.088	0.090
	National Design Value (ppm)	0.091	0.089	0.090
<i>Number of Days Standard Exceeded</i>				
	CAAQS 8-hour (> 0.070 ppm)	76	72	53
	NAAQS 8-hour (> 0.075 ppm)	53	39	34

Pollutant Standards		2011	2012	2013
Carbon Monoxide (CO)				
	Maximum Concentration 8-hour Period (ppm)	1.33	1.00	NA
<i>Number of Days Standard Exceeded</i>				
	NAAQS 8-hour (≥ 9 ppm)	0	0	0
	CAAQS 8-hour (≥ 9.0 ppm)	0	0	0
Nitrogen Dioxide (NO₂)				
	Maximum 1-hour Concentration (ppm)	58.0	49.0	47.7
	Annual Average Concentration (ppm)	12	9	8
<i>Number of Days Standard Exceeded</i>				
	CAAQS (0.18 ppm)	0	0	0
	NAAQS (0.100 ppm)	0	0	0
Suspended Particulates (PM₁₀)				
	Maximum State 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	49.0	43.0	173.4
	Maximum National 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	81.9	47.0	184.4
	State Annual Average Concentration (CAAQS = 20 $\mu\text{g}/\text{m}^3$)	19.6	19.8	28.3
<i>Number of Days Standard Exceeded</i>				
	CAAQS 24-hour ($> 50 \mu\text{g}/\text{m}^3$)	0	0	2
	NAAQS 24-hour ($> 150 \mu\text{g}/\text{m}^3$) (Estimated)	0.0	0.0	6.5
Suspended Particulates (PM_{2.5})				
	Maximum 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	50.0	14.0	11.9
	24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	50.0	NA	10.5
	National Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	NA	NA	5.8
	State Annual Average Concentration ($\mu\text{g}/\text{m}^3$)	NA	NA	NA
<i>Number of Days Standard Exceeded (Estimated)</i>				
	NAAQS 24-hour ($> 35 \mu\text{g}/\text{m}^3$)	1	0	0
Sources: ARB 2014; EPA 2014a. Data compiled by ICF. CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; $>$ = greater than; \geq = greater than or equal to; NA = data not available.				

Sensitive Receptors and Locations

The Antelope Valley Air Quality Management District (AVAQMD), which has jurisdiction over local air quality in the project area, considers residences, schools, daycare centers, playgrounds, and medical facilities to be sensitive receptor land uses.

The project site is bordered by residences to the south and east and by commercial uses to the north and west. The closest residences are immediately adjacent the eastern project boundary.

Regulatory Setting

Federal

The Clean Air Act (CAA) was first enacted in 1963 but has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes the National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. Los Angeles County is within an air basin that is designated as a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect development of the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 3-2 shows the NAAQS currently in effect for each criteria pollutant. The Los Angeles County portion of the MDAB fails to meet national standards for O₃, PM_{2.5}, and lead (Pb) and therefore is considered a federal nonattainment area for those pollutants. Table 3-3 lists each criteria pollutant and its related attainment status in Los Angeles County.

State

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The MDAB is in compliance with these California standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Above, Table 3-2 details the current NAAQS and CAAQS, and Table 3-3 provides the Los Angeles County portion of the MDAB's attainment status with respect to NAAQS and CAAQS.

Local

The AVAQMD has jurisdiction over the northern, desert portion of Los Angeles County. This region is bound to the north by the Kern County line, to the east by the San Bernardino County line, and to the west and south by the South Coast Air Basin portion of Los Angeles County. Like all the air quality districts, the AVAQMD's responsibilities include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The AVAQMD is also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

Table 3-2. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS^a	NAAQS^b
Ozone (O ₃)	1 hour	0.09 ppm ^c	--
	8 hour	0.070 ppm	0.075 ppm
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	100 ppb
	Annual Arithmetic Mean	0.030 ppm	53 ppb
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	75 ppb
	24 hour	0.04 ppm	0.14 ppm
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³ ^c	150 µg/m ³
	Annual Arithmetic Mean	20 µg/m ³	—
Fine Particulate Matter (PM _{2.5})	24 hour	—	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³
Sulfates	24 hour	25 µg/m ³	—
Lead (Pb)	30 day average	1.5 µg/m ³	—
	Calendar quarter	—	1.5 µg/m ³
	Rolling 3-Month Average	—	0.15 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm	—
Vinyl Chloride	24 hour	0.01 ppm	—

Source: ARB 2013a.

^a The California Ambient Air Quality Standards (CAAQS) for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, and PM_{2.5} are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^b The National Ambient Air Quality Standards (NAAQS), other than O₃, PM, and those based on annual averages, are not to be exceeded more than once a year. The O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above the 24-hour standard is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

^c ppm = parts per million by volume; ppb = parts per billion; µg/m³ = micrograms per cubic meter.

Table 3-3. Federal and State Attainment Status for the Los Angeles County Portion of the Mojave Desert Air Basin

Criteria Pollutant	Federal Designation	State Designation
O ₃ (8-hour)	Nonattainment – Severe 15	Nonattainment
CO	Attainment	Attainment
PM ₁₀	Attainment	Nonattainment
PM _{2.5}	Attainment	Unclassified
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No Federal Standard)	Attainment
Hydrogen Sulfide	(No Federal Standard)	Unclassified
Visibility	(No Federal Standard)	Unclassified
Source: ARB 2013b; EPA 2014b.		

The proposed project may be subject to the following adopted AVAQMD rules, as well as others:

- **AVAQMD Rule 402—Nuisance:** Forbids the discharge of such quantities of air contaminants or other material that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.
- **AVAQMD Rule 403—Fugitive Dust:** Restricts fugitive dust from construction/demolition and other activities. Specifies numerous restrictions to operators of construction/demolition for all projects greater than a half-acre in size (e.g., periodic watering, covering loaded haul vehicles, stabilize graded surfaces, cleanup project dust/debris on paved surfaces, reduce non-essential earth moving), and requires a Dust Control Plan for any non-residential projects disturbing more than five acres per day.
- **AVAQMD Rule 404—Particulate Matter Concentration:** A person shall not discharge into the atmosphere from any source particulate matter, except liquid sulfur compounds, in excess of the concentration at standard conditions.
- **AVAQMD Rule 1108—Cutback Asphalt:** Sets forth VOC content limits for cutback asphalt.
- **AVAQMD Rule 1113—Architectural Coatings.** This rule limits the VOC content of architectural coatings used in the district. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use in the district must comply with the current VOC standards.
- **AVAQMD Rule 1300—New Source Review:** Sets forth the requirements for the preconstruction review of all new or modified Facilities, to ensure that the construction, or modification of facilities subject to this regulation does not interfere with the attainment and maintenance of ambient air quality standards.

Impact Analysis

Appendix G, Section III, of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding air quality impacts.

Thresholds of Significance

According to the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. The AVAQMD recommends that the quantitative air pollution thresholds shown in Table 3-4 be used to determine the significance of project emissions.

The AVAQMD considers direct impacts to be those that result directly from a proposed project. In this case, the direct impacts would be construction emissions from both on- and off-road vehicle and equipment sources during construction activities. Indirect impacts would be impacts that result from changes that would occur as a result of the project. An example would be new roadway infrastructure to support a new subdivision. Cumulative impacts are the combination of direct and indirect impacts. Therefore, the same thresholds are used to determine a project-level impact and a “cumulatively considerable” net increase in criteria pollutants (AVAQMD 2011). Note that because the project is a multi-phased project with separate construction and operational phases, pursuant to AVAQMD guidelines and per correspondence with AVAQMD staff (De Salvo pers. comm.), the project’s construction criteria pollutant emissions are summed both daily and annually, and operational criteria pollutant emissions are summed annually and compared to the respective thresholds in Table 3-4.

Regarding sensitive receptors exposure to air toxics, the AVAQMD states that the following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated for health risks: any industrial project within 1,000 feet; a distribution center (40 or more trucks per day) within 1,000 feet; a major transportation project (50,000 or more vehicles per day) within 1,000 feet; a dry cleaner using perchloroethylene within 500 feet; or a gasoline dispensing facility within 300 feet. Regarding CO hot spots, impacts were evaluated consistent with the California Department of Transportation’s (Caltrans’) *Transportation Project-Level Carbon Monoxide Protocol* (Garza et al. 1997) and the South Coast Air Quality Management District’s (SCAQMD’s) CO modeling protocol, as AVAQMD has not produced such guidance. SCAQMD recommends a hot-spot evaluation of potential localized CO impacts when volume-to-capacity (V/C) ratios are increased by 2% or more at intersections with a level of service (LOS) of C or worse.

Table 3-4. Antelope Valley Air Quality Management District Significance Thresholds for Construction and Operations

Threshold	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO _{2e}
Daily (pounds)	137	137	548	137	82	82	548,000
Annual (tons)	25	25	100	25	15	15	100,000
Source: AVAQMD 2011. Note: The AVAQMD also includes thresholds for H ₂ S and lead, but those are not included in this analysis, as the project would not result in H ₂ S or lead emissions.							

Methods

The methodology for identifying construction- and operations-related emissions is presented below.

Construction

Construction of the proposed project 12,500-square-foot library would result in the short-term generation of criteria pollutant and toxic air contaminant (TAC) emissions. Mass daily combustion exhaust, fugitive dust (PM10 and PM2.5), and fugitive off-gassing paving emissions were estimated using modeling defaults within the South Coast Air Quality Management District's (SCAQMD's) California Emissions Estimator Model (CalEEMod), version 2013.2.2 (SCAQMD 2013) in conjunction with construction equipment, vehicle trip information, and phasing information from the project applicant. Emissions were estimated based on construction types and numbers as well as worker, haul, and delivery truck trip generation per phase as obtained from the project applicant; information regarding trip distance, fleet mix, and equipment horsepower were based on model defaults. Fugitive dust emissions associated with site balancing does not take into account mandatory compliance with AVAQMD Rule 403.

Construction is anticipated to begin in July 2015 and take approximately 13 months to complete. Emissions are presented at both the daily and annual time scale and compared with AVAQMD thresholds discussed above. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

Operations

Once constructed, the proposed project would result in a new long-term source of criteria pollutant emissions. The project would result in long-term emissions from motor vehicle trips, natural gas combustion on site for space and water heating, and area sources (e.g., consumer products [cleaning supplies, kitchen aerosols, cosmetics, toiletries], architectural coatings, and landscaping). For purposes of analysis, it was assumed that the proposed project would be fully built out and operational in 2016. Emissions were estimated based on trip generation estimates obtained from the traffic consultant (Intueor 2014) and CalEEMod default assumptions regarding natural gas consumption and area source generation for a 12,500-square-foot library.

Emissions are presented at the annual time scale and compared with AVAQMD annual thresholds discussed above. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

Would the project:

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less-than-significant impact. According to AVAQMD guidelines, a project is deemed consistent with air quality plans if it complies with all applicable AVAQMD rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan[s]). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast.

The most relevant land use plan for the project site is the adopted 1980 Los Angeles County General Plan, which is currently being updated as part of the draft *Los Angeles County General Plan 2035*. The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. Details regarding both project construction and operation are provided below.

Construction

Less-than-significant impact.

The project site is located within the Antelope Valley Plan area and is zoned for M1, Light Manufacturing, and A-1, Light Agriculture. According to the Los Angeles County Code of Ordinances, a library is an allowed use in land zoned A-1, provided a Conditional Use Permit has first been obtained. A library is a less-intensive use than manufacturing or agricultural uses, and the proposed library would replace an existing library with a more modern i.e., more efficient) and larger facility. Therefore, the project would not conflict with the planning assumptions in the Los Angeles County General Plan. Additionally, the project would abide by AVAQMD rules and regulations, including fugitive dust control per Rule 403. Although the proposed project would generate minor amounts of emissions associated with project construction, these emissions are not expected to impede attainment or maintenance of the NAAQS or CAAQS. Consequently, the project would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.

Operation

Less-than-significant impact. For the same reasons as discussed above for project construction, operation of the project would not conflict with or obstruct implementation of the applicable air quality plan. Although the proposed project would generate minor amounts of emissions associated with project operations, these emissions are not expected to impede attainment or maintenance of the NAAQS or CAAQS. Consequently, the project would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.

b. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Less-than-significant impact. The project site is located within an area where state and federal air quality standards are often exceeded. AVAQMD has promulgated regional significance thresholds to help the MDAB attain federal and state air quality standards and protect public health. The proposed project would contribute to regional air pollutant emissions during short-term construction and long-term operations; however, the contribution would not be substantial. Both the construction- and operational-related details are provided below.

Construction

Less-than-significant impact. Construction of the project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction workers' vehicle trips, material deliveries, and trips by heavy-duty haul trucks. In addition, earthwork and demolition activities would result in fugitive dust emissions, and painting/coatings and paving operations would release volatile organic compounds (VOCs) from off-gassing. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Daily construction-related emissions on the maximum day of activity are shown in Table 3-5. As shown in Table 3-5, maximum daily project-related criteria pollutant emissions would not exceed AVAQMD regional construction-period thresholds for any pollutant.

Table 3-5. Estimate of Unmitigated Construction Emissions—Pounds per Day

Construction Phase	VOC	NO_x	CO	SO_x	PM10	PM2.5
Grading, foundations, and slab-on-grade	2.35	27.34	16.73	<0.01	1.44	1.17
On- and offsite utilities and improvements	1.98	20.00	11.53	<0.01	1.27	1.09
Structure and framing	2.54	12.61	10.16	<0.01	1.00	0.81
Rough-ins, exterior-skin, and roofing	1.36	14.88	8.17	<0.01	0.92	0.72
Interior finishes	2.12	0.52	3.03	<0.01	0.44	0.12
Exterior hardscape and landscape	0.89	7.62	5.89	<0.01	0.75	0.57
Fixtures, furnishings, and equipment	0.10	0.27	1.77	<0.01	0.27	0.07
Maximum Daily Construction Emissions	8.87	55.57	38.49	<0.01	4.35	3.31
AVAQMD Daily Threshold	137	137	548	137	82	82
Exceed Significant Threshold?	No	No	No	No	No	No
Source: Emissions modeling by ICF 2014 (Appendix A).						
Note: Totals may not add due to rounding.						

Annual construction-related emissions are shown in Table 3-6. As shown in Table 3-6, annual project-related criteria pollutant emissions would not exceed AVAQMD annual thresholds for any pollutant during either year of construction.

Table 3-6. Estimate of Unmitigated Construction Emissions—Tons per Year

Construction Phase	VOC	NO_x	CO	SO_x	PM10	PM2.5
<i>Year 2015</i>						
Grading, foundations, and slab-on-grade	0.04	0.42	0.26	<0.01	0.02	0.02
On-and offsite utilities and improvements	0.05	0.52	0.30	<0.01	0.03	0.03
Structure and framing	0.04	0.20	0.16	<0.01	0.02	0.01
Rough-ins, exterior-skin, and roofing	0.05	0.56	0.31	<0.01	0.03	0.02
Interior finishes	0.05	0.01	0.08	<0.01	0.01	<0.01
Total Emissions in 2015	0.23	1.72	1.12	<0.01	0.12	0.08
AVAQMD Annual Threshold	25	25	100	25	15	15
Exceed Significant Threshold?	No	No	No	No	No	No
<i>Year 2016</i>						
Interior finishes	0.10	0.02	0.15	<0.01	0.02	<0.01
Exterior hardscape and landscape	0.02	0.13	0.10	<0.01	0.01	0.01
Fixtures, furnishings, and equipment	0.00	0.01	0.04	<0.01	0.01	<0.01
Total Emissions in 2016	0.12	0.16	0.29	<0.01	0.04	0.01
AVAQMD Annual Threshold	25	25	100	25	15	15
Exceed Significant Threshold?	No	No	No	No	No	No
Source: Emissions modeling by ICF 2014 (Appendix A).						
Note: Totals may not add due to rounding.						

Because project-related construction emissions would not exceed the AVAQM’s daily or annual thresholds of significance, the impact of construction-related emissions from the project is considered less than significant.

Operation

Less-than-significant impact. Once the project is operational, the project would generate emissions associated with motor vehicle trips, natural gas combustion on site for space and water heating, and area sources (e.g., consumer products [cleaning supplies, kitchen aerosols, cosmetics, toiletries], architectural coatings, and landscaping).

As shown in Table 3-7, annual project-related criteria pollutant emissions are not expected to exceed AVAQM operational thresholds for any pollutant. Consequently, the impact of operations-related emissions from the project is considered less than significant.

Table 3-7. Estimate of Unmitigated Opening-Year Operational Emissions—Tons per Year

Operational Source	VOC	NO_x	CO	SO_x	PM10	PM2.5
Mobile Sources	0.40	0.82	4.64	<0.01	0.52	0.15
Natural Gas	0.00	0.01	0.01	<0.01	<0.01	<0.01
Architectural Coatings	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Consumer Products	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
Landscaping	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Annual Emissions	0.55	0.83	4.64	<0.01	0.52	0.15
AVAQMD Annual Threshold	25	25	100	25	15	15
Exceed Significant Threshold?	No	No	No	No	No	No
Source: Emissions modeling by ICF 2014 (Appendix A).						
Note: Totals may not add due to rounding.						

- c. **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?**

Less-than-significant impact. The Los Angeles County portion of the MDAB is currently in nonattainment status for O₃ under the NAAQS as well as for O₃ and PM_{2.5} under the CAAQS. This is the result of past and present projects and will be further impeded by reasonably foreseeable future projects. Criteria pollutant emissions would not exceed AVAQM daily or annual thresholds during construction and operation of the proposed project, and the proposed project would not result in a cumulatively considerable net increase in pollutants (including ozone precursors or PM_{2.5}). Details regarding both project construction and operation are provided below.

Construction

Less-than-significant impact. As discussed above, AVAQM has developed thresholds to ensure attainment of the NAAQS and CAAQS; therefore, exceedance of AVAQM threshold levels is considered a significant cumulative impact and adverse cumulative consequence. As discussed under III.b and shown in Tables 3-5 and 3-6, criteria pollutant emissions would not exceed AVAQM

daily or annual thresholds during construction of the proposed project. Therefore, because the proposed project would not exceed the thresholds for a nonattainment pollutant (in this case, an ozone precursor [VOC and NO_x] or PM_{2.5}), construction of the proposed project would not result in a cumulatively considerable net increase in pollutants (including ozone precursors). Impacts would be less than significant.

Operation

Less-than-significant impact. As discussed under III.b and shown in Table 3-7, criteria pollutant emissions would not exceed AVAQMD daily or annual thresholds during operation of the proposed project. Therefore, because the proposed project would not exceed the thresholds for a nonattainment pollutant (in this case, an ozone precursor [VOC and NO_x] or PM_{2.5}), operation of the proposed project would not result in a cumulatively considerable net increase in pollutants (including ozone precursors). Impacts would be less than significant.

d. Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant impact. Diesel particulate matter, which is classified as a carcinogenic TAC by ARB, is the primary pollutant of concern with regard to health risks to sensitive receptors. Cancer health risks associated with exposures to diesel exhaust are typically associated with chronic exposure in which a 70-year exposure period is assumed. Details regarding both project construction and operation are provided below.

Construction

Less-than-significant impact. The closest sensitive land uses are the residential areas adjacent to the project site to the south and east. Construction would be short-term and sporadic, and activities would last approximately 11 months, which is much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks. As such, construction of the proposed project alone is not anticipated to result in an elevated health risk to exposed persons because of the short-term nature of construction-related diesel exposure. Therefore, construction of the project would not expose receptors to acute and/or chronically hazardous TAC pollutants. Impacts related to potential project-generated exposure to TACs on surrounding land uses would be less than significant.

Operation

Less-than-significant impact. AVAQMD recommends an evaluation of health risks when certain land uses (e.g., industrial facilities, distribution centers, transportation projects, dry cleaners, gasoline dispensing facilities) that emit acute and/or chronically hazardous TAC pollutants are proposed near sensitive land uses. The proposed library project is not considered a source of TAC emissions, and it would not affect the distribution of diesel-powered vehicles. Therefore, the project would not expose receptors to acute and/or chronically hazardous TAC pollutants. Impacts related to potential project-generated exposure to TACs on surrounding land uses would be less than significant.

With respect to CO hot spots at nearby intersections, the project would not substantially increase congestion. According to the traffic impact analysis (Intueor 2014), implementation of the proposed project would not increase V/C ratios by 2% at any intersection with LOS C or worse. Consequently, operation of the project would not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of CO NAAQS. The impact of traffic from the project on ambient CO levels is considered less than significant. No mitigation is required.

e. Create objectionable odors affecting a substantial number of people?

Less-than-significant impact. The generation and severity of odors is dependent on a number of factors, including the nature, frequency, and intensity of the source; wind direction; and the location of the receptors. Typical facilities known to produce odors include landfills, wastewater treatment plants, manufacturing plants, and certain agricultural activities (ARB 2005). Implementation of the proposed project would not result in the addition of any of these facilities. Details regarding both project construction and operation are provided below.

Construction

Less-than-significant impact. During construction, diesel exhaust may emit temporary and localized odors. These would cease once construction activities are completed and would quickly be dissipated by light winds. Impacts related to potential project-generated exposure to odors on surrounding land uses would be less than significant. Therefore, the project would not create objectionable odors that would affect a substantial number of people, and impacts would be less than significant.

Operation

No impact. Once operational, the project would not include any odor-emitting uses; thus, there would be no operational impacts related to objectionable odors. No impact would occur.

Mitigation Measures

No potentially significant impacts related to air quality would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The region of analysis for cumulative effects on air quality is the entire MDAB. The MDAB experiences chronic exceedances of state and federal ambient air quality standards as a consequence of past and present projects and is subject to continued nonattainment status by reasonably foreseeable future projects. These nonattainment conditions within the region are considered cumulatively significant. According to AVAQMD, cumulative impacts are similar to direct and indirect impacts of the project. AVAQMD thresholds have been established to ensure attainment of the NAAQS and CAAQS, and, according to AVAQMD, the thresholds shown in Table 3-4 are used to determine both project-level impact and a “cumulatively considerable” net increase in criteria pollutants.

As discussed above, the project is consistent with AQMP. Furthermore, emissions would be below AVAQMD regional thresholds and would not result in substantial pollutant concentrations at nearby sensitive receptors. The proposed project would comply with applicable AVAQMD rules and regulations, including Rule 403 (Fugitive Dust Control), Rule 1108 (Cutback Asphalt), and Rule 1113 (Architectural Coatings) during construction and with all other adopted emissions control measures. Per AVAQMD rules and mandates and the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, implementation of all feasible mitigation measures, and compliance with adopted emissions control measures) would also be imposed on all projects in the region. As shown in Table 2-1, there are four related projects within 1.5 miles of the project site, which would include the four related nearby projects. Each of

these cumulative projects would comply with applicable AVAQMD rules and regulations. As such, cumulative impacts with respect to criteria pollutant emissions would be less than significant. Following construction, the project would result in minor increases in motor vehicle travel and area sources, but these emissions would be far below AVAQMD thresholds. Therefore, the project's long-term contribution to cumulative air quality impacts would be less than cumulatively considerable.

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Methodology

Prior to the field survey, ICF International (ICF) biologists conducted a literature review to identify potential special-status species that may be found on the project site or within an approximate 5-mile radius. Pertinent sources reviewed were:

- California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife [CDFW] 2014).
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2014).

- U.S. Fish and Wildlife Service (USFWS) (USFWS 2014a), Carlsbad office GIS database search.
- Recent USFWS critical habitat maps (USFWS 2014b).
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (USDA 2014).
- Aerial photography dated May 24, 2013 (Google Earth 2014).

A pedestrian survey was conducted on July 31, 2014, between 1220 and 1320 hours by ICF biologists Russell Sweet and Amanda Parra. The site visit focused on documenting the existing biological conditions of the project site, conducting a habitat assessment of special-status plant and wildlife species, determining the types of vegetation on the project site, identifying potential jurisdictional waters, and detecting any biological resources that would pose a constraint to project development. The temperature during the site visit was 99°F, winds ranged from 1 to 3 mph, and skies were clear. Both the project site and surrounding areas were included in the biological survey area. However, because of private property issues, inaccessible areas adjacent to the project site were scanned using binoculars. Site photographs taken during the field visit can be found in Appendix B.

Environmental Setting

The project site (APN 3101-013-058) covers approximately 1.75 acres and is located at an elevation of 2,508 to 2,510 feet above mean sea level (amsl). Multiple dirt trails traverse the project site, which had parked vehicles during the visit. No potential jurisdictional features or natural drainages were observed on the project site. The site is covered with primarily weedy species and a few planted trees. Adjacent properties include single-family homes on large lots to the south-southeast and businesses to the west (Westside Body and Paint) and east (Grange Hall). The site abuts West Avenue M-2 on the north (see Appendix B for representative photos of the site).

Soils

Soil at the project site is Adelanto loamy sand, with 2 to 5 percent slopes (USDA 2014). The field visit determined that the soils on the project site are highly disturbed and compacted.

Biological Resources

Vegetation

The project site is covered with a ruderal plant community that developed as a result of regular anthropogenic disturbances that occurred on the site. The primary vegetation consists of nonnative species, including black mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), prickly Russian thistle (*Salsola tragus*), sacred jimsonweed (*Datura wrightii*), ripgut brome (*Bromus diandrus*), Arabian schismus (*Schismus arabicus*), and Mediterranean schismus (*Schismus barbatus*). A few nonnative trees were also observed, including pistachio (*Pistacia vera*) and Chinese elm (*Ulmus* sp). Some scattered native species were observed during the survey, including narrowleaf goldenbush (*Ericameria linearifolia*), California matchweed (*Gutierrezia californica*), flower wire-lettuce (*Stephanomeria pauciflora*), doveweed (*Croton setigerus*), white-margin spurge (*Euphorbia albomarginata*), redstem filaree (*Erodium cicutarium*), vinegar weed (*Trichostema lanceolatum*), and California poppy (*Eschscholzia californica*).

Special-Status Species

No wildlife species or evidence of wildlife species was observed in the biological survey area. The habitat on the project site is considered unsuitable for the special-status plant and wildlife species that were evaluated (see Appendix B), largely because the site is small; highly disturbed, with little native vegetation; and surrounded by developed areas.

Nesting Birds

The project site has limited vegetation; the potential for ground-nesting birds to be present on the site is low. No evidence of previous nests was observed during the site visit.

Regulatory Setting

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) (U.S. Government Code [U.S.C.] Title 16, Section 1530 et seq.) protects fish and wildlife species that have been identified by USFWS as threatened or endangered and their habitats. *Endangered* refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range; *threatened* refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

USFWS regulates “take” (i.e., killing, harassing, or destroying habitat) of federally listed species through Section 9 of the ESA. Take of listed species can be authorized through either the ESA Section 7 consultation process, for actions by federal agencies, or the ESA Section 10 permit process, for actions by nonfederal agencies.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712) enacts the provisions of treaties between the United States, Great Britain, Mexico, Canada, and Japan and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 U.S.C. 703; 50 Code of Federal Regulations [CFR] 10 21). Most actions that result in taking or permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA include hunting specific game birds, engaging in legitimate research activities, displaying birds in zoological gardens, banding birds, or conducting other similar activities. USFWS is responsible for overseeing compliance with the MBTA, and the USDA Animal Damage Control Officer makes recommendations regarding related animal protection issues.

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of surface waters that are 1) traditionally navigable waters, 2) tributary or adjacent to traditionally navigable waters, or 3) interstate waters. Waters that are under the jurisdiction of the CWA are referred to as “waters of the United States.” The U.S. Army Corps of Engineers regulates fill in waters of the United States under Section 404 of the CWA. Point discharges to waters of the United States are regulated under Section 402 of the CWA through National Pollutant Discharge Elimination System (NPDES) permits.

In California, the Regional Water Quality Control Boards have been delegated the authority to issue NPDES permits. Under Section 401 of the CWA, state agencies review permits issued by the U.S. Army Corps of Engineers to determine effects on water quality. In general, the U.S. Army Corps of Engineers takes jurisdiction over traditionally navigable waters, waters that drain to a traditionally navigable water, or waters that are adjacent to traditionally navigable waters or have a significant nexus.

State

The state laws and regulations listed below were considered during the evaluation of biological resources in the study area. Note that this is not an exhaustive list of all state laws and regulations that may be considered.

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050–2097) is administered by CDFW. It prohibits the take of plant and animal species that have been designated by CDFW as either threatened or endangered in the state of California. “Take” in the context of the CESA means to hunt, pursue, kill, or capture a listed species; it also refers to actions that may result in adverse impacts when an attempt is made to take individuals of a listed species.

Sections 2091 and 2081 of the CESA allow CDFW to authorize exceptions to the state’s prohibition against take of a listed species. Section 2091 allows state lead agencies that have formally consulted with CDFW to take a listed species if the take is incidental to carrying out an otherwise lawful project that has been approved under CEQA. Section 2081 allows CDFW to authorize take of a listed species for educational, scientific, or management purposes. Private developers whose projects do not involve a state lead agency may not take a listed species without formally consulting with CDFW and agreeing to strict measures and standards for managing the listed species.

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board (SWRCB) and divided the state into nine regional basins, each with a Regional Water Quality Control Board. The SWRCB is the primary state agency with responsibility for protecting the quality of the state’s surface water and groundwater supplies; the regional boards are responsible for developing and enforcing water quality objectives and implementation plans. This act is relevant to biological resources that may be affected in state waters because the SWRCB regulates discharges, including discharges of construction runoff and sediment, into state waters, including groundwater. This includes waters that may be outside federal jurisdiction under the CWA.

California Department of Fish and Wildlife Regulations

Protected Species in the Fish and Game Code

The California Fish and Game Code provides protection from take for a variety of species, referred to as *fully protected species*. Section 5050 lists fully protected amphibians and reptiles and prohibits the take of such species, except as provided in Sections 2081.7 or 2835. Section 5515 prohibits take of fully protected fish species, except as provided in Sections 2081.7 or 2835. Fully protected birds are listed under Section 3511, and fully protected mammals are listed under Section 4700; both of these sections prohibit take, except as provided in Sections 2081.7 and 2835. Except for take related to scientific research, all take of fully protected species is prohibited.

Nesting Bird Protections in the California Fish and Game Code

Similar to the federal MBTA, Section 3503 of the California Fish and Game Code prohibits take as well as the possession or destruction of eggs and nests of all birds, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Take or possession of any migratory nongame bird, as designated in the MBTA, is prohibited under Sections 3513 and 3800. As defined under Section 86 of the California Fish and Game Code, take means to “hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.”

Streambed Alteration Agreements

CDFW has jurisdictional authority over rivers, streams, and lakes under California Fish and Game Code Section 1602. CDFW has the authority to regulate all work under the jurisdiction of California that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. In practice, CDFW marks its jurisdictional limit at the top of the stream or lake or at the bank or the outer edge of riparian vegetation, where present; sometimes, it extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1602 may encompass areas that are greater than those regulated under CWA Section 404.

When CDFW enters into a streambed alteration agreement with an applicant, it can request conditions that will ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit but, rather, a mutual agreement between CDFW and the applicant.

Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) and the Natural Community Conservation Planning Act provide guidance regarding the preservation of plant resources; these two acts underlie the language and intent of Section 15380(d) of the State CEQA Guidelines, which states that a species does not have to be listed to be considered endangered, rare, or threatened if the species can be shown to exist in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens or if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Local

Los Angeles County Oak Tree Ordinance

It is the intent of the Los Angeles County Oak Tree Ordinance (Chapter 22.56.2050 of the Los Angeles County Municipal Code) to preserve and maintain healthy oak trees in Los Angeles County. The ordinance places restrictions on development to preserve oak trees. All oak trees of the genus *Quercus* (including valley oak and coast live oak) are legally protected from damage or removal during the course of a development project, unless the developer first obtains a permit.

The Los Angeles County Oak Tree Ordinance regulates the following trees (County of Los Angeles, 1982):

- All native oaks with a single-trunk diameter at breast height (DBH) of 8 inches or more.
- All native oaks that have two trunks with a combined DBH of 12 inches or more.
- Heritage oaks that meet either of the following criteria: (1) any oak tree with a DBH of 36 inches or more or (2) any oak tree having significant historical or cultural importance to the community, notwithstanding that the tree's DBH is less than 36 inches.

Los Angeles County General Plan

The County of Los Angeles (2014), through its general plan, established 61 Significant Ecological Areas (SEAs), representing a wide variety of biological communities within the county. The SEAs function to preserve this variety and provide a level of protection to the resources within them. These living laboratories contain examples of the county's diverse ecological heritage and are intended to be preserved in an ecologically viable condition for the purposes of public education, research, and non-disruptive outdoor uses. However, this does not preclude limited compatible development. The County general plan outlines a process to regulate land uses in these areas and creates an advisory committee of scientists who are appointed to oversee regulation.

A Conditional Use Permit is required for development in SEAs, thereby protecting resources contained in the SEAs from incompatible development that may result in environmental degradation. A biological constraints analysis is required to describe, in a general manner, the extent, location, and sensitivities of the ecological resources within the SEA.

The project site is located in an unincorporated area that lies outside of any SEA. The San Andreas SEA is the closest SEA; however, it is more than 5 miles from the project site.

Impact Analysis

Would the project:

- a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Construction

No impact. The project site lacks suitable habitat that would support special-status plant and wildlife species. Therefore, no construction impacts on special-status plant and wildlife species would occur.

Operation

No impact. For the same reasons discussed for construction, operation of the proposed project would not result in impacts on special-status plant and wildlife species.

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Construction

No impact. The proposed project would not remove or affect any riparian habitat or other sensitive natural communities, as identified in local or regional plans or by regulations set forth by the resource agencies. Therefore, no construction impacts would occur.

Operation

No impact. For the same reasons discussed for construction, operation of the proposed project would not affect any riparian habitat or other sensitive natural community, as identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?***

Construction

No impact. No wetlands or other jurisdictional features are located near or within the project site. No construction impacts would occur.

Operation

No impact. For the same reasons discussed for construction, no operational impacts related to wetlands would occur.

- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?***

Construction

No impact. The site is surrounded by development with fencing along the east, south, and west boundaries and does not function as part of a wildlife corridor. Therefore, development of the project site would not affect any wildlife corridors or nursery sites. No construction impacts would occur.

Operation

No impact. For the same reasons discussed for construction, operation of the project would not affect any wildlife corridors or nursery sites. No operational impacts would occur.

- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

Construction

Less-than-significant impact with mitigation incorporated. The proposed project would be located outside of a SEA. Furthermore, the project site does not contain any protected oak trees. However, the site could be used by birds during the nesting season. Any impact on nesting birds

would be considered significant because it would conflict with the MBTA and/or California Fish and Game Code. Mitigation measure MM BIO-1 would be implemented to ensure that the project would not conflict with the MBTA or California Fish and Game Code, both of which protect nesting birds. Potential impacts on common bird species nests would not have a biologically significant effect.

Operation

No impact. Operation of the proposed library would not conflict with any local policies or ordinances because such policies and ordinances would not be applicable. Therefore, no operational impacts would occur.

f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

Construction

No impact. The proposed project would not be located within a designated NCCP/HCP area. The West Mojave HCP applies only to federal lands, and the DRECP applies only to renewable energy projects. Because the proposed project would not conflict with any NCCP/HCP, no impact would occur.

Operation

No impact. For the same reasons discussed for construction, no operational impacts related to any NCCP/HCP would occur.

Mitigation Measures

MM BIO-1: Nesting Bird Compliance. Within 7 days prior to the commencement of any construction activities that are scheduled to occur between February 15 and September 15, a qualified biologist shall perform a nesting bird survey to determine whether active nests are present within the project site and a 100-foot buffer. This survey shall identify the species and, to the degree feasible, the nesting stage (e.g., incubation of young, feeding of young, near fledging). Nest locations must be mapped with handheld GPS units or an alternate method that allows the nest to be mapped. If breeding activity and/or an active bird nest is located, a construction avoidance zone shall be established, and no construction activities shall be permitted within the established zone. The size of the construction avoidance zone shall be determined by the qualified biologist and demarcated in the field with fencing, stakes, and/or flagging. This area shall not be disturbed until the nest becomes inactive, as determined by the qualified biologist.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The study area for the cumulative impacts analysis for biological resources encompasses the area within a 1.5-mile radius from the project site because of the proximity of the past, present, and reasonably foreseeable future projects to the proposed project and their potential to impact similar resources as the proposed project. The four related projects within a 1.5-mile radius of the proposed project site are identified in Table 2-1 and include residential, office, and commercial land uses.

The proposed project would not result in any impacts on biological resources because suitable habitat does not exist on the project site. In addition, it would not conflict with local policies and ordinances. With respect to nesting birds, the four related projects within a 1.5-mile radius of the proposed Quartz Hill Library site would also be subject to the MBTA and the California Fish and Game Code and required to avoid potential impacts on nesting birds. Therefore, the related projects would not result in significant cumulative impacts on nesting birds, and the proposed project would not make a cumulatively considerable contribution to a cumulative impact on nesting birds or any special-status biological resources.

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Geologic Background

In 2006, Earth Systems Southern California (ESSC) completed a geotechnical engineering report for the parcel that is now the site for the proposed project (Hicks 2006). According to that report, the native soils on the site consist of 14 to 19 feet of alluvium over shallow bedrock. The alluvium, which is classified by the U.S. Department of Agriculture (USDA) as Holocene to late Pleistocene, is called Adelanto loamy sand, an unconsolidated sand and gravel mix that is found within slightly dissected alluvial fans and associated washes. The alluvium is underlain by Portal schist, a late Cretaceous (earliest: Tertiary) bedrock; an outcrop has been identified approximately 0.25 mile northeast of the project site. However, fossils do not form in schist, and the Quaternary Holocene to late Pleistocene alluvium near the modern ground surface has little potential for containing vertebrate fossils. Excavations below a depth of 5 feet have some potential to encompass buried late Pleistocene invertebrate fossils.

No fossil localities have been reported on the project site. This suggests that the potential for the discovery of paleontological materials during construction of the proposed project is low.

Prehistoric Human Occupation

Paleo-Indian Period (ca. 12,000–7,000 B.P.)

The earliest humans to occupy North America are believed to have been highly mobile hunters and gatherers. Rogers (1966) assigned Paleo-Indian sites within the Colorado Desert to the San Dieguito culture. Moratto (2004:92) notes that San Dieguito artifact assemblages are similar to those of Lake Mojave and other Paleo-Indian cultures in Southern California. Moratto goes on to suggest that assemblages of this early era should be divided into a Fluted Point tradition (12,000–10,000 B.P.) and, following Bedwell (1970), a Western Pluvial Lakes tradition (10,000–7,000 B.P.).

Pinto Period (ca. 7,000–4,000 B.P.)

The Pinto period is marked by the gradual transition from pluvial to arid conditions during the terminal Pleistocene to early Holocene. Pinto period sites are associated with the margins of pluvial lakes and now-extinct springs. Pinto-series projectile points, which are crudely made stemmed or basally notched dart points, are the most distinctive artifact types of the Pinto period. Other artifacts found at Pinto period sites include large leaf-shaped knives; thick, split-cobble choppers and scrapers; scraper planes; and small milling slabs and manos.

Throughout most of the California desert region, sites that contain elements of the Pinto Basin Complex are usually small, and the deposits are usually limited to surface deposits, suggestive of temporary and perhaps seasonal occupation by small groups of people. Environmental conditions during the Pinto period of the early Holocene were characterized by increasing aridity. However, at least one period of increased moisture, from approximately 6,500 to 5,500 years ago, resulted in the return of pluvial lake conditions. Warren (1984:414) postulates that human occupation of the Southern California deserts during the periods from approximately 7,000 to 6,500 years ago and from 5,500 to 4,000 years ago may have been limited because of the arid conditions. It is also suggested that the Pinto period populations withdrew to desert margins and oases during these arid periods, leaving large portions of the California deserts unoccupied for many centuries.

Gypsum Period (ca. 4,000–1,500 B.P.)

The Gypsum period is one of cultural intensification in the deserts of Southern California. The beginning of the Gypsum period coincides with the Little Pluvial, a period of increased effective moisture in the region when the ameliorated climate allowed for more extensive occupation of the desert regions. In addition, periods of drought during this era seem to have resulted in human adaptation to more arid conditions rather than a retreat from the deserts. Diagnostic projectile points of this period include Humbolt-, Gypsum-, and Elko-series dart points (Warren 1984). Late in the Gypsum period, Rose Spring arrow points appear in the archaeological record, reflecting the spread of the bow and arrow from the Great Basin and Colorado River region. Other artifact types that are characteristic of this period include leaf-shaped arrow points, rectangular-base knives, flake scrapers, T-shaped drills, milling slabs, and manos as well as core/cobble tool assemblages such as scraper planes, large choppers, and hammerstones (Warren 1984:416). In addition to the introduction of the bow and arrow, another technological innovation introduced during this period was the mortar and pestle for processing hard seeds, such as those derived from the mesquite pod. Other artifacts include shaft smoothers, incised slate and sandstone tablets and pendants, bone awls, *Olivella* shell beads, and *Haliotis* beads and ornaments. Trade relationships with the Pacific Coast are indicated by the presence of shell ornaments at several Gypsum period sites. Technologically, the artifact assemblage of this period is similar to that of the preceding Pinto period. New tools were added either as innovations or as “borrowed” cultural items.

Saratoga Springs Period (ca. A.D. 500–1200)

This period is, in large part, a continuation of developments that began during the Gypsum period, such as increasing adaptation to the desert environment and an increase in trade relations (Warren 1984). Regional environmental conditions became much wetter, a development known as the Little Pluvial. Variations in regional cultural adaptations became apparent during the Saratoga Springs period.

The Saratoga Springs period is characterized by cultural diversification and strong regional developments. Turquoise mining and long-distance trade networks appear to have attracted both the Anasazi and Hakataya peoples from the east and southeast, respectively, into the California

deserts. Trade with the California coastal populations appears to have been important in the Antelope Valley region. This trade stimulated the development of large, complex villages. In the northwestern Mojave Desert, however, the basic pattern established during the Gypsum period changed little during the Saratoga Springs period. Toward the end of the Saratoga Springs period, the Hakataya apparently moved far enough north to gain control of the turquoise mines in the central Mojave Desert, thereby replacing the Anasazi in the eastern California desert.

Developments during the Saratoga Springs period in the southern cultural sphere include the gradual introduction of pottery, Cottonwood-series arrow points, and, late in the period, desert side-notched arrow points. Trade with the Pacific and Gulf coastal populations appears to have been extensive. This was most likely the driving force that led to the gradual westward expansion of Hakataya cultural traits into the deserts and, later, the Peninsular Ranges as well as the inland valleys and coastal regions of Southern California. Lake Cahuilla, which is believed to have formed around A.D. 500, was the focus of cultural activities, such as the exploitation of fish, waterfowl, and wetland resources, during this period.

Shoshonean Period (ca. A.D. 1200 to the 1800s)

During the Shoshonean period, sometimes referred to as the Proto-historic period, there appears to have been a continuation of the technological developments from the earlier Saratoga Springs period. However, regional developments that indicate the formation of distinct ethnographic groups become clearer during the Shoshonean period. Two major events affected the archaeological record of this period. The final desiccation of Lake Cahuilla, which occurred by approximately A.D. 1640, resulted in a population shift away from the lakebed and into the Peninsular Ranges to the west and the Colorado River regions to the east. Subsequently, Spanish exploration and the establishment of the Mission system during the late 1700s mark the end of prehistoric ways of life.

In the southern desert region, brown and buff ware pottery, which first appeared on the lower Colorado River around A.D. 800, started to diffuse across the California deserts by about A.D. 900 (Moratto 2004). Associated with the diffusion of this pottery were desert side-notched and Cottonwood-series projectile points, dating to about A.D. 1150–1200, suggesting a continued spread of Hakataya influences. Trade along the Mojave River also expanded, resulting in middlemen between coastal and Colorado River populations. Large, complex house-pit village sites were established along the headwaters of the Mojave River; these were somewhat similar to those reported in the Antelope Valley. Although people in both of these areas appear to have participated in extensive trade between the desert and the coast, the lack of brown and buff ware pottery at the Antelope Valley sites suggests that these people were minimally influenced by the Hakataya developments along the Mojave River (Moratto 1984). The Hakataya influence throughout the Colorado and Mojave Deserts is evidenced by desert side-notched and Cottonwood-series projectile points and brown and buff ware pottery. During this period, Lake Cahuilla began to recede, and the extensive Hakataya populations that occupied its shores began moving westward and into areas such as Anza-Borrego, Coyote Canyon, the Upper Coachella Valley, Little San Bernardino Mountains, San Jacinto Valley, and Perris Plain.

Native American Ethnographic Background

The Antelope Valley is associated with overlapping Native American groups, including the Kitanemuk, Serrano, Kawaiisu, and Tataviam. The Kitanemuk were located primarily along the southeastern Tehachapi Mountains. The Serrano occupied primarily the San Bernardino Mountains but also extended into the Mojave Desert to the east and as far north as the Tehachapi Mountains.

The Kawaiisu lived within the Tehachapi Valley and used the springs found along the northern edge of the Antelope Valley. The Tataviam, who were associated primarily with Santa Clarita Basin, occupied the southern foothills at the far western edge of the Antelope Valley. Native American social organization within the Lancaster area consisted of autonomous localized lineages that maintained favored generalized usage areas. Villages were located near permanent water sources, making water a determining factor in the location of their settlements (City of Lancaster 2006).

European settlement of Southern California began with the founding of Mission San Diego de Alcalá in 1769. The first known European entry in the Mojave Desert and Antelope Valley area took place in 1772. That encounter was part of a raid into the San Joaquin Valley led by Captain Pedro Fages in pursuit of Spanish army deserters. During his journey, Fages passed by Lake Hughes while crossing the mountains. Four years later, Friar Francisco Garces reportedly followed a similar route into the Antelope Valley. In the 1840s and 1850s, other expeditions passed through the southern Mojave Desert and Antelope Valley, primarily to conduct topographic surveys. However, no government land grants were issued, and no established trails or roads are documented from this time period.

The acquisition of California by the United States in 1848, through a treaty that ended the Mexican-American War, and the discovery of gold in 1849 drew many Euro-Americans into California. California developed rapidly and was admitted to the Union in 1850. However, the great population influx was limited primarily to central California, San Francisco, and the gold rush region of the Sierra Nevada. Southern California, particularly the interior desert regions, grew slowly during this time (Starr 2005).

Lancaster was established in the early 1880s, owing its development to the arrival of the Southern Pacific Railroad in the Antelope Valley. Homesteaders first settled the area, planting walnut groves and agricultural fields. The discovery of gold and borax in the mountains to the north of the fledgling community in the late 1890s occurred providentially during a significant and long-term drought in the area; those who lost jobs in agriculture were able to find work in the mines and pits. In the twentieth century, Lancaster grew as a result of nearby Muroc Air Base, now known as Edwards Air Force Base. Here, flight tests were conducted and space shuttles landed. Lancaster incorporated in 1977 (County of Los Angeles Public Library 2014a).

Quartz Hill, located southwest of Lancaster, is the largest of the unincorporated communities in the Antelope Valley. As of the 2000 census, the Quartz Hill community, which covers an area of 3.7 square miles, had a population of approximately 9,890 and 3,450 households.

There is no historic preservation ordinance for Los Angeles County. Furthermore, the County does not maintain a list of local landmarks and does not designate historic districts. The Quartz Hill Library, part of the County Public Library system, has been housed in a former store building on 50th Street since 1959 (County of Los Angeles Public Library 2014b). This building was constructed in 1955, per the Los Angeles County Office of the Assessor (County of Los Angeles 2014).

Records Search

A cultural resources literature and records search was conducted to identify historical resources and archaeological sites within the project site and a 0.5-mile radius. The records search was conducted at the South Central Coastal Information Center (SCCIC) on July 22, 2014. The SCCIC, located at California State University, Fullerton, is a branch of the California Historical Resources Information Center. It maintains California's official records of cultural resource studies and archaeological sites within Los Angeles and Orange Counties.

In addition to archaeological site records, the SCCIC maintains copies of the following reference material:

- National Register of Historic Places
- Historic property data files
- California Register of Historical Resources
- California Historical Landmarks database

Previous Cultural Studies

The results of the records search indicate that the project site has not been previously surveyed for archaeological resources. Historical and archaeological resources have not been recorded within the project site or a 0.5-mile radius of the project site.

Cultural Resources Survey

A pedestrian survey of the project site was conducted on August 5, 2014. Transects were walked at 10- to 15-meter intervals to cover the entire parcel. Although visibility was excellent, no cultural resources were observed during the survey, only modern roadside debris.

Contact with Interested Parties

ICF International sent a copy of the project description, along with project area maps, to the Native American Heritage Commission (NAHC) on July 18, 2014. Letters requesting comment, along with project area maps, were sent to Native American groups listed by the NAHC. As of January 5, 2015, no responses have been received.

Impact Analysis

Would the project:

- a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?**

Construction

No impact. The project site is currently vacant; it does not contain any buildings or structures. Furthermore, there are no known historical resources within a 0.5-mile radius of the project site. Therefore, impacts on historical resources due to construction are not expected.

Operation

No impact. As noted above, the project site is currently vacant; therefore, no operational impacts on historical resources would occur.

- b. Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?**

Construction

Less-than-significant impact with mitigation incorporated. Archaeological resources have not been identified on the surface of the project site or adjacent to the site. This suggests that the project site's potential to encompass archaeological resources is low. However, the absence of archaeological features on the surface does not preclude their existence at the subsurface level. Significant buried

archaeological resources could be discovered during construction-related ground disturbance within native soils. However, implementation of mitigation measures MM CUL-1 and MM CUL-2 would reduce this impact to a less-than-significant level.

Operation

No impact. Archaeological resources have not been identified on the surface of the project site. There is no potential for unearthing buried archaeological resources because ground disturbance during operation of the project is not proposed. Therefore, archaeological resources would not be affected during operation of the proposed project.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction

Less-than-significant impact with mitigation incorporated. There are no known paleontological resources or unique geologic features within the project site. The Quaternary Holocene to late Pleistocene alluvium near the modern ground surface has limited potential for containing vertebrate fossils, but it is possible that fossils could be present at depth. The underlying bedrock is not conducive to the formation of fossils, and surface grading or very shallow excavations in the younger Quaternary alluvium occurring at the surface of the project site is unlikely to encounter significant vertebrate fossils. However, deeper trenching or excavations that extend into older Quaternary deposits may encounter significant vertebrate fossil remains. Implementation of mitigation measure MM CUL-3 would reduce any potential impact to a less-than-significant level. Therefore, impacts on paleontological resources would be less than significant with mitigation incorporated.

Operation

No impact. There are no known paleontological resources or unique geologic features within the project site. The Quaternary Holocene to late Pleistocene alluvium near the modern ground surface has little potential for containing vertebrate fossils, and the underlying bedrock is not conducive to the formation of fossils. Furthermore, there is no potential for unearthing paleontological resources because ground disturbance during operation of the project is not proposed. Therefore, impacts on paleontological resources would not occur.

d. Disturb any human remains, including those interred outside of formal cemeteries?

Construction

Less-than-significant impact with mitigation incorporated. Human remains have not been identified on the surface of the project site. Burials are not known to have occurred in the project area or adjacent areas; the potential for the discovery of human remains is low. However, the absence of human remains on the surface does not preclude their existence at the subsurface level. Remains could be discovered during construction-related ground disturbance. However, implementation of mitigation measure MM CUL-2 would reduce this impact to a less-than-significant level.

Operation

No impact. Human remains have not been identified on the surface of the project site. There is no potential for unearthing buried human remains as a result of project operation because ground disturbance is not proposed. Therefore, human remains would not be affected during operation of the proposed project.

Mitigation Measures

MM CUL-1: Stop work if buried cultural deposits are encountered during construction activities. If buried cultural resources, such as chipped or ground stone, historic debris, or building foundations, are inadvertently discovered during ground-disturbing activities, work shall immediately stop within a 100-foot radius of the find until a qualified archaeologist can assess the significance of the find, treat the find according to accepted practices, and, if necessary, develop a response plan. Preservation in place shall be the preferred treatment method, per State CEQA Guidelines Section 15126.4(b) (Avoidance, Open Space, Capping, Easement).

MM CUL-2: Stop work if human remains are encountered during construction activities. If human skeletal remains are encountered, ground-disturbing activities shall stop within a 100-foot radius of the discovery. Under State Health and Safety Code (HSC) Section 7050.5, if human remains are discovered during any project activity, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition, pursuant to California Public Resources Code (PRC) Section 5097.98. If the county coroner determines that the remains are Native American, the coroner shall contact the NAHC within 24 hours. A qualified archaeologist shall also be contacted immediately. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

MM CUL-3: Stop work if paleontological resources are encountered during construction activities. During grading and site preparation activities, if paleontological resources are encountered, all work in the immediate vicinity of the find shall halt until a qualified paleontologist can evaluate the find and make recommendations. Paleontological resource materials may include fossils, plant impressions, or animal tracks that have been preserved in rock. Impacts on these resources, if not mitigated, would be potentially adverse. If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. Construction shall not resume until the appropriate mitigation measures are implemented or the materials are determined to be less than significant.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. The study area for the cumulative impacts analysis for historical resources encompasses the area within 0.5 mile of the project site; the study area for archaeological and paleontological resources as well as human remains encompasses the entire Antelope Valley because the valley forms a landscape within which similar prehistoric and geological activities have taken place.

Cumulative Impacts on Historical Built-Environment Resources

The study area for the cumulative impacts analysis regarding historical resources encompasses the area within 0.5 mile of the project site. The study area was established to take into account the proximity of past, present, and reasonably foreseeable future projects to the proposed project and

their potential to impact resources similar to those that would be affected by the proposed project. The related project within this area is a single-family housing development south of 47th Street, between Avenue M and Quartz Hill Road.

Because there are no historical resources on or within a 0.5-mile radius of the project site, and because no construction or operational impacts on historical resources are expected to occur as a result of the proposed project, there would be no cumulative impacts on historical resources.

Cumulative Impacts on Archaeological Resources

Prehistoric and historical archaeological sites are non-renewable resources that need to be considered within a larger geographic framework; therefore, the cumulative impacts analysis for archaeological resources encompasses the entire Antelope Valley. The valley forms a landscape within which similar prehistoric archaeological activities and adaptations have taken place, forming a consistent whole for cumulative analysis. Cumulative growth and development in the entire Antelope Valley could have impacts if archaeological resources are found during grading and other construction activities. However, it is unknown if significant resources exist in the areas that would be encompassed by the projects that are proposed for the Antelope Valley. The potential for an individual project to affect significant archaeological resources is unknown, but given the number of projects, it is probable that cumulative growth and development in the Antelope Valley could have impacts on significant archaeological resources.

The proposed project would not make a cumulatively considerable contribution to a cumulative impact related to archaeological resources. As stated earlier, the project area's potential to encompass archaeological resources is low. Furthermore, mitigation measure MM CUL-1 would reduce potential project-related impacts. This mitigation measure includes recovery and treatment of any archaeological resources that might be discovered during project construction. The incremental effects of the proposed project, after mitigation, would not contribute to a significant adverse cumulative impact on archaeological resources. With mitigation, all project-related impacts would be reduced to a less-than-significant level, and the project would not contribute to significant cumulative impacts.

Cumulative Impacts on Paleontological Resources

Paleontological resources, similar to archaeological resources, are non-renewable resources that need to be considered within the larger framework of the Antelope Valley. The geological setting of the valley is a single environment, with similar deposits and potential for paleontological resources, forming a consistent whole for cumulative analysis. Similar to archaeological resources, the potential for grading, excavation, and other construction activities associated with an individual project to affect significant paleontological resources is unknown, but given the number of projects, it is probable that cumulative growth and development in the Antelope Valley could have impacts on significant fossil resources.

The proposed project would not contribute to a cumulative impact related to paleontological resources. As stated earlier, there are no known paleontological resources or unique geologic features within the project site. The Quaternary Holocene to late Pleistocene alluvium near the modern ground surface has little potential for containing vertebrate fossils, and the underlying bedrock is not conducive to the formation of fossils. If a paleontological resource is encountered during construction, mitigation measure MM CUL-3 would reduce potential project-related impacts. This mitigation measure includes recovery and treatment of any paleontological resources discovered during project construction. The incremental effects of the proposed project, after

mitigation, would not contribute to a significant adverse cumulative impact on paleontological resources. With mitigation, all project-related impacts would be reduced to a less-than-significant level, and the project would not make a cumulatively considerable contribution to significant cumulative impacts.

Cumulative Impacts on Human Remains

Human remains have not been identified within the project site. Burials are not known to have occurred in the project area or adjacent areas, and the potential for the discovery of human remains is low. Similar to archaeological resources, the potential for grading, excavation, and other construction activities associated with an individual project to affect human remains is unknown, but given the number of projects, it is probable that cumulative growth and development in the Antelope Valley could have impacts on human remains. However, if human remains are encountered during implementation of the proposed project, the impacts would be considered less than significant with mitigation measure MM CUL-2 incorporated. Therefore, the project would not make a cumulatively considerable contribution to a cumulative impact on human remains.

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VI. Geology and Soils					
Would the project:					
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3. Seismically related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	4. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The geology and soils information contained herein is based on the December 2006 Geotechnical Engineering Report for APN 3101-013-058 (Appendix C), prepared by ESSC.

Quartz Hill is located in the south-central portion of Antelope Valley. Lithologic units exposed in this area consist predominantly of deep Quaternary sediments. Active faults are typically located along the margins of Antelope Valley. The San Andreas rift zone, which is several miles wide, dominates the geology of southern Antelope Valley. The San Andreas rift zone is an extensive zone of active and potentially active faults that extends from the Gulf of California in Mexico to Cape Mendocino in

northern California. The San Andreas fault is the closest active fault to the project site; at its nearest point, it is approximately 3 miles southwest of the project site. There are no known active faults within the project site boundaries.

The project site is approximately 1.75 acres of undeveloped, unimproved land. The project site consists of relatively flat land that slopes to the north at an approximately 1 percent gradient. There is less than 5 feet of elevation across the project site. The project site is vegetated with a light to moderate covering of typical desert weeds, grasses, and brush. The native soils encountered on the project site are alluvial deposits, consisting primarily of silty sands with gravel (SM, silty sand, soil type based upon the Unified Soil Classification System) overlying shallow bedrock. Some of the upper 3 to 4 feet of native soils were found to be relatively loose, non-uniform, and of low relative compaction. The underlying native soils encountered below a depth of approximately 4 feet were found to be medium dense to dense. The bedrock consists of highly weathered Pelona schist.

Regulatory Setting

Alquist-Priolo Fault Zoning Act of 1972

Passed in 1972, the Alquist-Priolo Earthquake Fault Zoning Act is intended to mitigate the hazard of surface faulting to structures for human occupancy. The main purpose of the act is to prevent the construction of buildings for human occupancy on the surface trace of active faults; it is not directed toward other earthquake hazards. The act requires the establishment of Earthquake Fault Zones around the surface trace of active faults; local agencies must regulate most development projects located within these zones (California Geological Survey 2013).

Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code, Chapter 7.8, Section 2690–2699.6) directs the Department of Conservation, California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The SHMA's purpose is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards, such as strong ground shaking, liquefaction, landslides, and other ground failure. The SHMA requires site-specific geotechnical investigations be conducted within Zones of Required Investigation to identify and evaluate seismic hazards and develop mitigation measures prior to permitting most development projects designed for human occupancy (California Geological Survey 2007).

California Building Code

The California Building Code provides minimum standards that regulate a number of aspects of construction including excavation, grading, and fill placement; foundations; mitigation of soil conditions such as expansive soils; and seismic design standards for various types of structures.

County of Los Angeles Building Code

Title 26 (Building Code) of the Los Angeles County Code of Ordinances provides the minimum standards to preserve public peace, health, and safety by regulating the design, construction, quality of materials, use, occupancy, location, and maintenance of all buildings, structures, grading, and certain equipment as specifically set forth within the code. The provisions of Title 26 apply to the construction, alteration, moving, demolition, repair, use of any building or structure, and grading within the unincorporated territory of the County of Los Angeles and to such work or use by the County of Los Angeles in any incorporated city not exercising jurisdiction over such work or use.

Impact Analysis

Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Construction

No impact. The project site is located approximately 3 miles from the nearest fault, the San Andreas fault. The project site is not located within a State of California Alquist-Priolo Earthquake Fault Hazard Zone, and the proposed project does not include the addition of new structures meant for human occupancy within 50 feet of the nearest fault (California Emergency Management Agency 2014). There are no active or potentially active faults with the potential for surface fault rupture directly beneath the project site. Therefore, the potential for surface fault rupture during construction activities is considered minimal. There would be no impact.

Operation

No impact. The proposed project involves construction of a 12,500-square-foot library. The library would be constructed according to the California Building Code and the County of Los Angeles Building Code, which would minimize anticipated impacts related to the proximity of the project site to the San Andreas fault. Further, there are no active or potentially active faults with the potential for surface rupture directly beneath the project site. As such, people or structures would not be exposed to substantial adverse effects from a rupture of a known earthquake fault. No impact would occur.

- 2. Strong seismic ground shaking?**

Construction

Less-than-significant impact. Strong seismic ground shaking effects can include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These effects, which are a possibility throughout the Southern California region, are dependent on the onsite geology and the distance between the project site and the causal fault. The project site is located within the seismically active area of Southern California and has the potential to experience strong ground shaking from local and regional faults. The project site is located within Seismic Zone 4, which is a designation previously used in the Uniform Building Code to denote the areas of the highest risk to earthquake ground motion. Strong seismic ground shaking effects can include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. The closest major active fault that could produce these effects in vicinity of the project site is the San Andreas fault, which is located approximately 3 miles to the southwest. However, grading and construction activities associated with the proposed project would be subject to the California Building Code and the County of Los Angeles Building Code, which would minimize the anticipated impacts related to the proximity of the San Andreas fault by requiring the proposed project to be built to withstand seismic ground shaking. As a result, impacts would be less than significant.

Operation

Less-than-significant impact. For the same reasons as discussed above for construction, operation of the proposed project would result in less-than-significant impacts related to strong seismic ground shaking.

3. *Seismically related ground failure, including liquefaction?*

Construction

No impact. Liquefaction is defined as a loss of strength of saturated cohesionless soil generally due to seismic shaking. Liquefaction occurs more often in areas where shallow groundwater exists in areas underlain by silts and fine sands. Liquefaction occurs when saturated, low-density, loose materials (e.g., sand or silty sand) are weakened and transformed from a solid to a near-liquid state as a result of increased pore water pressure, which can be caused by strong ground motion from an earthquake.

Construction activities associated with the proposed project would not expose people or structures to substantial adverse effects from seismic-related ground failure, including liquefaction. According to the geotechnical study prepared by ESSC (Appendix C), potential for liquefaction was not observed at the project site. Based on site exploration, the shallow alluvial soils below the project site consist of sands that are generally in a medium dense to dense state overlying relatively shallow bedrock. The depth to static groundwater at the project site is greater than 50 feet. Because the static groundwater level under the project site is greater than 50 feet and the foundation soils are relatively dense in nature, the potential for liquefaction and liquefaction-induced settlement is considered negligible. Additionally, according to the California Emergency Management Agency, the project site is not located in a Liquefaction Seismic Hazard Zone (California Emergency Management Agency 2014). Therefore, people or structures would not be exposed to substantial adverse effects from seismic-related ground failure, including liquefaction. No impact would occur.

Operation

No impact. For the same reasons as discussed above for construction, operation of the proposed project would not expose people or structures to substantial adverse effects from seismically related ground failure, including liquefaction. No impact would occur.

4. *Landslides?*

Construction

No impact. Construction of the proposed project would not expose people or structures to substantial adverse effects from landslides. The project site consists of relatively flat land that slopes to the north at an approximately 1 percent gradient. There is less than 5 feet of elevation change across the project site. According to the California Emergency Management Agency, the project site is not located within an Earthquake Induced Landslide Hazard Zone (California Emergency Management Agency 2014). Additionally, there are no steep slopes located on parcels adjacent to the project site. Therefore, people or structures would not be exposed to substantial adverse effects from landslides during construction or operational activities. No impact would occur.

Operation

No impact. For the same reasons as discussed above for construction, operation of the proposed project would not expose people or structures to substantial adverse effects from landslides, and no impacts related to landslides would occur.

b. Result in substantial soil erosion or the loss of topsoil?Construction

Less-than-significant impact. Construction of the proposed project would not result in substantial soil erosion or the loss of topsoil. The proposed project is expected to disturb an area greater than 1 acre; thus, it would be subject to the requirements of the General Construction Permit, which was adopted by the State Water Resources Control Board as Water Quality Order 2009-0009-DWQ (effective July 1, 2010). As such, best management practices (BMPs) would be employed during construction, such as sediment and erosion control measures to prevent pollutants from leaving the site. Additionally, construction of the proposed project would comply with stormwater and grading ordinances. Therefore, construction impacts related to soil erosion or loss of topsoil would be less than significant.

Operation

Less-than-significant impact. Operation of the proposed project would not result in substantial soil erosion or the loss of topsoil. According to the geotechnical engineering report, the project site is located in an area where minor sheet flooding and erosion could occur. However, the landscape plan for the proposed project includes rainwater capture features and bio-swales, which would minimize onsite erosion during operation. Further, BMPs would minimize the potential for soil erosion during operation of the proposed project. Therefore, operational impacts related to soil erosion or loss of topsoil would be less than significant.

c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?Construction

Less-than-significant impact with mitigation incorporated. As stated in the geotechnical report and discussed above, due to the relatively flat topography of the project site, hazards from landslides are considered negligible. The native soils encountered in exploratory borings on the project site are alluvial deposits, consisting predominantly of silty sands with gravel (SM soil type, based on the Unified Soil Classification System) overlying shallow bedrock. Some of the upper 3 to 4 feet of the native site soils were found to be relatively loose, non-uniform, and of low relative compaction. The underlying native soils encountered below a depth of approximately 4 feet were found to be medium dense to dense.

Seismically induced settlement could occur within the younger alluvial soils on the project site. Additionally, based upon the consolidation test results, some of the native site soils within the top 3 to 4 feet are anticipated to demonstrate a slight to moderate tendency to hydrocompress (experience a loss in volume upon wetting, with or without additional loading). The soils tested below a depth of approximately 4 feet were found to demonstrate a negligible to slight tendency to hydrocompress. Mitigation Measure MM GEO-1 is recommended to implement the recommendations contained in the project site's geotechnical evaluation. Remedial grading of the

project site would alleviate most settlement potential and hydrocompression tendencies. Additionally, construction of the proposed project would be subject to the California Building Code and the County of Los Angeles Building Code, which would further reduce potential geologic hazard impacts, including those related to unstable soils. After mitigation is incorporated, impacts from unstable or unsuitable soils would be less than significant.

Operation

Less-than-significant impact with mitigation incorporated. For the same reasons as discussed above for construction, with mitigation measure MM GEO-1 incorporated, operation of the proposed project would have less-than-significant impacts related to unstable and unsuitable soils. Mitigation measure MM GEO-1 is recommended to implement the recommendations contained in the project's geotechnical evaluation. After mitigation is incorporated, impacts related to unstable or unsuitable soils would be less than significant.

- d. *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?***

Construction

Less-than-significant impact. Construction of the proposed project would not occur on expansive soils; therefore, substantial risks to life or property would not occur. Expansive soils are fine-grained soils (generally high-plasticity clays) that can undergo a significant increase in volume with an increase in water content as well as a significant decrease in volume with a decrease in water content. Changes in the water content of highly expansive soils can result in severe distress for structures constructed on or against the soils. Based upon the Expansion Index Test (ASTM D 4829) results, the upper soils located on the project site are considered to have a very low (0-20) expansion potential. Additionally, construction of the proposed project would be subject to the California Building Code and the County of Los Angeles Building Code, which would further reduce potential geologic hazard impacts, including those related to expansive soils. Therefore, impacts would be less than significant.

Operation

Less-than-significant impact. Operation of the proposed project would not occur on expansive soils; therefore, substantial risks to life or property would not occur. For the same reasons discussed above for construction, impacts related to operation of the proposed project would be less than significant.

- e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?***

Construction

No impact. No septic tanks or alternative wastewater disposal systems are proposed as part of the project. Sewage disposal for the proposed project would be provided by the public sewer system. Therefore, no impact would occur.

Operation

No impact. For the same reasons discussed for construction, operation of the proposed project would not result in impacts related to septic tanks or alternative wastewater disposal systems.

Mitigation Measures

MM GEO-1. To provide a more uniform bearing for the proposed library, the construction contractor shall implement the applicable recommendations contained in the Geotechnical Engineering Report prepared by ESSC (2006) to reduce the potential for hydrocompression during construction and implementation of the proposed project.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of the past, present, and reasonably foreseeable future projects to the proposed project and their potential to affect resources similar to those that would be affected by the proposed project.

Past development projects have contributed to the existing conditions in Southern California. Some of these buildings were constructed prior to modern seismic design requirements; however, these buildings and structures have been, and will continue to be retrofitted to withstand seismic activity. Similar to the proposed project, the four related projects within a 1.5-mile radius of the project site, as identified in Table 2-1, include residential, office, and commercial land uses; would be built in a seismically active region of Southern California; and could experience ground shaking and other seismic hazards. However, these projects would also be subject to the California Building Code and other requirements that would make the structures able to withstand seismic activity. Therefore, construction of the proposed project and adjacent projects would not result in cumulatively considerable impacts with respect to geology and seismicity. The cumulative impact from past, present, and probable future projects would be less than significant.

Grading and excavation activities associated with construction of the proposed project and related projects could result in the exposure of soils to wind and water erosion. This could result in a cumulative loss of soil. However, as noted above, projects involving grading of an area greater than 1 acre would be subject to the requirements of the General Construction Permit, which necessitates implementation of BMPs for erosion control. As a result, the proposed and related projects would not result in significant cumulative impacts related to soil erosion.

Construction and operation of the proposed project and related projects would not change the geologic properties of the area. Seismic and geologic risks would not increase or decrease as a result of the proposed project or related projects. Therefore, the proposed project and related projects would not result in cumulatively considerable impacts with respect to geology, soils, and seismicity.

		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VII. Greenhouse Gas Emissions					
Would the project:					
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

According to EPA, a greenhouse gas (GHG) is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere, maintaining the earth’s surface temperature at a level higher than would be the case in the absence of GHGs. Rising levels of GHGs resulting from human activities have increased levels of most of these naturally occurring gases in the atmosphere, which has and will continue to result in an increase in the temperature of the earth’s lower atmosphere, a phenomenon that is commonly referred to as *global warming*. Warming of the earth’s lower atmosphere induces a suite of additional changes, including changes in global precipitation patterns; ocean circulation, temperature, and acidity; global mean sea level; species distribution and diversity; and the timing of biological processes. These large-scale changes are collectively referred to as *global climate change*.

The GHGs listed by the Intergovernmental Panel on Climate Change (IPCC) (2013) include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code Section 38505(g); 14 CCR Section 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources.

To simplify reporting and analysis, GHGs are commonly defined in terms of a global warming potential (GWP). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂ equivalents (CO₂e). The GWP of CO₂ is, by definition, 1. GHG emissions are quantified and presented in terms of metric tons (MT) of CO₂e emitted per year.

Regulatory Setting

Federal

Although climate change and GHG reductions are concerns at the federal level, at this time, no federal legislation or regulations have been enacted specifically related to GHG emissions reductions and climate change. However, recent activity suggests that regulation may be forthcoming. Foremost among recent developments have been the U.S. Supreme Court’s decision in *Massachusetts et al. v. U.S. Environmental Protection Agency*, the “Endangerment Finding,” and the “Cause or Contribute

Finding,” which are described below. Despite these findings, the future of GHG regulation at the federal level is still uncertain and continues to evolve. Recent activity includes proposed standards for CO₂ emissions from new fossil fuel-fired electricity power plants by EPA as outlined in *The President’s Climate Action Plan*, issued in 2013. If approved, these standards would be the first to establish national GHG limits for the electric power industry.

State

A variety of legislation has also been enacted in California relating to climate change, much of which sets aggressive goals for GHG reductions within the state. The following key legislations are applicable to the proposed project:

- Executive Order (EO) S-3-05 is designed to combat climate change by reducing California’s GHG emissions to: (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below 1990 levels by 2050. Note that executive orders are binding only on state agencies.
- EO B-16-2012 is designed to guide state agencies’ efforts to control and regulate GHGs even further, and establishes benchmarks for reducing transportation-related GHG emissions to 80 percent less than 1990 levels by 2050.
- Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, codified the state’s GHG emissions targets, which are similar to the reduction goals in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a plan, which includes market mechanisms, and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” EO S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state’s Climate Action Team. AB 32 identified the acceptable level of GHG emissions in California in 2020 as 427 MMT of CO₂e, which is the same as the 1990 GHG emissions level and approximately 28.5% less than 2020 business as usual (BAU) conditions (596 MMTCO₂e) (ARB 2008).⁶

ARB approved the *First Update to the Scoping Plan* on May 22, 2014 and finalized the Environmental Analysis following public review on May 15, 2014. The First Update includes both a 2020 element and a post-2020 element. The 2020 element focuses on state, regional, and local initiatives that are being implemented now to assist in meeting the 2020 goal. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goals, consistent with the goals set forth in EO S-3-05 and EO B-16-2012 (ARB 2014).

- The State CEQA Guidelines, as amended in 2010, require lead agencies to analyze a project’s GHG emissions. The guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an EIR if “there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements” (§15064.4(b)(3)).

Local

As discussed in Section III, *Air Quality*, the Antelope Valley Air Quality Management District (AVAQMD) has jurisdiction over the northern, desert portion of Los Angeles County. With respect to GHGs and climate change, the AB 32 Scoping Plan does not provide an explicit role for local air

⁶ ARB recently updated the AB 32 Scoping Plan and has revised the 2020 BAU downward slightly to 509 MMT CO₂e, which reflects reduced GHG emissions estimates based on the recent economic downturn and increased efficiencies.

districts in implementing AB 32, but it does state that ARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting and their roles as CEQA lead or commenting agencies, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

SCAG is the federally designated MPO for the majority of the Southern California region. SCAG develops regional plans for transportation, growth management, hazardous waste management, housing, and air quality. The 2008 Regional Comprehensive Plan intends to define and solve regional issues such as housing, traffic, transportation, water, and air quality (SCAG 2008). The Compass Blueprint Growth Visioning effort and Two Percent Strategy encourage concentrating regional growth, consisting of mixed-use and walkable communities with ample open space, in existing and emerging centers along transportation corridors and in transit centers. Most recently, the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy outlined SCAG's plan for integrating transportation and land use planning in response to projected growth, housing needs, changing demographics, and transportation demands in compliance with the GHG emissions-reduction goals set forth by ARB per Senate Bill 375 (SCAG 2012).

Impact Analysis

Appendix G, Section III, of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding air quality impacts.

Thresholds of Significance

The State CEQA Guidelines, Appendix G (14 CCR 15000 et seq.), have identified significance criteria to be considered when determining whether a project could result in significant GHGs and climate change effects. For this analysis, an impact pertaining to GHGs and climate change was considered significant under CEQA if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

Los Angeles County has recently completed the Final Draft Community Climate Action Plan (CCAP) to reduce GHG emissions from community activities within the unincorporated County. The CCAP includes a number of GHG reduction measures that target GHG emissions associated with transportation, building energy, waste, water, and other activities within the County. According to the draft CCAP, the County would avoid approximately 2.4 million metric tons (MMT) of CO₂e with implementation of the measures included in the CCAP (Los Angeles County 2014). The CCAP and General Plan EIR are currently out for public review and are not likely to be certified until spring 2015.

According to the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. As stated earlier, the AVAQMD has jurisdiction over the northern, desert portion of Los Angeles County, which is where the proposed project would be located; thus, the significance thresholds for GHG emissions specified in

AVAQMD's CEQA guidance would be applicable to the proposed project. AVAQMD Rule 3011 (Greenhouse Gas Provisions of Federal Operating Permits) sets forth emission reporting requirements for facilities that emit or have the potential to emit 100,000 tons of CO₂e during any 12-month period. AVAQMD's CEQA guidance recommends use of a significance threshold for GHG emissions of either 100,000 tons CO₂e per year (90,718 metric tons [MT] CO₂e) or 548,000 pounds per day (249 MT CO₂e) (Antelope Valley Air Quality Management District 2011). AVAQMD considers direct impacts to be those that result directly from a proposed project. In this case, the direct impacts would be construction emissions from both on- and off-road vehicle and equipment sources during construction activities. Indirect impacts would be impacts that result from changes that would occur as a result of the project. An example would be new roadway infrastructure to support a new subdivision. Cumulative impacts are the combination of direct and indirect impacts. Therefore, the same thresholds are used to determine a project-level impact and a "cumulatively considerable" net increase in GHG emissions (Antelope Valley Air Quality Management District 2011). Note that because the project is a multi-phased project with separate construction and operational phases, pursuant to AVAQMD guidelines, the project's construction GHG emissions are summed both daily and annually and compared to the applicable thresholds in Table 3-4 separately, while operational thresholds are summed annually and compared to the annual thresholds in Table 3-4 (see Section III) (De Salvo pers. comm.).

Methods

The methodology for identifying construction- and operations-related GHG emissions is presented below.

Construction

Construction of the proposed project's 12,500-square-foot library would result in the generation of GHG emissions. Mass daily combustion emissions were estimated using modeling defaults within SCAQMD's California Emissions Estimator Model (CalEEMod), version 2013.2.2 (South Coast Air Quality Management District 2013) in conjunction with construction equipment, vehicle trip information, and phasing information from the project applicant. Emissions were estimated based on the construction equipment inventory (e.g., number of loaders, water trucks, etc.) as well as worker, haul, and delivery truck trip generation per phase as obtained from the project applicant, while information regarding trip distance, fleet mix, and equipment horsepower were based on model defaults.

Construction is anticipated to begin in July 2015 and take approximately 13 months to complete. Emissions are presented at both the daily and annual time scale and compared with AVAQMD thresholds discussed above. All emissions calculation worksheets and GHG emission modeling output files are provided in Appendix A.

Operation

Once constructed, the proposed project would result in a new long-term source of criteria pollutant emissions. The project would result in emissions from motor vehicle trips, natural gas combustion for space and water heating on site, electricity and water consumption, wastewater and waste generation, and area sources (e.g., landscaping). For purposes of analysis, it was assumed that the proposed project would be fully built out and operational in 2016. Emissions were estimated based on trip generation estimates obtained from the traffic consultant (Intueor 2014) and default utility consumption rates (e.g., electricity, natural gas) for a 12,500-square-foot library.

Emissions are presented at the annual time scale and compared with AVAQMD annual thresholds discussed above. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

Would the project:

- a. ***Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

Less-than-significant impact. GHG emissions from the proposed project can be divided into those produced during construction and those produced during operations.

Construction

Less-than-significant impact. Construction of the proposed project has the potential to create GHG emissions impacts through the use of heavy-duty construction equipment, construction workers' vehicle trips, material deliveries, and trips by heavy-duty haul trucks. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction GHG impacts considers each of these potential sources.

Daily construction-related emissions on the maximum day of activity are shown in Table 3-8. As shown in Table 3-8, maximum daily project-related GHG emissions would not exceed AVAQMD daily construction thresholds for total CO₂e emissions.

Table 3-8. Estimate of Construction GHG Emissions—Pounds per Day

Construction Phase	CO₂	CH₄	N₂O	CO₂e
Grading, foundations, & slab-on-grade	2,291	0.63	<0.01	2,304
On-site & off-site utilities and improvements	1,667	0.45	<0.01	1,677
Structure & framing	1,344	0.32	<0.01	1,351
Rough-ins, exterior-skin, & roofing	1,342	0.34	<0.01	1,349
Interior finishes	455	0.03	<0.01	456
Exterior hardscape & landscape	441	0.02	<0.01	441
Fixtures, furnishings, & equipment	821	0.19	<0.01	825
Maximum Daily Construction Emissions	5,615	1.32	<0.01	5,642
AVAQMD Daily Threshold	—	—	—	548,000
Exceed Significant Threshold?	—	—	—	No
Notes: Numbers may not add up due to rounding. Source: Emissions modeling by ICF 2014 (Appendix A).				

Annual construction-related emissions are shown in Table 3-9. As shown in Table 3-9, annual project-related GHG emissions would not exceed AVAQMD annual thresholds for total CO₂e emissions during either year of construction.

Table 3-9. Estimate of Construction GHG Emissions—Metric Tons per Year

Construction Phase	CO₂	CH₄	N₂O	CO₂e
<i>Year 2015</i>				
Grading, foundations, & slab-on-grade	32	0.01	<0.01	32
On-site & off-site utilities and improvements	39	0.01	<0.01	40
Structure & framing	20	<0.01	<0.01	20
Rough-ins, exterior-skin, & roofing	46	0.01	<0.01	46
Interior finishes	10	<0.01	<0.01	10
Total Emissions in 2015	147	0.04	<0.01	148
AVAQMD Annual Threshold*	—	—	—	90,718
Exceed Significant Threshold?	—	—	—	No
<i>Year 2016</i>				
Interior finishes	21	<0.01	<0.01	21
Exterior hardscape & landscape	13	<0.01	<0.01	13
Fixtures, furnishings, & equipment	5	<0.01	<0.01	5
Total Emissions in 2016	39	<0.01	<0.01	39
AVAQMD Annual Threshold*	—	—	—	90,718
Exceed Significant Threshold?	—	—	—	No
Notes: *AVAQMD's annual threshold of 100,000 tons converted to metric tons to match CalEEMod output, which outputs GHG emissions in metric tons. Numbers may not add up due to rounding. Source: Emissions modeling by ICF 2014 (Appendix A).				

As project-related construction emissions would not exceed AVAQMD's daily or annual thresholds of significance, the impact of construction-related emissions from the project is considered less than significant.

Operation

Less-than-significant impact. Once the project is operational, it would generate GHG emissions associated with motor vehicle trips; natural gas, electricity, and water consumption; wastewater and waste generation; and landscaping.

As shown in Table 3-10, annual project-related GHG emissions are not expected to exceed AVAQMD's operational thresholds for total CO₂e emissions. Consequently, the impact of operations-related emissions from the project on GHG emissions is considered less than significant.

Table 3-10. Estimate of Operational GHG Emissions—Metric Tons per Year

Operational Source	CO₂	CH₄	N₂O	CO₂e
Mobile Sources	564	0.03	<0.01	564
Natural Gas	12	<0.01	<0.01	12
Electricity	29	<0.01	<0.01	29
Water/Wastewater	6	0.01	<0.01	7
Waste	2	0.13	<0.01	5
Landscaping	<1	<0.01	<0.01	<1
Total Annual Emissions	613	0.18	<0.01	617
AVAQMD Annual Threshold*	—	—	—	90,718
Exceed Significant Threshold?	—	—	—	No
Notes: *AVAQMD's annual threshold of 100,000 tons converted to metric tons to match CalEEMod output, which outputs GHG emissions in metric tons. Numbers may not add up due to rounding. Source: Emissions modeling by ICF 2014 (Appendix A).				

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-significant impact. Although Los Angeles County has various policies and initiatives in place to reduce GHG emissions, the County has not yet adopted a qualified plan, policy, or regulation to reduce GHG emissions. Therefore, the most applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions is AB 32, which codified the state's GHG emissions reduction targets for the future. For the state to reach the AB 32 target level of 1990 emissions by 2020, there will have to be widespread reductions in GHG emissions across California. Some reductions will need to come in the form of changes pertaining to vehicle emissions and mileage standards. Some will come from changes pertaining to sources of electricity and increased energy efficiency at existing facilities. The remainder will need to come from plans, policies, or regulations that will require new facilities to have lower carbon intensities than they have under BAU conditions.

The project would not conflict with this GHG emissions-reduction plan. Impacts would be less than significant. A discussion of the project construction and operation is provided below.

Construction

Less-than-significant impact. The AB 32 Scoping Plan details specific GHG emissions-reduction measures that target specific GHG emissions sources. The scoping plan considers a range of actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., a cap-and-trade system), including mobile-source emissions-reduction measures (AB 1493, low carbon fuel standard, vehicle efficiency measures); energy production-related emissions-reduction measures (natural gas transmission and distribution efficiency measures, natural gas extraction efficiency measures); and the Renewables Portfolio Standard (electricity). Consequently, project-related GHG emissions would be reduced as a result of several AB 32 Scoping Plan measures.

As discussed in VII.a, above, project-related construction GHG emissions would be far below AVAQMD daily and annual GHG thresholds. Additionally, annual GHG emissions would be far below any adopted or drafted GHG threshold within the state, including the California Air Pollution Control Officer's 900 MT threshold (California Air Pollution Control Officers Association 2008) and SCAQMD's draft 3,000 MT threshold (South Coast Air Quality Management District 2008), which were both developed to help lead agencies achieve the GHG emissions reduction goals of AB 32. As such, the proposed project would be consistent with the AB 32 goal of reducing statewide GHG emissions to 1990 levels by 2020. The project would not conflict with this GHG emissions-reduction plan. Impacts would be less than significant.

Operation

Less-than-significant impact. As stated above for project construction, project-related operational GHG emissions would also be reduced as a result of several AB 32 Scoping Plan measures. In addition, the proposed project includes design features that would help reduce resource consumption and GHG emissions, potentially including photovoltaic panels on the roof, bioswales, sustainable landscape, natural building ventilation and maximized controlled day lighting, and the goal of achieving a LEED Silver rating. Therefore, project emissions are likely lower than those summarized in Table 3-10, as emissions calculations do not take into account proposed design features that would reduce building energy use for space and water heating, reduce electricity consumption by providing on-site production that produces zero GHG emissions, and reduce water consumption.

As discussed in VII.a above, project-related operational GHG emissions would be far below AVAQMD daily and annual GHG thresholds. Additionally, annual GHG emissions would be far below any adopted or drafted GHG threshold within the state, including the California Air Pollution Control Officer's 900 MT threshold (California Air Pollution Control Officers Association 2008) and SCAQMD's draft 3,000 MT threshold (South Coast Air Quality Management District 2008), which were both developed to help lead agencies achieve the GHG emissions reduction goals of AB 32. As such, the proposed project would be consistent with the AB 32 goal of reducing statewide GHG emissions to 1990 levels by 2020. The project would not conflict with this GHG emissions-reduction plan. Impacts would be less than significant.

Mitigation Measures

No potentially significant impacts related to GHGs would occur as a result of the proposed project. Therefore, no mitigation measures are required.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including in areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

This section discusses existing conditions related to hazardous materials in the project area. The information provided herein is based on the Phase I Environmental Site Assessment prepared by ESSC in July 2014 (Appendix D).

As described in Chapter 2, Project Description, the project site consists of approximately 1.75 acres of undeveloped land. Historical research conducted by ESSC indicates that the project site was undeveloped land in 1917, but by 1928, an orchard was on the site. From 1936 to 2014, the project site consisted of vacant land that was no longer used for agricultural purposes.

A user-provided information questionnaire obtained from a representative of the property owner states that there was an old house on the project site when the owner purchased the land. However, no evidence of this structure was observed on the historic topographic maps or in the aerial photographs reviewed by ESSC. Furthermore, no listings for buildings were found in city directories, and no building permits were found in local building department records.

A field reconnaissance survey of the project site was conducted by ESSC in July 2014. Regulated quantities of hazardous materials, aboveground storage tanks, underground storage tanks, and 55-gallon drums were not observed on the project site. It is unlikely that past land uses involved the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products. Only one recognized environmental condition (REC) was identified, resulting from the site's past use as an orchard. Although it is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during that time, it is not known if any residual chemicals remain in the soil. However, because the project site has remained vacant for approximately 78 years and these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action.

Hazardous Materials Records

One hundred nine (109) federal, state, local, tribal, and proprietary-record databases were reviewed to identify RECs on or in the vicinity of the project site. The American Society of Testing and Materials-specified minimum search distance varies by database but is not greater than 1 mile from the project site. Records were also reviewed on the State Water Resources Control Board's (SWRCB'S) GeoTracker website.

The project site and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites in any of the 109 databases that were reviewed. Additionally, no oil or gas wells were identified on the project site. Although it was not identified in any of the databases, it is assumed that the adjoining property to the west, Westside Body and Paint, located at 5054 West Avenue M-2, uses and stores hazardous materials. However, because the property was not identified as having had a reported spill or release of hazardous materials, it is not considered a REC for the project site.

Fifteen hazardous materials use, storage, disposal, or release sites were identified within 1 mile of the project site. Three of the fifteen sites have had a reported spill or release of hazardous materials. However, two of the three identified hazardous materials release sites have received regulatory agency closure and, therefore, are not considered to be a REC for the project site. The remaining 12 identified hazardous materials use, storage, or disposal sites have not had a reported spill or release of hazardous materials and, therefore, are not considered to be a REC for the project site.

The one identified hazardous materials release site that has not received regulatory agency closure is the Minute Serve Dairy, located approximately 500 feet northeast of the project site at 41940 50th Street West. The property is identified in the Leaking Underground Storage Tank database. Soil samples were collected from the property following underground storage tank removal activities in 1997, and gasoline-contaminated soil was reported. The status of the case is listed as “leak being confirmed.” It does not appear that any work has been done on this property since 1997. Therefore, given the location of the site and the fact that groundwater contamination has not been reported at the property, it is not considered a REC for the project site.

Nearby Schools

Quartz Hill Elementary School is located 220 feet east of the project site at 41820 50th Street West. No other schools were identified within 0.25 mile of the project site.

Nearby Airports

Palmdale Regional Airport is located 5.5 miles east of the project site. At the time of preparation for this IS/MND, the County had not prepared a Land Use Compatibility Plan for Palmdale Regional Airport; however, the County has established an airport area of influence. The project site is not located within the airport area of influence (Los Angeles County Airport Land Use Commission 2003).

General William J. Fox Airfield is located 6.5 miles north of the project site. According to the *General William J. Fox Airfield Land Use Compatibility Plan*, the project site is not located within the airport area of influence (Los Angeles County Airport Land Use Commission 2004). Bohunk’s Airpark is located 5 miles northwest of the project site. This is a private airport with a dirt landing strip, which requires permission for use.

Emergency Planning

The project site is located within the Operational Area (OA) of the Los Angeles County Office of Emergency Management (OEM). OEM is responsible for organizing and directing the preparedness efforts of the Emergency Management Organization of Los Angeles County. OEM’s responsibilities include maintaining an approved Operational Area Emergency Response Plan (OAERP); coordinating disaster plans and exercises with the 88 participating cities, 137 unincorporated communities, and 288 special districts in the county; and providing public education regarding all hazards (OEM 2014). Additionally, the *County of Los Angeles All-Hazard Mitigation Plan* (County of Los Angeles 2005) identifies strategies to reduce or eliminate known risks from natural or human-caused disasters that could occur within the geographic boundaries of the OA. As mentioned above, the project site is located with the OA and falls within the jurisdiction of this plan.

The closest fire station to the project site is Los Angeles County Fire Department (LACFD) Station 84, located at 5030 West Avenue L-14 and within 0.25 mile north of the project site. The next closest fire stations are LACFD Stations 136 and 134, located 2.3 miles southeast and 3 miles northeast of the project site, respectively.

Police protection services are provided by the Lancaster Station of the Los Angeles County Sheriff’s Department, located approximately 6 miles northeast of the project site at 501 West Lancaster Boulevard in the city of Lancaster. This sheriff’s station serves the communities of Antelope Acres, Lake Los Angeles, Lancaster, and Quartz Hill (Los Angeles County Sheriff’s Department 2014).

Wildfire Risk

The urban/wildland interface is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel. The wildland area surrounding the city of Lancaster and the Antelope Valley is made up of desert plant communities that have fairly low combustibility; therefore, it is unlikely that a major firestorm would move along the valley floor and threaten urbanized areas. However, risks may increase during times of high wind conditions, particularly after grass has grown and then dried with the hot summer temperatures.

Although the wildfire risk in the area may be relatively low, hilly and mountainous areas have an increased risk of wildfire (MLC & Associates 2013). In the city of Palmdale, wildfires can occur in mountainous, hillside, and grassland areas. Therefore, wildfire hazard areas have been designated in the southern and western portions of the city of Palmdale (City of Palmdale 1993).

The community of Quartz Hill is surrounded by urban development, with the city of Lancaster to the west, north, and east and the city of Palmdale to the south. According to the California Department of Forestry and Fire Protection (CAL FIRE), the project site is located within a State or Federal Responsibility Area; however, it is not designated as being located within a Very High Fire Hazard Severity Zone (CAL FIRE 2011). The nearest designated fire severity zone is approximately 1.6 miles southeast of the project site and associated with the Leona Valley area. This area is within a State Responsibility Area and designated as a Very High Fire Hazard Severity Zone.

Regulatory Setting

Federal

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program, administered by EPA, to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the “cradle to grave” system of regulating hazardous waste.

Cortese List

U.S.C. 65962.5 (commonly referred to as the Cortese List) pertains to hazardous waste facilities and sites listed by the Department of Toxic Substances Control (DTSC), contaminated drinking water wells listed by the Department of Health Services, sites listed by the SWRCB as having underground storage tank leaks or discharges of hazardous wastes or materials into the water or groundwater, and sites with a known migration of hazardous waste/material, as listed by local regulatory agencies.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation (DOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. The California Highway Patrol and the California Department of Transportation have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. These agencies also have permitting authority for hazardous materials transportation.

State

California Health and Safety Code

DTSC, a department of the California Environmental Protection Agency, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in the state. DTSC regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Division 20, Chapter 6.5, of the California Health and Safety Code deals with hazardous waste control through regulations pertaining to the transportation, treatment, recycling, disposal, enforcement, and permitting of hazardous waste. Division 20, Chapter 6.10, contains regulations that are applicable to the cleanup of hazardous material releases. Title 22, Division 4.5, contains the environmental health standards for the management of hazardous waste. This includes standards for the identification of hazardous waste (Chapter 11) and standards that are applicable to transporters of hazardous waste (Chapter 13). LACFD is the Certified Unified Program Agency (CUPA) for the project area.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (California Health and Safety Code, Chapter 6.11, Sections 25404–25404.9)

This program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the environmental and emergency response programs and provides authority to the CUPA. The CUPA is designed to protect public health and the environment from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes. This is accomplished through inspections, emergency response actions, enforcement, and site mitigation oversight.

California Code of Regulations, Title 8—Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) and the federal Occupational Safety and Health Administration are the agencies with responsibility for ensuring worker safety in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and safe work practices. These standards would be applicable to both construction and operation of the proposed project. The standards included in Cal/OSHA's Title 8 pertain to hazard control (including administrative and engineering controls), hazardous chemical labeling and training, hazardous exposure prevention, hazardous material management, and hazardous waste operations.

California Labor Code (Division 5, Parts 1 and 7)

The California Labor Code is a collection of workplace regulations. The regulations ensure appropriate training for workers who use and handle hazardous materials or operate equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who are in charge of handling hazardous materials will be appropriately trained and educated regarding the materials they handle. Division 5, Part 6, governs the operation and care of hazardous material storage tanks and boilers. Division 5, Part 7, ensures that employees who work with volatile, flammable liquids will be outfitted with appropriate safety gear and clothing.

California Department of Forestry and Fire Protection Fire Prevention Program

The Fire Prevention Program encompasses multiple facets of fire prevention, including fire engineering, vegetation management, fire planning, education, and law enforcement. These techniques can include firebreak construction as well as fuel reduction activities to lessen the risk of wildfire (e.g., brush clearance in communities and along roadways and evacuation routes). The Fire Prevention Program also includes defensible space inspections, emergency evacuation planning, fire prevention education, fire hazard severity mapping, implementation of the State Fire Plan, and fire-related law enforcement activities, such as arson investigation.

Local

County of Los Angeles General Plan Safety Element

Within the Safety Element of the *Los Angeles County General Plan 2035*, the County sets goals and policies to reduce threats to public safety and protect property from wildland and urban fire hazards. The policies also cover hazardous materials and emergency response, preparedness, and recovery. The goals and policies are as follows:

- **Wildland and Urban Fire Hazards:** To reduce threats to public safety and protect property from wildland and urban fire hazards.
 - Policy 15: Maintain and strengthen the review of projects and development proposals, and upgrade County fire prevention standards and mitigation measures in areas of high wildland and urban fire hazard.
 - Policy 16: Continue to coordinate firefighting efforts with state, federal, and local agencies in fire hazard areas, and review and update mutual and automatic aid agreements between the County and other fire protection agencies.
 - Policy 17: Continue efforts to reduce all fire hazards, with special emphasis on reducing hazards associated with older buildings, multi-story structures, and fire-prone industrial facilities; maintain an adequate fire prevention capability in all areas.
 - Policy 18: Expand and improve vegetation management efforts in wildland fire hazard areas.
 - Policy 19: Promote improved watershed management practices to reduce the risk of damaging runoff and debris movement into urban areas.
- **Hazardous Materials:** To reduce threats to the public health and safety from hazardous materials, especially threats induced by earthquakes.
 - Policy 20: Review proposed development projects involving the use or storage of hazardous materials, and disapprove proposals that cannot properly mitigate unacceptable threats to public health and safety to the satisfaction of responsible agencies.
 - Policy 21: Promote the safe transportation of hazardous materials.
 - Policy 22: Encourage businesses and organizations that store and use hazardous materials to improve management and transportation of such materials.
 - Policy 24: Encourage improved, timely communications between businesses and emergency response agencies regarding hazardous materials/waste incidents.

- **Emergency Response, Preparedness, and Recovery:** To strengthen County short-term emergency response and long-term recovery capability.
 - Policy 25: Promote greater public awareness and understanding of safety hazards and emergency preparedness and response procedures.
 - Policy 26: Promote the development of community/neighborhood and workplace self-help and disaster relief groups to improve the effectiveness of local emergency response, light search and rescue, and emergency medical care.
 - Policy 29: Encourage critical facilities to maintain and regularly update emergency response plans that identify safety procedures, disaster control capabilities, and evacuation procedures, such as drills and exercises.
 - Policy 30: Upgrade interagency and multi-jurisdictional communications, planning, and decision-making to ensure efficient and integrated emergency response capability.
 - Policy 32: Establish an appropriate organization composed of County agencies and community representatives to develop adequate reconstruction policies and procedures in advance of a major emergency, and effectively manage rebuilding and recovery operations after a major earthquake or other similar disaster.
 - Policy 33: Support federal and state legislation to develop an adequate earthquake insurance program that includes hazard mitigation incentives.
 - Policy 34: Encourage the improvement of hazard prediction and early-warning capability.

Operational Area Emergency Response Plan

As mentioned above, the OEM maintains the OAERP and is responsible for keeping the plan up to date. The OAERP focuses on potential large-scale disasters, which can create unique situations that require an unusual or extraordinary emergency response. The plan also addresses issues related to the OA's coordinated response to emergency situations associated with natural, human-made, and technological incidents. The objective of the OAERP is to integrate OA resources into an efficient organization that is capable of responding to emergencies with use of the National Incident Management System and the California Standardized Emergency Management System.

Impact Analysis

Would the project:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

Construction

Less-than-significant impact with mitigation incorporated. Construction activities would include the transport, use, and disposal of small amounts of fuel hydrocarbons, solvents, paints, oils, grease, and caulking during the construction phase; however, the use of such materials is typical for construction projects. This would not represent the transport, use, and disposal of acutely hazardous materials. Compliance with federal, state, and local regulations, in combination with construction best management practices (BMPs) implemented from a mandatory Stormwater Pollution Prevention Program (see Hydrology and Water Quality section), is expected. Additionally, as discussed above, field reconnaissance and hazardous materials record searches revealed no current or past actions involving the use, treatment, storage, disposal, or generation of hazardous

substances or petroleum products on the project site. The only REC identified for the project site is related to the site's past use as an orchard. Although it is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during that time, it is not known if any residual chemicals remain in the soil. However, because the project site has remained vacant for approximately 78 years and these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action. In the unlikely event that odiferous, stained, or discolored soil is encountered during construction, mitigation measure HAZ-1 would be implemented to ensure appropriate identification and handling of potentially hazardous materials. Therefore, it is not expected that construction activities would require the routine transport, use, or disposal of hazardous materials, and the impacts would be less than significant with mitigation.

Operation

Less-than-significant impact. It is anticipated that the proposed project would use small quantities of hazardous materials (e.g., solvents, cleaning agents, paints, pesticides, petroleum fuels, propane, batteries, and aerosols) that are typical for commercial uses. Furthermore, any spills of these materials that may occur would be cleaned up expeditiously. The proposed project would not use, store, or involve handling hazardous materials above threshold amounts (generally 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for gases), which would require regulatory oversight and permitting by the local CUPA. Furthermore, the proposed project would be required to comply with applicable federal, state, and local regulations related to hazardous materials. Therefore, operational impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant.

- b. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

Construction

Less-than-significant impact. Although the construction equipment that would be used to build the proposed project could release oils, grease, solvents, and other materials through accidental spills, which could affect surrounding land uses, the consequences of construction-related spills are generally limited compared with other accidental spills and releases. This is because the amount of hazardous material released during a construction-related spill is relatively small (e.g., a single piece of construction equipment generally holds less than 50 gallons of fuel). Construction-related spills of hazardous materials are not uncommon, but the enforcement of construction and demolition standards, including BMPs from appropriate local and state agencies, would minimize the potential for an accidental release of petroleum products and/or hazardous materials or an explosion during construction. Federal, state, and local controls have been enacted to reduce the effects of hazardous materials spills. Therefore, the proposed project would not result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials. The impacts would be less than significant.

Operation

Less-than-significant impact. Operational activities related to public libraries are not associated with the use or storage of large amounts of hazardous substances. Therefore, operation of the proposed project would not result in a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, and the impacts would be less than significant.

c. *Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

Construction

Less-than-significant impact. Although the project site would be located 220 feet from Quartz Hill Elementary School, construction activities would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste. As discussed above, construction activities would include the transport, use, and disposal of small amounts of fuel hydrocarbons, solvents, paints, oils, grease, and caulking during the construction phase; however, the use of such materials is typical for construction projects. This would not represent the transport, use, and disposal of acutely hazardous materials. Furthermore, the proposed project would be required to comply with all applicable with federal, state, and local regulations. Therefore, although the project site would be 220 feet from Quartz Hill Elementary School, construction activities would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, and the impacts would be less than significant.

Operation

Less-than-significant impact. Although the proposed project would be located 220 feet from Quartz Hill Elementary School, operational activities related to public libraries are not associated with hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste, which would require regulatory oversight. As discussed above, it is anticipated that the proposed project would use small quantities of hazardous materials (e.g., solvents, cleaning agents, paints, pesticides, petroleum fuels, propane, batteries, and aerosols) that are typical for commercial uses. Furthermore, any spills that may occur would be cleaned up expeditiously. Additionally, the proposed project would not use, store, or involve handling hazardous materials above threshold amounts (generally 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for gases), which would require regulatory oversight and permitting by the local CUPA. Furthermore, the proposed project would be required to comply with applicable federal, state, and local regulations related to hazardous materials. Therefore, although the project site would be 220 feet from Quartz Hill Elementary School, operational activities would not emit hazardous emissions or involve handling acutely hazardous materials, and the impacts would be less than significant.

d. *Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?*

Construction

Less-than-significant impact with mitigation incorporated. As discussed in the Environmental Setting section, 109 federal, state, local, tribal, and proprietary-record databases were reviewed to identify any RECs on or in the vicinity of the project site. The project site and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites in any of the 109 databases reviewed. However, because of the project site's use as an orchard in 1928), the Phase I Environmental Site Assessment identified one REC on the project site related to the possible application of agricultural chemicals (insecticides, pesticides, and/or herbicides) during that time. It is not known if any residual chemicals remain in the soil; however, the project site has remained undeveloped land for approximately 78 years. Because these compounds tend to biodegrade over time, it is unlikely that residual concentrations would require regulatory action. In the unlikely event that odiferous, stained, or discolored soil is encountered during construction, mitigation

measure HAZ-1 has would be implemented to ensure appropriate identification and handling of potentially hazardous materials. Additionally, the Phase I Environmental Site Assessment identified 15 hazardous materials use, storage, disposal, or release sites within 1 mile of the project site. Twelve of the sites have not had a reported spill or release of hazardous materials and, therefore, are not considered to be a REC for the project site. Two of the remaining sites have had a reported spill or release of hazardous materials but have received regulatory agency closure; therefore, they are not considered to be a REC for the project site. The remaining site is the Minute Serve Dairy, located 500 feet northeast of the project site. It had a reported spill or release of hazardous materials, and no agency closure has been reported. However, as discussed in the Environmental Setting section, because the underground storage tank has been removed, no work has been done on the property since 1997, and no groundwater contamination has been reported at the property, the Minute Serve Dairy is not considered to be a REC for the project site. Therefore, construction of the proposed project would not occur on or in the vicinity of a listed hazardous materials site and result in a significant hazard to the public or the environment. The impacts would be less than significant with mitigation.

Operation

Less-than-significant impact. As described above, the project site and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites in any of the 109 databases that were reviewed as part of this IS/MND. However, one REC was identified on the project site because of its past use as an orchard. Any potentially hazardous materials remaining on the project site are expected to be discovered during the construction phase and remediated per the requirements of mitigation measure HAZ-1. Therefore, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and project implementation would not result in or create a significant hazard to the public or the environment. Impacts would be less than significant.

- e. Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and result in a safety hazard for people residing or working in the project area?*

Construction

No impact. The proposed project would be located 5.5 miles from Palmdale Regional Airport and 6.5 miles from General William J. Fox Airfield. As described above, the proposed project would not be located within the area of influence for either of these airports; therefore, project construction would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

Operation

No impact. Operational impacts related to safety hazards for people residing or working within an airport land use plan area would be the same as those discussed for construction, above. Therefore, project operations would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

Construction

No impact. The proposed project would be located 5 miles from Bohunk's Airpark, which is privately owned and not accessible for public use. The airstrip requires permission prior to landing, and therefore, a limited number of airplanes use the airstrip. Construction of the proposed project would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

Operation

No impact. Operational impacts related to safety hazards for people residing or working within the vicinity of a private land use plan area would be the same as those discussed for construction, above. Operation of the proposed project would not result in a safety hazard for people residing or working in the project area, and no impacts would occur.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction

No impact. The County's OAERP and All-Hazard Mitigation Plan establish safety procedures for major natural or human-caused disasters that could occur within the geographic boundaries of the OA. Additionally, construction activities would not require the closure of any public or private streets or roadways or impede access to the project site or any surrounding areas in the event of an emergency. The proposed project would provide all required emergency access in accordance with the requirements of the LACFD. Therefore, construction activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and no impacts would occur.

Operation

No impact. Operational impacts related to implementation of an adopted emergency response plan or emergency evacuation plan would be the same as those discussed for construction, above. Therefore, operational activities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and no impacts would occur.

h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including in areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Construction

Less-than-significant impact. The proposed project would not be located in within a Very High Fire Hazard Severity Zone, as delineated by CAL FIRE (CAL FIRE 2011). The nearest fire severity zone is approximately 1.6 miles south of the project site and associated with the Leona Valley, just west of the city of Palmdale and the Antelope Valley. Additionally, the neighboring city of Lancaster is also identified as having a relatively low risk of wildfire (MLC & Associates 2013). Construction activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and the impacts would be less than significant.

Operation

Less-than-significant impact. Operational impacts would be the same as those discussed above for construction of the proposed project. Additionally, the proposed project would be equipped with all necessary fire protection devices, in accordance with County guidelines, including fire alarm and fire suppression systems. Therefore, operational activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and the impacts would be less than significant.

Mitigation Measures

HAZ-1: If odiferous, stained or discolored soil is encountered during construction, the construction contractor shall perform the following:

- Construction personnel shall seek the professional recommendation of a consultant who specializes in the handling and identification of hazardous materials.
- The suspect soil shall be isolated and covered and bypassed by construction personnel until analytical results are reviewed by qualified personnel.
- Analytical results shall be compared to EPA's Regional Screening Levels (RSLs) for residential developments.⁷ RSLs are screening levels developed by EPA for common environmental pollutants.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the proposed project and their potential to affect resources similar to those that would be affected by the proposed project.

Four related projects within 1.5 miles of the project site are considered in the cumulative impacts analysis because of the proximity of past, present, and reasonably foreseeable future projects in this area to the proposed project and their potential to affect resources similar to those that would be affected by the proposed project. The related projects involve the development of residential, retail, and office uses that do not routinely transport, use, or dispose of hazardous materials. It is expected that the use and transport of petroleum-based lubricants, solvents, fuels, herbicides, and pesticides to and from the proposed project site and related project sites would occur only intermittently during construction and operations. Additionally, the proposed project and related projects would not involve the routine transport, use, or disposal of hazardous materials that are regulated by DOT, the California Highway Patrol, or California Department of Transportation. Therefore, the proposed project and related projects would not have the potential to result in a cumulatively significant impact from the routine transport, use, or disposal of hazardous materials.

⁷ Residential being the more conservative of the two land uses considered for RSLs, the other being industrial.

With respect to impacts related to the creation of a hazard through upset or accident conditions involving the release of a hazardous material, the proposed project has the potential to release oils, grease, solvents, and other materials through accidental spills. However, federal, state, and local controls have been enacted to reduce the effects of potential hazardous materials spills. This impact would not have the potential to result in a cumulative hazard because any potential impacts would be localized, occurring only in the immediate vicinity of the project site. Furthermore, the implementation of appropriate safety measures during construction would reduce the impact.

With respect to impacts from hazardous emissions or the handling of hazardous materials within 0.25 mile of an existing or proposed school, only related project #4 is located within 0.25 mile of Quartz Hill Elementary School. Similar to the proposed project, the uses proposed at related project site #4 would not emit hazardous emissions or involve handling acutely hazardous materials. Therefore, the proposed project and related projects would not result in a cumulatively significant impact related to hazardous emissions or the handling hazardous materials within 0.25 mile of an existing or proposed school. Additionally, the project site is not a listed hazardous materials site. Accordingly, it would not result in cumulative impacts related to a significant hazard to the public caused by its location. Finally, the proposed project and related projects would not result in cumulative wildland fire-related impacts because of its location in an area with low wildland fire risk.

IX. Hydrology and Water Quality		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j.	Contribute to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Precipitation in the region ranges, on average, from less than 10 inches per year on the valley floor to more than 12 inches per year in the surrounding mountains. The project site is pervious (bare land) and open on all sides, with no fencing. The vegetation cover on the project site ranges from light to moderate and includes typical desert vegetation, consisting of weeds, grasses, brush, and bushes. Native soil on the project site is composed of alluvial deposits, consisting primarily of silty soils and gravel, with some of the upper 3 to 4 feet of soil being relatively loose and non-uniform and displaying relatively low compaction.

Surface Hydrology

The proposed project would be located in the Lancaster Hydrologic Area (HA) (HA No. 626.50), within the Antelope Hydrologic Unit (HU) (HU No. 626.00) of the larger South Lahontan Hydrologic Region. The Antelope Valley region covers 2,400 square miles and is a closed topographic basin with no outlet to the ocean. All water that enters the region infiltrates into the groundwater basin, evaporates, or, ultimately, flows toward the three dry lakes located on Edwards Air Force Base (i.e., Rosamond Lake, Buckhorn Lake, and Rogers Lake) (Los Angeles County Department of Public Works, 1987). Surface water flows are carried by ephemeral streams. The most significant streams begin in the San Gabriel Mountains on the southwestern edge of the region and include, from east to west, Big Rock Creek, Little Rock Creek, and Amargosa Creek; Oak Creek flows from the Tehachapi Mountains. Amargosa Creek runs in a south/north direction between State Route 14 and Sierra Highway. The California Aqueduct is located approximately 1.5 miles southwest of the project site. The aqueduct does not capture stormwater runoff from land because it is elevated and has high berms. However, water may be pumped or discharged into the aqueduct to prevent ponding or flooding in the area. Figure 3-6. identifies significant surface hydrological features in the project vicinity.

The project site, which is relatively flat, slopes to the north at an approximate 1 percent gradient. There are no existing surface waters or stormwater drains on-site. Currently, water from properties to the south flows onto the site; however, the natural drainage flows northward and off the site. The closest storm drain is approximately 150 feet northeast of the site at 50th Street West.

Surface Water Quality

The project site is located within the jurisdiction of the Lahontan Regional Water Quality Control Board (Lahontan Water Board). Similar to all Regional Water Quality Control Boards (Regional Water Boards), the Lahontan Water Board designates beneficial uses for all water body segments in its jurisdiction and then sets the criteria necessary to protect such uses. Consequently, the water quality objectives developed for particular water segments are based on the designated use and vary depending on such use. The Lahontan Water Board has set numeric and narrative water quality objectives for several substances and parameters in the numerous surface waters in its region. For those waters that do not have specific beneficial uses or water quality objectives, the tributary rule⁸ applies.

Table 3-11 describes the designated beneficial uses for minor surface waters and wetlands within the Lancaster Hydrologic Area of the Antelope Hydrologic Unit.

⁸ The “tributary rule” refers to streams that are not specifically listed in the plan but deemed to have the same beneficial uses and water quality objectives of the listed stream, river, or lake to which they are a tributary.

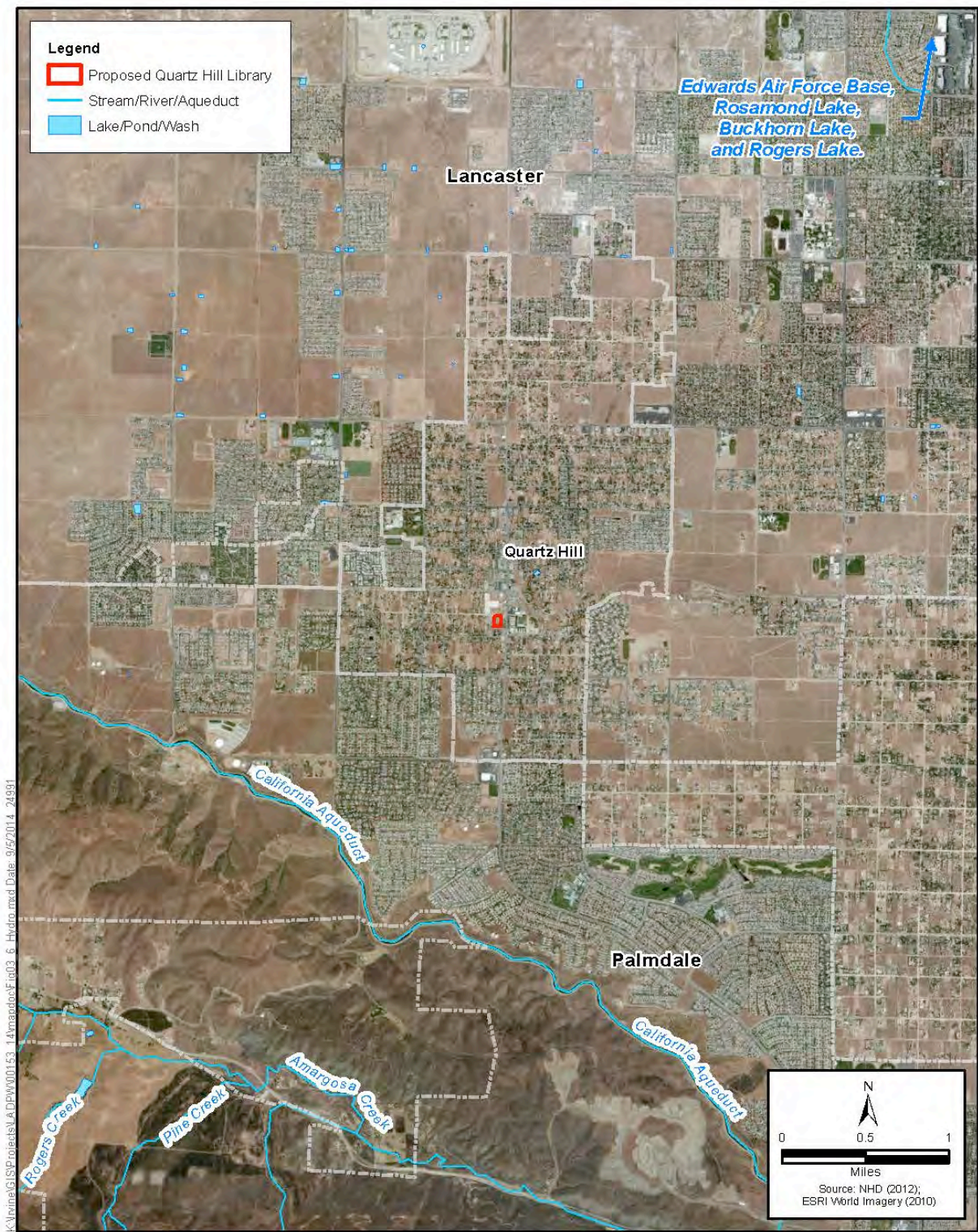


Figure 3-6
Hydrology within the Project Vicinity
Los Angeles County Quartz Hill Library



Table 3-11. Designated Beneficial Uses within the Lancaster Hydrologic Area of the Antelope Hydrologic Unit

Drainage Feature	Beneficial Uses									
	MUN	AGR	GWR	FRSH	REC-1	REC-2	WARM	WILD	WQE	FLD
Minor Surface Waters	X	X	X		X	X	X	X		
Minor Wetlands	X	X	X	X	X	X	X	X	X	X
KEY: AGR – Agricultural Supply FLD – Flood Peak Attenuation/Flood Water Storage FRSH – Freshwater Replenishment GWR – Groundwater Recharge				MUN – Municipal and Domestic Supply REC-1 – Water Contact Recreation REC-2 – Noncontact Water Recreation			WARM – Warm Freshwater Habitat WILD – Wildlife Habitat WQE – Water Quality Enhancement			
Source: Lahontan Water Board 1995.										

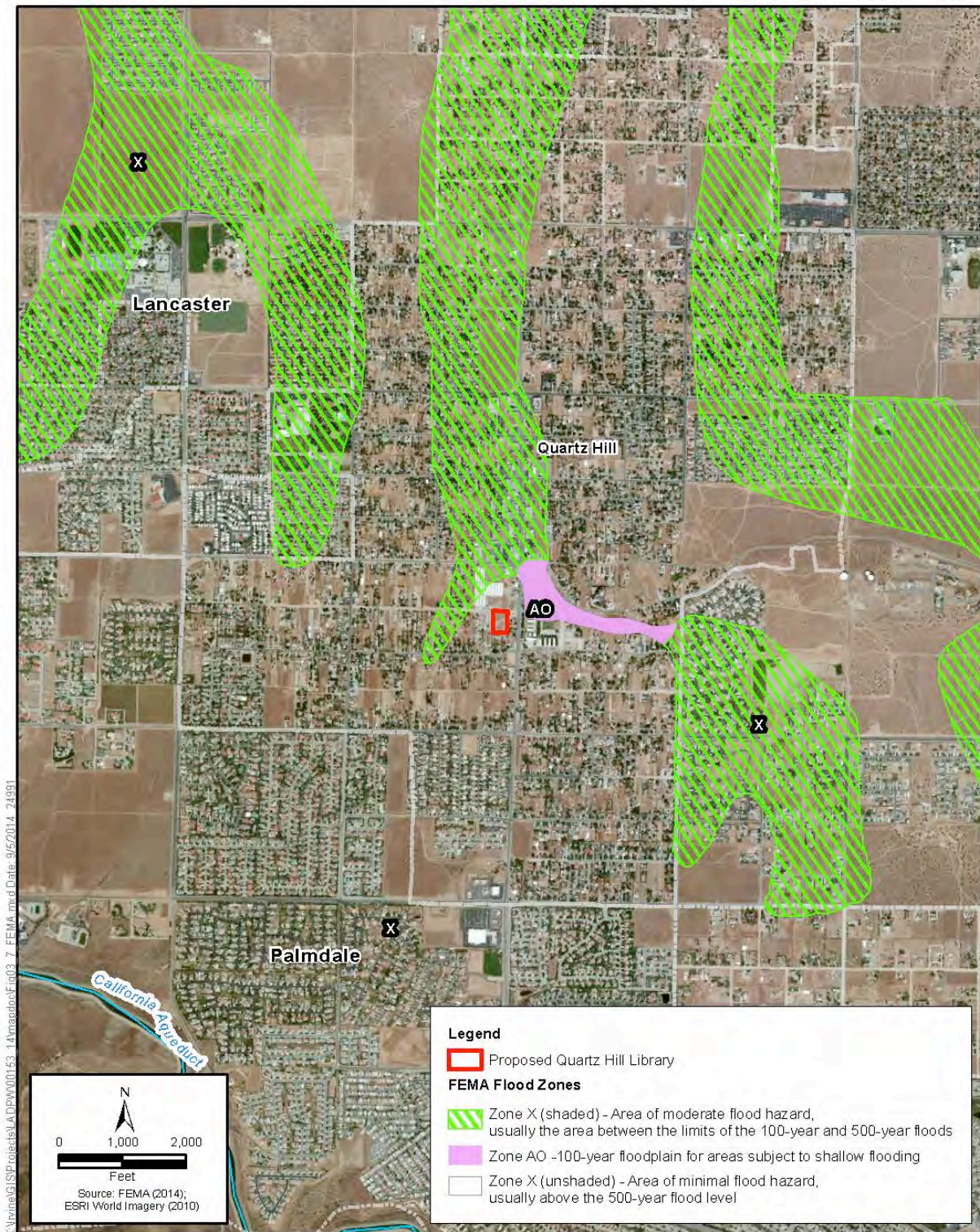
The State Water Resources Control Board (State Water Board) identifies waters that fail to meet standards for specific pollutants. The waters are state listed in accordance with the federal Clean Water Act (CWA), Section 303(d). There are no 303(d)-listed impairments for downstream receiving waters with the potential to be affected by the proposed project.

Flooding

The project site is not located within a 100-year flood zone (i.e., 0.1 percent annual chance of flooding), as designated by the Federal Emergency Management Agency (FEMA) and shown in Figure 3-7. The site is located within Zone X (unshaded), which is an area of minimal flood hazard and usually depicted on Flood Rate Insurance Maps (FIRMs) as above the 500-year flood level (i.e., 0.2 percent annual chance of flooding). In addition, the site is located just southwest of a Flood Zone AO area (at the corner of 50th Street West and West Avenue M, as shown in Figure 3-7) located near Quartz Hill Road, between 45th and 50th Streets (FEMA 2014). Flood Zone AO is designated for 100-year flood zones and subject to shallow flooding (usually sheet flow on sloping terrain), with average depths between 1 and 3 feet. Some Flood Zone AO areas have been designated where high flood velocities occur, such as alluvial fans and washes. The project site is also just southeast of Zone X (shaded), an area of moderate flood hazard, usually the area between the limits of the 100- and 500-year floods. Zone X (shaded) is also used to designate base floodplains with lesser hazards, such as areas with 100-year levee protection or shallow flooding, with average depths of less than 1 foot or drainage areas of less than 1 square mile (FEMA, 2014). This situation is aggravated by the lack of drainage facilities and defined flood channels. Heavy winter rainfall and summer thunderstorms increase the potential for flash floods.

Stormwater runoff that does not percolate into the ground flows to surface waters, such as seasonal drainages; nearby aqueducts or flood control channels; lakes; or, eventually, the impermeable dry lakebeds, or playas, at Edwards Air Force Base. Totalling about 60 square miles, these playas⁹ are generally dry but are likely to be flooded following prolonged precipitation. Fine sediments carried by the stormwater inhibit percolation, as do the impermeable playa soils. Surface water can remain on the playa for up to 5 months, until the water evaporates (California Department of Water Resources [DWR] 2013).

⁹ A playa is a dry lakebed. These playas are Rosamond Lake, Buckhorn Lake, and Rogers Lake.



**Figure 3-7
 FEMA Flood Zones within the Project Vicinity
 Los Angeles County Quartz Hill Library**



Groundwater Hydrology

The Antelope Valley Groundwater Basin (Basin Number 6-44) underlies an extensive alluvial valley in the western Mojave Desert. The elevation of the valley floor ranges from 2,300 to 3,500 feet above sea level. The basin is bounded on the northwest by the Garlock fault zone, at the base of the Tehachapi Mountains, and on the southwest by the San Andreas fault zone, at the base of the San Gabriel Mountains. The basin is bounded on the east by ridges, buttes, and low hills that form a surface and groundwater drainage divide and on the north by the Fremont Valley Groundwater Basin, which is located at a groundwater divide approximated by a southeastward-trending line from the mouth of Oak Creek, through Middle Butte, to exposed bedrock near Gem Hill and by the Rand Mountains farther to the east (DWR 2004).

From 1975 through 1998, groundwater levels increased by 84 feet and decreased by 66 feet (Carlson 1998). The parts of the basin with declining water levels were along the State Route 14 corridor (from Palmdale, through Lancaster, to Rosamond) and in areas surrounding Rogers Lake on Edwards Air Force Base. Historically, groundwater in the basin flowed northward from the San Gabriel Mountains and to the south and east from the Tehachapi Mountains, toward Rosamond Lake, Rogers Lake, and Buckhorn Lake. These dry lakes are places where groundwater can discharge by evaporation. Because of recent groundwater pumping, groundwater levels and flows have been altered in urban areas such as Lancaster and at Edwards Air Force Base. Groundwater pumping has caused subsidence of the ground surface as well as earth fissures in Lancaster and on Edwards Air Force Base. By 1992, approximately 292 square miles of Antelope Valley had subsided by more than 1 foot. This subsidence has permanently reduced aquifer-system storage by about 50,000 acre-feet (Sneed 2000).

A geotechnical engineering report was completed by ESSC on December 28, 2006. The report stated that no groundwater was encountered after two geotechnical test borings, and the probability of liquefaction was negligible (ESSC 2006).

Groundwater Quality

Groundwater quality in the Antelope Valley region is excellent within the principal aquifer, but it degrades toward the northern portion of the dry lake areas. The groundwater is characterized by calcium bicarbonate near the surrounding mountains and sodium bicarbonate or sodium sulfate in the central part of the basin. In the eastern part of the basin, the upper aquifer has a sodium-calcium bicarbonate type of water, and the lower aquifer has a sodium bicarbonate type of water. Considered to be generally suitable for domestic, agricultural, and industrial uses, water from the principal aquifer has a higher total dissolved solids (TDS) level. Hardness¹⁰ ranges from 50 to 200 milligrams per liter (mg/L). High fluoride, boron, nitrate, chromium, and antimony levels are problems in some areas of the basin. The groundwater in the basin is used for agricultural, municipal, and industrial purposes (Los Angeles County Waterworks Districts 2013).

¹⁰ Water hardness is a measure of the amount of dissolved calcium and magnesium salts in the water.

Regulatory Setting

Federal

Clean Water Act (33 U.S.C. 1251 et seq.)

EPA is the lead federal agency responsible for water quality management. The CWA is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states.

Under federal law, EPA has published water quality regulations under Volume 40 of the CFR. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge regarding the kind and extent of effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, EPA has given the State Water Board and its Regional Water Boards the authority to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA Section 402 to regulate point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Examples of pollutants include, but are not limited to, rock, sand, dirt, and agricultural, industrial, and municipal waste discharged into waters of the United States. See 40 CFR Section 122.2 of 40 for the actual definitions of point sources, pollutants, and water of the United States.

The NPDES program is a federal program that has been delegated to the State of California for implementation through the State Water Board and the nine Regional Water Boards, collectively "Water Boards." In California, NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the United States.

NPDES General Construction Stormwater Permit

The General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ) (Construction General Permit), amended by Order No. 2012-0006-DWQ on July 17, 2012, regulates stormwater discharges for construction activities. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit.

NPDES General Municipal Stormwater Permit

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4). Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities that disturb an area of 5 acres or more. Phase II (Small MS4) regulations require stormwater management plans to be developed by municipalities with populations smaller than 100,000 and construction activities that disturb 1 or more acres of land area.

MS4 permits require cities and counties to develop and implement programs and measures to reduce discharges of pollutants into stormwater to the maximum extent possible. These programs and measures may include management practices, control techniques, system design and engineering methods, and other measures, as appropriate. As part of permit compliance, the permit holders create stormwater management plans for their respective locations. These plans outline requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. In addition, the requirements may include multiple measures to control pollutants in stormwater discharge. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the stormwater management plans, as defined by the permit holder for that location.

State

Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the act, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of the State Water Board and Regional Water Boards, which adopt and periodically update water quality control plans (Basin Plans). Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. Quartz Hill falls under the jurisdiction of the Lahontan Region Hydrologic Basin Planning Area.

The act also requires waste dischargers to notify the Regional Water Boards of their activities by filing Reports of Waste Discharge and authorizes the State Water Board and Regional Water Boards to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals.

Local

Los Angeles County Department of Public Works

Flood Control District Easement

Construction activities located within Los Angeles County Department of Public Works Flood Control District (LACFCD) rights-of-way or crossing a storm drain structure require an LACFCD flood permit. The permit process includes submitting construction plans, hydraulic and hydrologic calculations, a certificate of liability insurance, and associated fees.

Storm Drain Connection Permit

Installations of new storm drains that connect to County drainage facilities require a connection permit from LACFCD. The permit process includes submittal of a permit application, as-built plans showing how the drain will be connected, the allowable flow-rate value, a hydrology report, and a fee, which corresponds to pipe sizing specifications and the number of connections. The permit also includes a water quality agreement that specifies that the new storm drain will discharge normal stormwater only, that corrective measures will take place in the event that non-stormwater/ material is released through the connection, and that the County will be reimbursed for the cost of cleaning or repair of the storm drain, water course, or channel, which may be necessary because of misuse of the storm drain connection.

Los Angeles County Stormwater and Runoff Pollution Control Program and Stormwater Ordinance

As separate permittees under the NPDES MS4 permit, LACFCD and the County implement their own stormwater programs. The County's Stormwater and Runoff Pollution Control Program tracks industrial and commercial businesses in the unincorporated County area to determine compliance with the provisions of the MS4 permit issued by the Los Angeles Regional Water Board. As part of this program, a stormwater ordinance was developed to protect the beneficial uses, marine habitats, and ecosystems of receiving waters within the County from pollutants carried by stormwater and non-stormwater discharges. The ordinance includes uniform minimum standards, guidelines, and/or criteria for specific discharges, connections, and/or best management practices (BMPs).

The County revised its Low-Impact Development (LID)¹¹ requirements in 2014 and developed a LID manual that explains how a site designer/engineer can use a wide array of simple, cost-effective techniques that focus on site-level hydrologic control to meet LID regulations. The LID manual describes those techniques, provides examples and descriptions of how they work, and contains BMP fact sheets. Also, the HydroCalc calculator allows the site designer/engineer to calculate runoff rates and volumes.

Grading Permit

Construction in Los Angeles County is subject to Appendix J of the Los Angeles County Building Code, which is based on the Uniform Building Code. The Los Angeles County Building Code states that a grading permit is required for all construction activities involving 50 cubic yards or more of excavation, more than 2 feet in depth, or cut slopes greater than 5 feet. Specific requirements for obtaining a grading permit are contained in the Los Angeles County Grading Guidelines.

Impact Analysis

Would the project:

a. Violate any water quality standards or waste discharge requirements?

Construction

Less-than-significant impact. Construction of the proposed project would require temporary disturbance of surface soils and impervious cover using conventional cut-and-fill methods. The current estimate is that approximately 2,500 cubic yards of soil would be over-excavated and recompacted to create the building pad, parking lot, and perimeter bioswale. Water quality impacts associated with the proposed project would include short-term construction-related erosion, sedimentation, and contamination from hazardous materials, such as paints, solvents, cleaning agents, and metals used during construction. There are no existing surface waters or stormwater drains on project site. Currently, water from properties to the south flows onto the site; however, the natural drainage flows northward and off the site. The closest storm drain is approximately 150 feet northeast of the site at 50th Street West. Stormwater runoff within the work access area has the potential to contaminate the groundwater through soil infiltration. This contamination would come from pollutant sources such as motor oil, chemicals, detergents, and other materials used during construction activities. During precipitation events, sheet flows could reach the storm drain.

¹¹ LID is a design strategy that uses naturalistic, on-site BMPs to lessen the impacts of development on stormwater quality and quantity. The goal of LID is to mimic the undeveloped runoff conditions of the development site under post-development conditions.

However, construction work would not occur during rain events, and stockpiles and other materials would be stored to prevent them from entering storm drains.

The Construction General Permit is required for soil disturbance activities greater than 1 acre. The proposed project would disturb approximately 1.75 acres and, therefore, would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the General Construction Permit. The proposed project's civil engineer would prepare a stormwater and erosion control drawing as part of the permitted set of drawings. Typical stormwater best management practices (BMPs) that could be implemented include:

- Straw wattles and/or silt fences around stockpiles, areas of land disturbance, and stored materials, which would be covered prior to predicted rain events
- Stabilized construction entrance/exit areas (a series of steel plates with rumble strips)
- Catch basin/inlet protection.

The proposed project would be required to obtain a grading permit from the County, which would further ensure the implementation of BMPs related to water quality. With implementation of the applicable grading permit requirements and the construction SWPPP, the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, impacts on water quality from construction activities would be less than significant.

Operation

Less-than-significant impact. Project operation may introduce pollutants, such as oil and grease from parking lots, trash, and pesticides and fertilizers from landscaped areas. Through compliance with the MS4 permit and other applicable stormwater requirements, the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, the project's operational impacts would be less than significant.

- b. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?***

Construction

Less-than-significant impact. The proposed project would not require any dewatering during construction and would not result in the construction of a new groundwater well. Maximum depths of over-excavation and recompaction would be approximately 5 feet in the building pad area; excavation depths for the sewer and the underground storm detention system could be slightly greater. According to the 2006 geotechnical report, no shallow groundwater was found beneath the project site. Therefore, it is unlikely that groundwater would be encountered during utility excavation. The impacts are anticipated to be less than significant.

Operation

Less-than-significant impact. The new impervious surface area for the library and associated parking lot would total approximately 0.65 acre. This new impervious surface area would decrease infiltration. However, approximately 1.1 acres of pervious surface would remain, and perimeter bioswales would be installed around the parking lot. The bioswales, which would terminate in seepage pits, would slow the rate of runoff velocity and increase the infiltration rate.

Drinking water in Quartz Hill comes from groundwater supplied by the Quartz Hill Water District. As stated in Section XVII, Utilities and Service Systems, the Quartz Hill Water District analyzed the project's potential water use in its Urban Water Management Plan (UWMP) and determined that adequate water supplies would be available for the new library. Water usage at the new library would be limited to bathroom uses, minor landscape watering, and other minor uses. The proposed library's conceptual design incorporates a sustainable landscape design that includes drought-tolerant plant materials, rainwater capture systems, and an irrigation design that utilizes highly efficient systems. These features would minimize water use and the potential need for groundwater supplies during project operation. Therefore, impacts are anticipated to be less than significant.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

Construction

Less-than-significant impact. No effects on drainage are anticipated during construction activities. As described above, BMPs, such as straw wattles and/or silt fences, would be placed around stockpiles, and areas of land disturbance would be covered prior to predicted rain events. Furthermore, a catch basin/inlet protection would reduce the potential for erosion and sedimentation. Therefore, impacts would be less than significant.

Operation

Less-than-significant impact. Currently, the site topographically is relatively flat, sloping to the north at an approximate 1 percent gradient. There is less than 5 feet of elevation differential across the project site. At the time of the field exploration, the project site consisted of vacant, unimproved land. The site receives off-site sheet flow drainage from properties to the south. Sheet flow from the south flows into an existing cross gutter and continues onto properties to the north.

The proposed project would alter the existing flow by impeding surface flow at the footprint of the building. Rainwater capture from the roof would prevent erosion along the foundation of the building. The bioswale would manage 100 percent of the water flowing from the adjacent properties.

Currently, surface water runoff from the project site drains toward the northeasterly corner of the site. The proposed project would alter the existing drainage patterns on the site by adding approximately 0.65 acre of new impervious area, including structures and paved areas. As such, the proposed project would result in an increase in runoff from the site and an overall increase in debris. The proposed project would incorporate sustainable landscape design that would take into consideration the desert conditions of the area and emphasize drought-tolerant plant materials, rainwater capture systems, and an irrigation design that utilizes highly efficient systems. Therefore, the impact would be less than significant.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Construction

No impact. No effects related to flooding are anticipated during construction activities. There are no streams or rivers within the project vicinity. Therefore, the project would not alter the course of a stream or river. There would be no impact.

Operation

Less-than-significant impact. The library building and 45-space parking lot proposed by the project would add approximately 0.65 acre of impervious surface area. Runoff from the library's roof would be collected in a rainwater catchment system and, thus, would not contribute to increased rates of surface runoff. The parking lot would drain to the perimeter bioswales, which, in turn, would drain to seepage pits. During a significant storm, the seepage pits would overflow through parkway culverts, with flows continuing to their historical path. All areas on the project site (excluding the bioswales) would drain into a sand/oil separator, then into an underground detention system that would be designed to handle recurring 25-year storms (Los Angeles County Chief Executive Office, 2014). In a major rain event, the detention system would be designed to overflow, and the water would continue to its historical path. The historical path would drain to closest storm drain inlet (catch basin) on 50th Street West. Stormwater runoff would ultimately be conveyed to bio-treatment areas that would help minimize the potential for localized ponding or flooding within the project area. In addition, there are no streams or rivers within the project vicinity; therefore, this change would not alter the course of a stream or river. Impacts would be less than significant.

- e. ***Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***

Construction

Less-than-significant impact. No effects related to flooding are anticipated during construction activities. The project site is not located within an LACFCD easement, nor are flood control facilities (i.e., storm drains) located on the site. As described above, BMPs, such as straw wattles and/or silt fences, would be placed around stockpiles and areas of land disturbance and covered prior to forecast rain events. Catch basin/inlet protection would reduce the potential for additional sources of polluted runoff to flow into storm drains. Therefore, impacts are anticipated to be less than significant.

Operation

Less-than-significant impact. The proposed project would add new impervious area and thus increase the amount of sheet flow off-site. There are no existing stormwater drains on-site. Currently, water from properties to the south flows onto the site; the natural drainage flows northward and off the site. The closest storm drain is in 50th Street West. The proposed library's conceptual design incorporates an underground stormwater detention system. If a new storm drain is installed, an LACFCD connection permit will be obtained from the County Department of Public Works. The proposed rainwater catchment system would prevent runoff from the building's roof from exceeding the capacity of the storm drainage system. The perimeter bioswale parking lot would slow the velocity of surface runoff and provide some treatment before discharge into the municipal stormwater system, preventing polluted runoff from exceeding the storm drainage system capacity. Impacts would be less than significant.

- f. ***Otherwise substantially degrade water quality?***

Construction

No impact. The proposed project would not result in substantial water quality impacts, other than those described above. There would be no impact.

Operation

No impact. The proposed project would not result in substantial water quality impacts, other than those described above. There would be no impact.

g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Construction

No impact. No housing is proposed on-site, nor is the site located on a 100-year floodplain (FEMA, 2014). Therefore, no impact would occur.

Operation

No impact. No housing is proposed on-site, nor is the site located within a 100-year floodplain (FEMA, 2014). Therefore, no impact would occur.

h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

Construction

No impact. The project site is not located within a 100-year floodplain. Therefore, no impact would occur.

Operation

No impact. The project site is not located within a 100-year floodplain. Therefore, no impact would occur.

i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

Construction

No impact. There are no levees or dams in the vicinity of the proposed project. No impact would occur.

Operation

No impact. There are no levees or dams in the vicinity of the proposed project. No impact would occur.

j. Contribute to inundation by seiche, tsunami, or mudflow?

Construction

No impact. The project site is outside the Tsunami Hazard Zone, as mapped by the California Emergency Management Agency, and approximately 50 miles from the Pacific Ocean. Therefore, there would be no impact related to potential tsunami inundation.

The closest enclosed body of water where an earthquake-induced seiche could occur is Castaic Lake, which is 20 miles from the project site. This is considered to be too far away to affect the project site. Overflow caused by a seiche would have no impact on the project site.

The project site is located in an area with generally flat topography; it does not have the relief or slope that would generate a mudflow. Steep topography and high levels of precipitation are the primary requirements for a mudflow. Therefore, the proposed project would not result in impacts associated with mudflows.

Operation

No impact. For the same reasons as discussed above for construction, operation of the proposed project would not result in impacts related to potential tsunami inundation, overflow caused by a seiches, and mudflows.

Mitigation Measures

No potentially significant impacts related to hydrology and water quality would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Analysis

The project would not degrade water quality. Of the four related projects within a 1.5-mile radius, two are residential (single-family units), one is a retail carwash/automobile service station, and one is a general office for a public utility service center. Related projects within the area could degrade stormwater quality by contributing pollutants during construction and operation. When the effects of the proposed project on water quality are considered in combination with the potential effects of related projects, the potential would exist for cumulative impacts on the quality of surface water, stormwater, and groundwater. However, the incremental contribution to water quality impacts from implementation of the project would be minor because the required BMPs would reduce the potential for pollutant discharges in stormwater runoff.

The combined effects of the proposed project and related projects on water quality could result in a cumulatively significant impact. However, the related projects would also be subject to the requirements of the Construction General Permit, grading permit, and other related stormwater requirements, which are designed to protect water quality. Therefore, the proposed project, in conjunction with the related projects, would not result in significant cumulative impacts on hydrology and water quality within the project area. The project's contribution to water quality impacts would not be cumulatively considerable.

X. Land Use and Planning	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located in the Business District of Quartz Hill, California. Quartz Hill is an unincorporated residential community in northern Los Angeles County. The Business District of Quartz Hill runs from Avenue L to the north to Avenue N to the south (2 miles) and is 1 to 2 blocks wide from east to west.

The project site is a 1.75-acre unimproved parcel located approximately 150 feet west of 50th Street West on Avenue M-2. The site is 0.2 mile from the existing library and across the street from Quartz Hill Elementary School. It is also adjacent to the Grange Hall to the east, a single-family residence to the south, an auto body repair shop to the west, and commercially zoned vacant land to the north across Avenue M-2.

Los Angeles County General Plan

The adopted *Los Angeles County General Plan* is a comprehensive policy document that aids decision-makers in guiding future development in a manner that is consistent with the needs, goals, and interests of the public. It consists of chapters and elements that have been mandated by the California Government Code as well as a series of plans that set forth more detailed growth and development policies for specific unincorporated communities. The plan is structured to address issues that are of countywide importance. It consists of nine elements, which are listed below; the date when each element was adopted or last updated is included in parenthesis.

- conservation and open space (1980),
- land use (1980),
- housing (2014),
- transportation (1980),
- water and waste management (1980),
- economic development (1987),
- safety (1990),
- noise (1975), and
- scenic highways (1974).

The County is currently completing an update to its general plan, which has involved comprehensive revisions, amendments, and the creation of additional general plan elements. The 2014 revised draft general plan was published in January 2014. When completed, it will guide development in unincorporated areas of Los Angeles County through 2035 (County of Los Angeles 2014a).

Antelope Valley Area Plan

The Antelope Valley Area Plan, which is also currently being updated, is a component of the *Los Angeles County General Plan 2035*. It provides goals and policies specific to the Antelope Valley, the area where the project is located. The Antelope Valley Area Plan refines the countywide goals and policies of the *Los Angeles County General Plan 2035* by addressing issues relevant to the Antelope Valley and providing more specific guidance (County of Los Angeles 2014b). According to the adopted *Antelope Valley Areawide General Plan*, the planned land uses for the project site are M (Industry) and U-1 (Urban 1) (1.1 to 3.3 dwelling units per acre [du/ac]) (County of Los Angeles 1986). Per the July 2014 *Preliminary Draft Antelope Valley Area Plan*, the planned land use for the project site is IL (Light Industrial) (County of Los Angeles 2014b). Please see Figure 3-8 for the existing general plan land use designations for the project site and surrounding parcels.

Los Angeles County Zoning

Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances implements the goals and policies of the *Los Angeles County General Plan 2035* by regulating permitted uses for land within the unincorporated portions of Los Angeles County. According to the *Los Angeles County Zoning Ordinance* (Ordinance 1494, Chapter 1, Article 1, Sections 100 and 108) (County of Los Angeles 1927), the project site is zoned M-1 (Light Manufacturing) and A-1 (Light Agriculture) (see Figure 3-9, Zoning).

Impact Analysis

Would the project:

a. Physically divide an established community?

Construction

No impact. The proposed project consists of a new library that would be located on a currently vacant lot in the Quartz Hill Business District. The project site is surrounded by a mix of commercial and residential land uses. No changes to surrounding land uses and no changes that would divide the community of Quartz Hill are proposed. All proposed construction activities would occur within the project site, and nearby residential communities would not be divided during construction of the proposed project. Therefore, no impact would occur.

Operation

No impact. As stated above, the proposed project consists of a new library that would be located on a currently vacant lot in the Quartz Hill Business District. The project site is surrounded by a mix of commercial and residential land uses. No changes to surrounding land uses and no changes that would divide the community of Quartz Hill are proposed. All proposed operational activities would occur within the project site, and nearby residential communities would not be divided by operation of the new library. Therefore, no impact would occur.

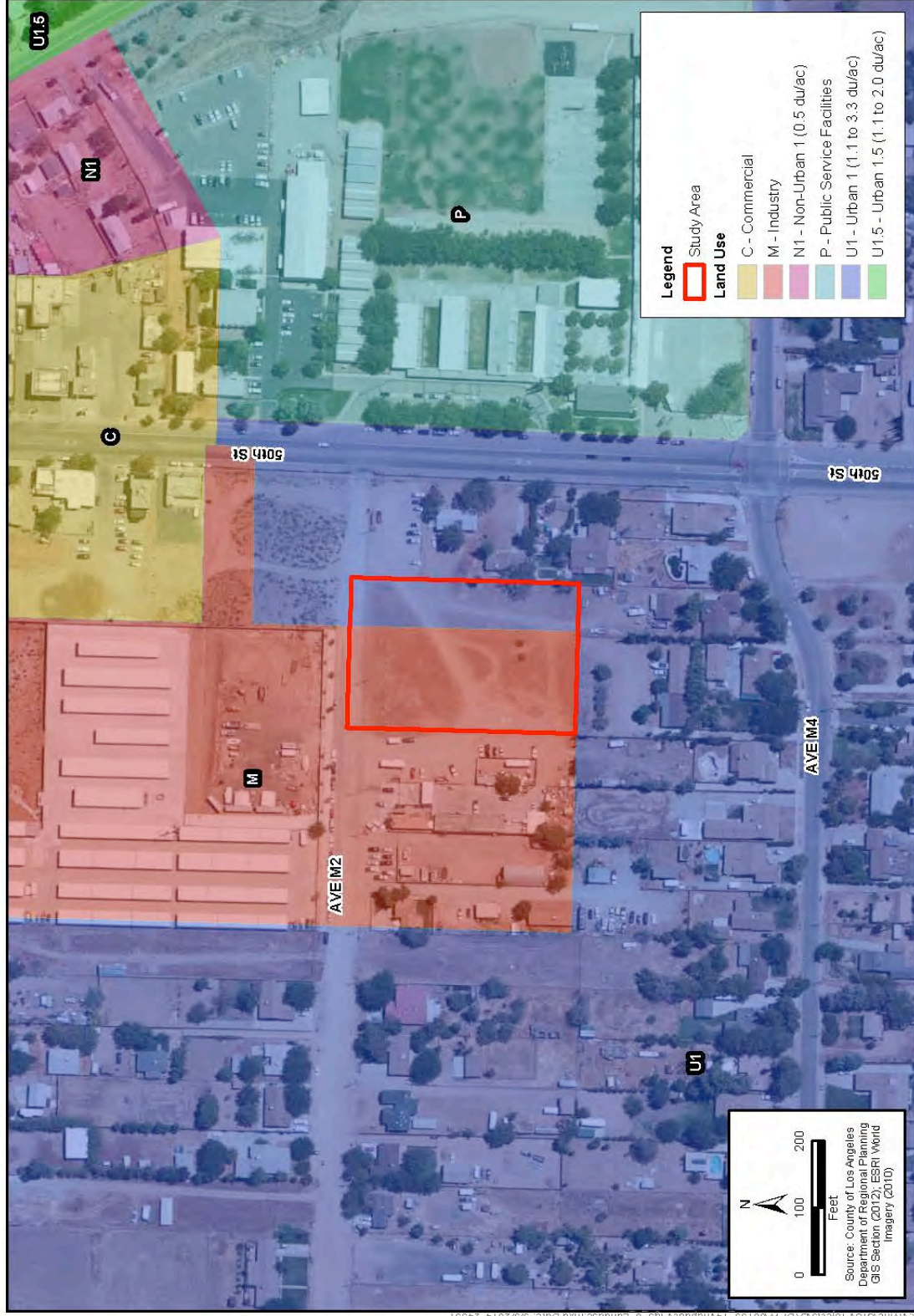


Figure 3-8
Land Use
Los Angeles County Quartz Hill Library

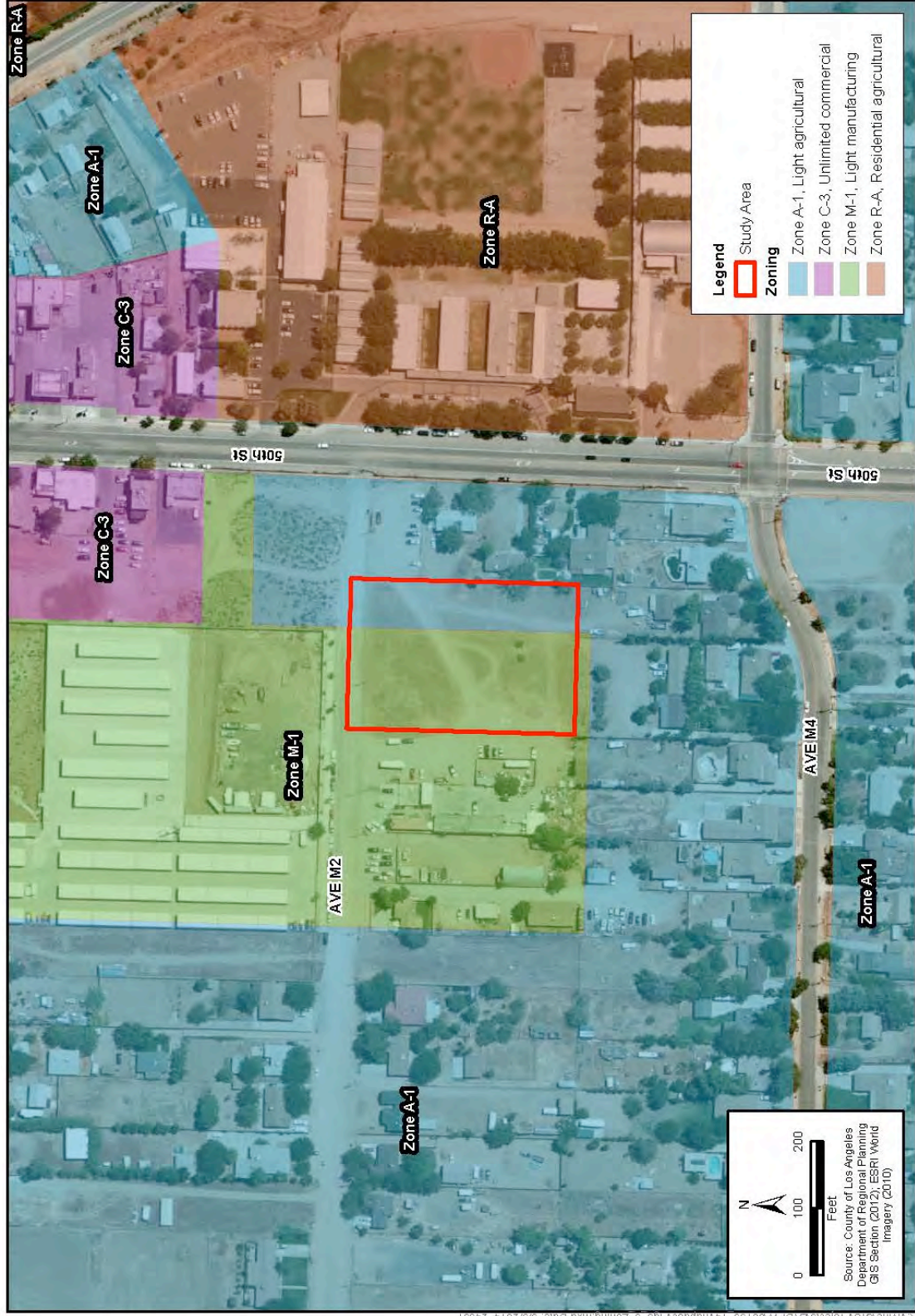


Figure 3-9
Zoning
Los Angeles County Quartz Hill Library

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Construction

No impact. Quartz Hill is located in an unincorporated area of Los Angeles County. As such, the *Los Angeles County General Plan 2035*, the Antelope Valley Area Plan, and Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances are applicable to the project site. Construction of the proposed project would be conducted in compliance with the provisions contained in the Los Angeles County Code of Ordinances. No impact would occur.

Operation

Less-than-significant impact. The proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or minimizing an environmental effect.

The following policies of the existing adopted Antelope Valley Area Plan are applicable to the proposed project:

29. Encourage development of services to meet the needs of Antelope Valley residents, including health, education, welfare, police and fire, governmental operations, recreation, cultural, and utility services. Such services should be expanded at a rate commensurate with population growth. Phasing of their implementation should be timed to prevent gaps in service as the area grows. Where feasible, service facilities will be established in central urban areas, with branches located in outlying communities. When the population base in a community is too small to support a facility, a common facility to be shared by a number of small communities should be established at a central point.
30. Locate public services so that they are easily accessible to the public.
43. Promote and support efforts by public and private agencies and citizen groups to provide the opportunity for a choice of living, working, recreational, and cultural pursuits for all ages, incomes and ethnic groups. This choice should include a variety of housing densities, types, prices, rents, configurations, and sizes; employment opportunities (commerce, manufacturing, sales, professional, etc.); recreational activities (parks, theatres, indoor sports, amusement parks, bike paths, equestrian trails, etc.); and cultural facilities (museums, libraries, schools, etc.).
116. Support the development of libraries in population centers. Encourage the use of bookmobiles to service outlying rural areas.

Per the adopted Antelope Valley Area Plan, a component of the *Los Angeles County General Plan 2035*, the planned land uses for the project site are M (Industry) and U-1 (Urban 1) (1.1 to 3.3 du/ac). The Industry designation provides for the development of light, medium, and heavy industrial uses. The Urban 1 (1.1 to 3.3 du/ac) designation provides for residential uses of up to 3.3 du/ac. Per the July 2014 *Preliminary Draft Antelope Valley Area Plan*, the planned land use for the project site is IL (Light Industrial). Light industrial uses include industrial parks, warehouses, and facilities for distribution, assembly, disassembly, fabricating, finishing, manufacturing, packaging, repairing or processing materials, printing, commercial laundry operations, photographic film processing, vehicle repair, building maintenance, metal work, millwork, and cabinetry work.

The existing, adopted Antelope Valley Area Plan states that

[t]he existing commercial areas and industrial areas in Quartz Hill are recognized in the plan. Future development in these areas should be controlled to blend into the community and support the needs of the community.

The land use designations on the project site provide for industrial, commercial, and residential uses. Operation of a library would result in a less intensive use of the project site than that allowed under the adopted Antelope Valley Area Plan and the 2014 *Preliminary Draft Antelope Valley Area Plan*.

The establishment of a new library in Quartz Hill is consistent with the library system's long-range facility plans and would meet the service needs of the anticipated local population. Therefore, the proposed project would not conflict with the Antelope Valley Area Plan or the *Los Angeles County General Plan 2035*. Impacts would be less than significant.

Per Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances, the zoning designations for the project site are M-1 (Light Manufacturing) and A-1 (Light Agriculture). With the exception of residential and school uses, which are prohibited on land that has been zoned M-1, permitted uses in the M-1 zone include those allowed in either the A-1 zone (Light Agriculture) (e.g., uses related to crops, greenhouses, raising cattle, horses, sheep, goats, poultry, birds, earthworms, etc.) or the C-M zone (Commercial Manufacturing) (e.g., uses related to community and financial services, parks and playgrounds, business and professional offices, commercial services, retail sales of new goods and genuine antiques, rentals, outdoor advertising, tailors, secondhand stores, and limited manufacturing and assembly work). A library is an allowed use on land that has been zoned C-M, and parking is an allowed use on land that has been zoned A-1, provided the site plans are first submitted to, and approved by, the planning director of the Department of Regional Planning of the County of Los Angeles. Pursuant to Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances, the proposed 12,500-square-foot library would be constructed on the portion of the project site that has been zoned M-1, and the parking area would be constructed on the portion of the project site that has been zoned A-1. Therefore, the proposed project would not conflict with Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances. Impacts would be less than significant.

c. *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

Construction

No impact. There is one habitat conservation plan (HCP), natural community conservation plan (NCCP), or other conservation plan in place, and one NCCP/HCP is in the planning stages within the vicinity of the proposed project.

The West Mojave HCP, which applies only to public lands, presents a comprehensive strategy to conserve and protect the desert tortoise, the Mojave ground squirrel, and more than 100 other sensitive plants and animals and their natural communities (Bureau of Land Management 2014). The West Mojave HCP covers 9.3 million acres in San Bernardino, Los Angeles, Kern, and Inyo Counties in the western portion of the Mojave Desert and applies to 3.2 million acres of federally managed public lands. Quartz Hill is located within the West Mojave HCP planning area.

The Desert Renewable Energy Conservation Plan (DRECP) NCCP/HCP is currently in the planning stages. It would apply only to a specific range of covered activities related to compatible renewable energy projects. It is intended to provide protection and conservation for desert ecosystems and

allow for the development of compatible renewable energy projects (California Energy Commission, 2013). The DRECP planning area covers approximately 22.6 million acres of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. Quartz Hill is located within the DRECP planning area (California Energy Commission, 2012).

Because the West Mojave HCP applies only to federally managed public lands and the DRECP NCCP/HCP is still in development and would apply only to a specific range of covered activities related to compatible renewable energy projects, neither plan would be applicable to the proposed project. Therefore, construction of the proposed project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state conservation plan. No impact would occur.

Operation

No impact. As stated above, there are no applicable HCPs or NCCPs in place that would apply to the proposed project. Therefore, operation of the proposed project would not conflict with any applicable HCP or NCCP. No impact would occur.

Mitigation Measures

No potentially significant impacts related to land use would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. Four related projects, located within 1.5 miles of the project site, are considered in the cumulative impacts analysis. These related projects include residential, office, and retail land uses. Related projects and future projects that would be located in Quartz Hill would be reviewed by the County of Los Angeles for consistency with the Antelope Valley Area Plan and compliance with Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances. These plans and ordinances help to ensure that development in Quartz Hill is consistent with surrounding land uses, the general plan, and Title 22 (Planning and Zoning) of the Los Angeles County Code of Ordinances. Any conflicts would be addressed through discretionary actions taken by the County of Los Angeles, as necessary.

As discussed above, the proposed project would not result in any potentially significant impacts related to land use. Development of the proposed project would be consistent with surrounding land uses, applicable plans and ordinances, and community needs. As a result, cumulative land use impacts from the proposed project and related projects would be less than significant.

XI. Mineral Resources	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

In 1975, the Department of Conservation’s California Geological Survey created a program to assist in the protection and development of mineral resources through the land use planning process. This program is mandated by the Surface Mining Reclamation Act of 1975 (SMARA). Local agencies are required to use mineral land classification maps and reports when developing land use plans and when making land use decisions (California Geological Survey 2013).

SMARA requires that the State Mining and Geology Board map areas throughout the State of California that contain regionally significant mineral resources. Aggregate mineral resources within the state are classified by the board through application of the Mineral Resource Zone (MRZ) system. The MRZ system is used to map all mineral commodities within identified jurisdictional boundaries. The MRZ system classifies lands that contain mineral deposits and identifies the presence or absence of substantial sand and gravel deposits and crushed rock source areas (i.e., commodities used as, or in the production of, construction materials). The State Geologist classifies MRZs within a region based on the following factors:

1. MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
2. MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
3. MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.
4. MRZ-4: Areas where available information is inadequate for assignment of any other MRZ category.

According to the California Department of Conservation’s Division of Mines and Geology, the project site is not located within an MRZ-2 zone, which indicates the inclusion of known mineral deposits (Miller 1994). The project site is located in an MRZ-3 zone, which indicates that significance cannot be determined from available data (Miller 1994). Similarly, the Division of Oil, Gas, & Geothermal Resources did not identify any existing oil wells within the vicinity of the project site (Department of Conservation 2014).

Impact Analysis

Would the project:

- a. ***Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?***

Construction

Less than significant impact. Construction of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. The proposed project is not located within a MRZ-2 zone. The project site is located in MRZ-3 and, thus, the significance of any potentially present mineral resources cannot be determined due to limited data. However, construction of the project would not preclude the ability to explore for resources at some future date, which could still occur, if desired, and would be allowed by current regulations. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. The impacts would be less than significant.

Operation

Less than significant impact. For the same reasons discussed for construction, operation of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. The impacts would be less than significant.

- b. ***Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?***

Construction

No impact. The proposed project is not located within a locally important mineral resource discovery zone (Miller 1994). Thus, construction of the proposed project would not result in the loss of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

Operation

No impact. For the same reasons discussed for construction, operation of the proposed project would not result in the loss of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

Mitigation Measures

No potentially significant impacts related to mineral resources would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the site and their potential to affect resources similar to those that would be affected by the proposed project. There are four related projects within this area, including single-family housing, retail development, a carwash, an automotive service station (no gas), and an office for a public utility service center. The proposed project would not affect mineral resources. Therefore, it would not contribute to a significant cumulative impact.

XII. Noise	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Existing Noise Environment

The project site is bounded on the north by Avenue M-2, beyond which lie vacant lots and a storage facility; on the east by single-family residences (with residential buildings located approximately 15 to 20 feet from the project site) and the Quartz Hill Grange Hall; on the south by single-family residences (with residential buildings located approximately 120 to 140 feet from the project site); and on the west by an automotive body shop. Approximately 230 feet east of the project site, across 50th Street West, is Quartz Hill Elementary School. The homes and the elementary school are the noise-sensitive receptors closest to the project site.

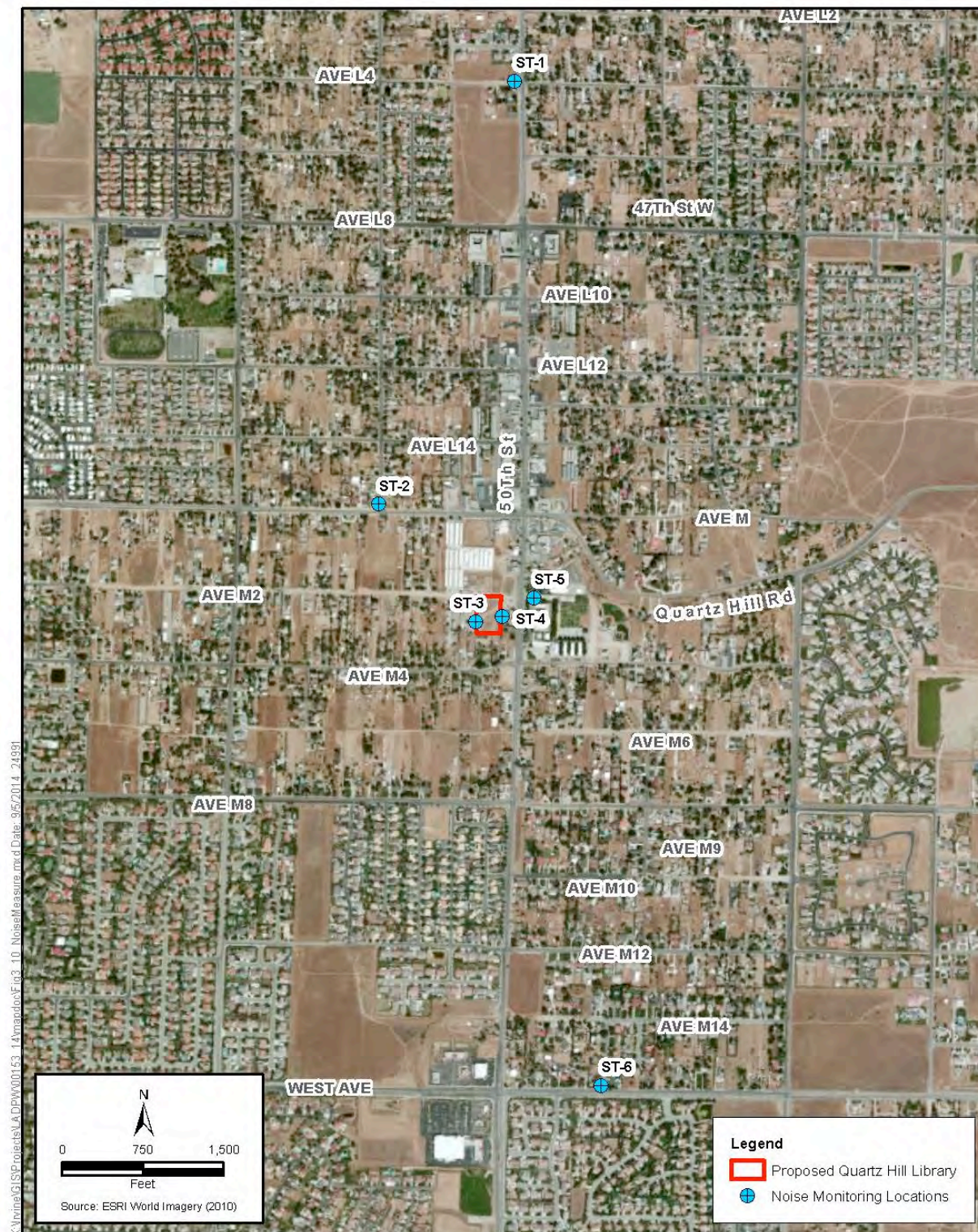
The primary source of noise in the project vicinity is the traffic on the surrounding streets. Secondary sources of noise include operations at commercial and industrial properties in the area, occasional aircraft overflights, activities at the nearby Quartz Hill Elementary School, and day-to-day neighborhood noise from air conditioners, landscaping activities, and barking dogs.

Noise Monitoring

To document the existing noise environment, short-term (ST) measurements were obtained at six locations in the study area (see Figure 3-10) on August 18, 2014. These locations were selected to represent noise-sensitive receptors in the immediate vicinity of the project site or adjacent to roadways that would be affected by project traffic, and to document noise levels at the project site itself. Additional details and a summary of the measurement results are provided in Table 3-12. Each measurement was conducted over a period of approximately 15 minutes.

Table 3-12. Summary of Noise Measurements

Location Number, Description (date, time)	Measured Noise Levels, dBA							
	L _{eq}	L _{max}	L _{min}	L ₂	L ₈	L ₂₅	L ₅₀	L ₉₀
ST-1: Adjacent to single-family residence at 42603 50 th Street West (8/18/2014, 1:20 p.m.–1:36 p.m.)	62.4	73.3	42.1	68.1	66.3	64.1	61.0	50.8
ST-2: Adjacent to single-family residence at 5205 Columbia Way (8/18/2014, 1:57 p.m.–2:15 p.m.)	65.8	83.1	49.4	71.2	69.3	67.1	64.2	56.0
ST-3: On west property line of project site, adjacent to neighboring body shop (8/18/2014, 12:05 p.m.–12:20 p.m.)	51.3	60.7	48.8	54.8	52.3	51.5	50.8	50.0
ST-4: Adjacent to 41837 50 th Street West, at setback of closest residential structure to project site (8/18/2014, 11:24 a.m.–11:50 a.m.)	54.7	62.0	50.9	57.7	56.5	55.3	54.7	52.1
ST-5: Quartz Hill Elementary School, at setback of classroom buildings from 50 th Street West (8/18/2014, 12:46 p.m.–1:01 p.m.)	57.4	67.3	51.8	64.1	60.5	58.0	55.8	53.1
ST-6: Adjacent to single-family residence at 41201 Medway Avenue (8/18/2014, 2:37 p.m.–2:54 p.m.)	64.8	75.2	46.8	71.6	69.3	66.6	61.3	52.1
Source: ICF International, 2014. Notes: ST= short-term; dBA = A-weighted sound level, the sound pressure level in decibels as measured using the A weighting filter network, which de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear; L _{eq} = equivalent sound level, the average of the sound energy occurring over the measurement period; L _{max} = maximum sound level; L _{min} = minimum sound level; L _{xx} = percentile-exceeded sound level, the sound level exceeded for a given percentage of a specified period (e.g., L ₂ is the sound level exceeded 2% of the time, and L ₈ is the sound level exceeded 8% of the time).								



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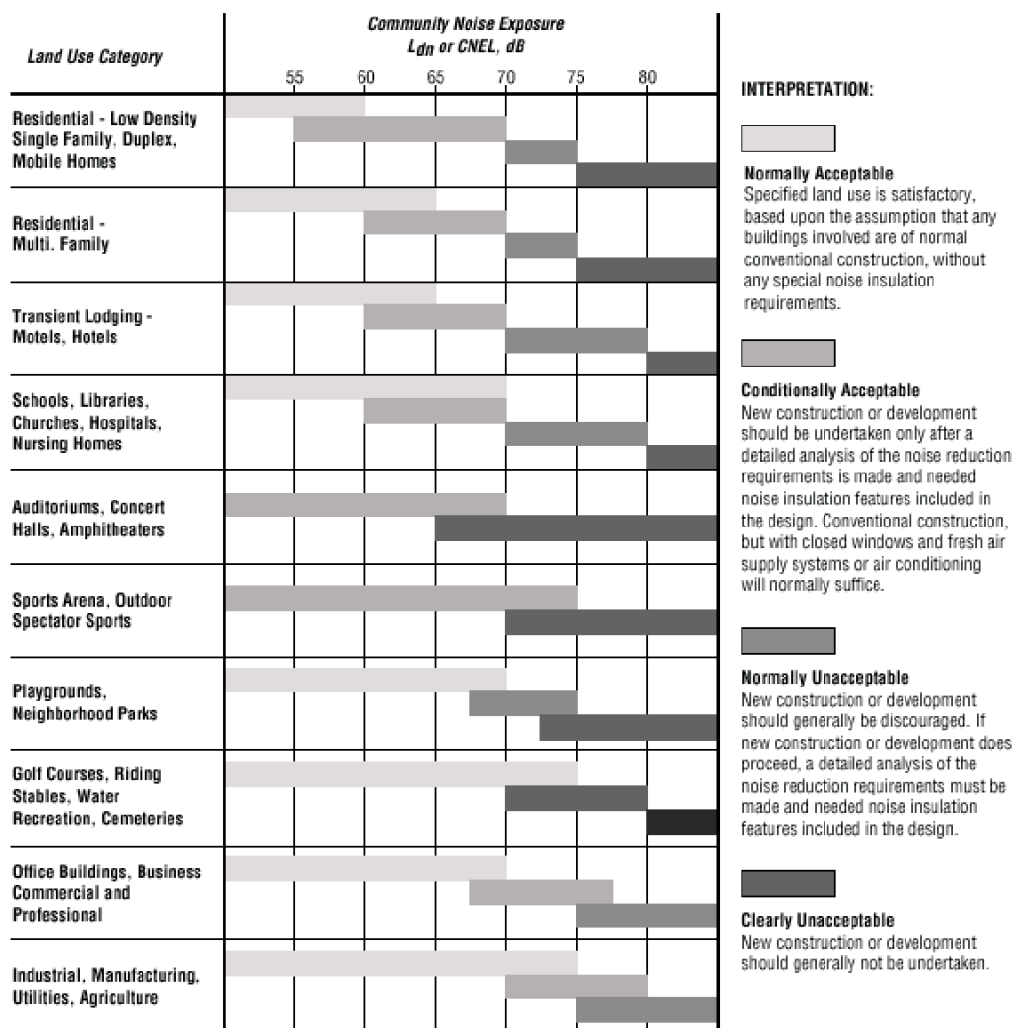


Figure 3-10
Noise Monitoring Locations
Los Angeles County Quartz Hill Library

Regulatory Setting

State of California General Plan Guidelines

Appendix C to the State of California's *Guidelines for the Preparation and Content of the Noise Element of the General Plan* includes a noise/land use compatibility matrix that provides guidance regarding acceptable exterior community noise levels for various land uses, as illustrated in the graphic that follows below.



Source: State of California. 2003. *Guidelines for the Preparation and Content of the Noise Element of the General Plan*. Appendix C, Figure 2.

Because the County of Los Angeles General Plan does not provide quantitative standards or guidelines that could be used as thresholds for assessing potential noise impacts associated with project-generated traffic, the state guidelines summarized above are useful in establishing thresholds for noise-sensitive receptors such as residences, hotels/motels, schools, libraries, churches, hospitals, and nursing homes, which are all conditionally acceptable within areas having a noise exposure of up to 70 decibel (dB) Community Noise Equivalent Level (CNEL). Therefore, the

70 dB CNEL is considered an appropriate threshold for assessing traffic noise impacts at noise-sensitive receptors. As noted later in this section, the only sensitive receptors affected by such noise levels are residential properties.

California Green Building Standards Code

Section 5.507 of the California Green Building Standards Code identifies mandatory exterior-to-interior noise control standards for non-residential construction. These apply to buildings that are located within the 65 dB CNEL noise contour of an airport, freeway, expressway, railroad, industrial source, or fixed-guideway source, as determined by the noise element of the general plan. As noted later in this section, the proposed project is not expected to be located within the 65 dB CNEL contour of any noise source, so this standard would not apply to the proposed project.

Los Angeles County Code

Exterior noise standards for community noise (i.e., noise generated on one property and propagating to another) are provided in Section 12.08.390 of the Los Angeles County code. The noise limits depend on a number of factors, including the noise zone of the receptor, the time of day, and the duration of the noise. The standards are summarized in Table 3-13, below.

Table 3-13. County of Los Angeles Exterior Noise Standards

Noise Zone Land Use of Receptor Property	Time of Day	Noise Level (dBA) that May Not Be Exceeded for More than...				
		30 min/ hour (L ₅₀)	15 min/ hour (L ₂₅)	5 min/ hour (L _{8.3})	1 min/ hour (L _{1.7})	Anytime (L _{max})
Noise Zone I— Noise-sensitive areas	Anytime	45	50	55	60	65
Noise Zone II— Residential properties	7 a.m. to 10 p.m. (daytime)	50	55	60	65	70
	10 p.m. to 7 a.m. (nighttime)	45	50	55	60	65
Noise Zone III— Commercial properties	7 a.m. to 10 p.m. (daytime)	60	65	70	75	80
	10 p.m. to 7 a.m. (nighttime)	55	60	65	70	75
Noise Zone IV— Industrial properties	Anytime	70	75	80	85	90

- Notes:
1. In the event that the corresponding ambient noise level (L₅₀, L₂₅, etc.) exceeds the specified standard, then the ambient noise level becomes the noise standard.
 2. If the measurement location is on a boundary property between two different zones, the exterior noise standard will be the arithmetic mean of the standards of the two subject zones.
 3. For any source of sound that emits a pure tone or impulsive noise, the noise standards will be reduced by 5 dB.
 4. dBA = A-weighted sound level; L_{xx} = percentile-exceeded sound level; L_{max} = maximum sound level.

The library would be considered a commercial land use, the homes to the east and south would be considered residential land uses, and the auto body shop to the west would be considered an industrial land use. As noted in Table 3-13, above, if the measurement location is on a boundary property between two different zones, the exterior noise standard is the arithmetic mean of the standards of the two subject zones. Therefore, the relevant noise standards (that would represent the threshold of impact) for operational noise propagating from the library site to adjacent homes would be based on the arithmetic mean of the commercial and residential standards. The relevant noise standards (threshold of impact) for operational noise propagating onto the library site from the adjacent body shop would be based on the arithmetic mean of the commercial and industrial standards. These standards would apply anywhere on the affected property.

Construction noise is addressed in Section 12.08.440 of the code, which places limits both on the permitted hours of construction activities and on the maximum noise levels that may affect nearby properties. Construction activities are not permitted during the evening/nighttime hours of 7 p.m. to 7 a.m. or at any time on Sundays or holidays, where they would create a noise disturbance across a residential or commercial real property line.

The permitted maximum noise levels depend on the duration of use for each piece of construction equipment and the land use(s) in the area. "Mobile Equipment" noise standards govern noise levels from equipment that operates on-site for less than 10 days, and "Stationary Equipment" noise standards govern noise levels from equipment that operates on-site for 10 days or more. Scheduling information for the project indicates that construction will last a total of 13 months, with overlapping phases, each lasting between 6 and 30 weeks; therefore, it is anticipated that most, if not all, of the equipment used will be on-site for at least 10 days, and the "Stationary Equipment" noise standards would provide the appropriate thresholds of significance. Because the project site is in an area with a mix of residential, commercial, and industrial properties, the relevant land use designation is "Semi-residential/Commercial" and the resulting noise limit would be 70 dBA L_{max} (maximum noise level). This standard would apply at the façade of any residential building.

The municipal code also requires that all mobile or stationary internal combustion engine-powered equipment or machinery must be equipped with suitable exhaust and air-intake silencers in proper working order.

Section 12.08.560 of the County's municipal code provides a regulatory threshold for groundborne vibration of 0.01 inch per second (over the range of 1 to 100 Hertz), which is considered to be the threshold of perception. This threshold applies at or beyond the property line (if the source of the vibration is located on private property) or at 150 feet from the source (if the source of the vibration is located on a public space or public right-of-way).

County of Los Angeles General Plan

The Noise Element of the County's general plan provides a number of policies related to community noise but does not provide any quantitative standards for regulating noise levels.

Impact Analysis

Would the project:

- a. *Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?*

Less-than-significant impact with mitigation incorporated. Without mitigation, construction activities would expose nearby noise-sensitive receptors to noise levels in excess of the County's construction noise standards. However, with implementation of recommended mitigation measure MM-NOI-1, the impact would be reduced to a level of less than significant. Without mitigation, noise from operational activities would exceed the applicable standards of the Los Angeles County Code. However, with implementation of recommended mitigation measures MM-NOI-2 and MM-NOI-3, the impacts would be reduced to a level of less than significant. Detailed analyses for both project construction and operation are provided below.

Construction

Less-than-significant impact with mitigation incorporated. Two types of short-term noise impacts could occur during construction of the proposed project. First, construction workers who would commute to the site and trucks that would transport equipment and materials would incrementally increase noise levels on access roads. Although there would be a relatively high single-event noise level, which could cause an intermittent noise nuisance (e.g., passing trucks at 50 feet would generate up to 81 dBA), the effect on longer term ambient noise levels (e.g., the daily average noise levels considered in the state's general plan guidelines) would be small. Therefore, short-term construction-related impacts associated with commuting workers and transporting equipment to the project site would be less than significant.

The second type of short-term noise impact would be related to noise generated during excavation, grading, and building erection on the project site. Construction would take place between the hours of 7 a.m. and 5 p.m. Monday through Friday and is anticipated to start in July 2015 and last for 13 months, including 11 months for construction and 2 months for installing fixtures, furniture, and equipment. In accordance with the Los Angeles County Code, all internal combustion engine-powered equipment and machinery would be equipped with suitable exhaust and air-intake silencers that would be in proper working order.

Project construction would be broken down into overlapping phases. The construction phases, anticipated construction equipment, and associated reference noise levels are summarized in Table 3-14.

Construction-related noise was analyzed using the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM), which predicts maximum noise levels at nearby receptors by analyzing the type of equipment, the distance from source to receptor, and the presence, or absence, of intervening shielding between source and receptor. The source-to-receptor distances used in the RCNM reflect the closest distance between each sensitive receptor and the construction equipment that would be used during each phase. Therefore, phases that would occur across the whole site would have shorter source-to-receptor distances than phases that would be associated with only the library structure itself (which would be farther away from noise-sensitive residences). It is noted that, per the Los Angeles County Municipal Code, a sensitive receptor for construction noise is considered to be the façade of a residential building.

Table 3-14. Construction Phasing and Equipment Noise Levels

Construction Phase	Equipment	Maximum Noise Level (L_{max}) at 50 feet (dBA)¹
Grading, foundations, and slab-on-grade	Scraper	84
	Compactor	83
	Grader	85
	Concrete truck	81
	Transporter	74
On- and off-site utilities and improvements	Backhoe	78
	Compactor	83
	Grader	85
	Concrete truck	81
	Paver	77
Structure and framing	Delivery truck	74
	Crane	81
	Welder	74
Rough-ins, exterior skin, and roofing	Forklift	79
	Delivery truck	74
	Trash truck	77
	Plaster applicator	78
Interior finishes	Delivery truck	74
	Trash truck	77
Exterior hardscape and landscape	Concrete trucks	81
	Delivery trucks	74
	Trencher	81
	Backhoe	78
Fixtures, furnishings, and equipment	Delivery truck	74
¹ L _{max} = maximum sound level; dBA = A-weighted sound level. Obtained or estimated from the Federal Highway Administration's Roadway Construction Noise Model.		

Table 3-15 shows the predicted noise levels by phase at the noise-sensitive receptors that surround the project site. Figure 3-11 shows the locations of the noise-sensitive receptors in relation to the project site.

Table 3-15. Construction Noise Levels by Phase at Sensitive Receptors

Construction Phase	Sensitive Receptor 1, dBA L_{max} (distance, in feet)	Sensitive Receptor 2, dBA L_{max} (distance, in feet)	Sensitive Receptor 3, dBA L_{max} (distance, in feet)	Sensitive Receptor 4, dBA L_{max} (distance, in feet)
Grading, foundations, and slab-on-grade	89 (30)	87 (40)	77 (130)	76 (150)
On- and off-site utilities/improvements	85 (50)	80 (90)	73 (200)	72 (220)
Structure and framing	72 (140)	69 (180)	68 (220)	68 (220)
Rough-ins, exterior skin, and roofing	70 (140)	68 (180)	66 (220)	66 (220)
Interior finishes	68 (140)	65 (180)	64 (220)	64 (220)
Exterior hardscape and landscape	86 (30)	83 (40)	73 (130)	72 (150)
Fixtures, furnishings, and equipment	65 (140)	63 (180)	61 (220)	61 (220)
Notes: L _{max} = maximum sound level; dBA = A-weighted sound level.				

As noted previously, the applicable threshold of significance, based on the County's construction noise standards, is 70 dBA L_{max} at the adjacent residential buildings. Referring to Table 3-15, the following phases are predicted to comply with this noise standard: rough-ins, exterior skin, and roofing; interior finishes; and, fixtures, furnishings, and equipment.

The following phases are predicted to exceed the standard of 70 dBA L_{max}: grading, foundations, and slab-on-grade; on- and off-site utilities and improvements; structure and framing; and, exterior hardscape and landscape. These exceedances of the County's noise standards would be significant impacts; however, with the implementation of the construction noise control measures provided in MM-NOI-1, impacts would be reduced to less than significant.

Referring to the figure provided in Appendix E (*Estimated Mitigated Noise Levels at Nearby Sensitive Receptors Due to Project Construction*), implementation of MM-NOI-1 is anticipated to reduce construction noise levels by 11 to 19 dB at the closest homes, resulting in worst-case noise levels of 65 to 70 dBA L_{max}, which would be in compliance with the County's construction noise threshold of 70 dBA L_{max}.

Operation

Less-than-significant impact with mitigation incorporated. Project operational noise sources would include the additional traffic on the surrounding streets and on-site noise sources such as mechanical equipment, parking lot activities, and activities at the proposed outdoor learning spaces. Off-site noise sources that could affect the proposed library are traffic on nearby streets and operations at the adjacent industrial property (i.e., the automotive body shop). Each of these noise sources is discussed in the following sections.



Figure 3-11
Noise-Sensitive Receptor Locations
Los Angeles County Quartz Hill Library



Traffic

Traffic noise was analyzed along ten roadway segments in the project vicinity that would serve vehicular traffic traveling to and from the proposed library. To quantify the effects of the proposed project, traffic noise was analyzed using four different scenarios: (1) existing, (2) existing with project, (3) opening year without project, and (4) opening year with project. The analysis was conducted using a proprietary traffic noise model, with calculations based on data from the FHWA Traffic Noise Model, Version 2.5, Look-Up Tables (FHWA 2008). The inputs used in the traffic noise modeling included average daily traffic (ADT) volumes provided by the project traffic engineer (see the Transportation Impact Study in Appendix F); traffic speeds, based on the posted speed limits; and traffic mix (the percentage of automobiles versus medium trucks and heavy trucks), based on published data for typical roadways (County of Riverside 2012). The results are summarized in Table 3-16.

Table 3-16. Estimated Traffic Noise Levels

Roadway/Segment	Estimated Unmitigated Traffic Noise Levels at 50 feet from Roadway Centerline (dB CNEL)					
	Existing	Existing with Project	Increase over Existing	Opening Year without Project	Opening Year with Project	Increase over Opening Year without Project
50th Street West						
North of W Avenue L-8	64.7	65.0	0.3	64.8	65.1	0.3
W Avenue L-8 to Columbia Way	65.7	65.9	0.2	65.8	66.0	0.2
Columbia Way to W Avenue M-4	65.7	65.9	0.2	65.8	66.0	0.2
W Avenue M-4 to W Avenue M-8	64.7	64.9	0.2	64.8	65.1	0.2
W Avenue M-8 to W Avenue N	68.3	68.4	0.2	68.4	68.5	0.2
South of W Avenue N	71.7	71.8	0.1	71.7	71.8	0.1
Columbia Way						
West of 50 th Street W	64.6	64.7	0.1	64.7	64.8	0.1
West Avenue M-8						
West of 50 th Street W	63.3	63.4	0.1	63.4	63.6	0.1
West Avenue N						
West of 50 th Street W	71.9	71.9	0.0	71.9	71.9	0.0
East of 50 th Street W	69.7	69.7	0.0	69.7	69.7	0.0
Source: ICF International, 2014.						
Notes: CNEL = community noise equivalent level, the average A-weighted noise level during a 24-hour day, which is obtained by adding 5 dB to sound levels in the evening (7 p.m. to 10 p.m.) and 10 dB to sound levels in the nighttime (10 p.m. and 7 a.m.)						

As noted previously, the County of Los Angeles does not provide quantitative standards or guidelines for noise due to traffic. However, a threshold of 70 dB CNEL for noise-sensitive receptors (residences, schools, etc.) has been established based on the state's general plan guidelines.

Referring to Table 3-16, existing noise-sensitive receptors (i.e., residential properties) adjacent to 50th Street West south of West Avenue N and West Avenue N west of 50th Street W may be exposed to unmitigated traffic noise levels in excess of 70 dB CNEL under both existing with-project and opening-year with-project conditions. However, these potential impacts are considered to be less than significant for the following reasons:

- The vast majority of the properties are shielded from the traffic noise by existing noise barriers (e.g., block walls), measuring approximately 5 to 6 feet high. Where these walls exist, they reduce noise levels by approximately 5 dB; therefore, noise levels would be below 70 dB CNEL in rear yards and at first-floor building façades under both existing with-project and opening-year with-project conditions.
- These noise levels exist under current conditions and would continue to exist in the future, with or without construction of the project. That is to say that the project would not cause any new exceedances of the guidelines. In fact, the project would increase noise levels adjacent to surrounding roadways by a maximum of only 0.3 dB under both existing with-project and opening-year with-project conditions, which is an imperceptible increase to the human ear.

At the project site itself, the traffic noise level from the nearest major street (50th Street West) would be approximately 60 dB CNEL under both existing with-project and opening-year with-project conditions (see Appendix E). Traffic noise from West Avenue M-2 is estimated to be less than 60 dB CNEL at the proposed library because of the very low traffic volume on the street, which is not a through street and serves only a small number of properties (fewer than 30), most of which are residential. Therefore, traffic noise impacts at the project site would be less than significant under both existing and opening-year conditions.

On-site Operations

The primary on-site noise sources at the project site would be parking lot activities, mechanical equipment, and activities at the proposed outdoor learning spaces. To analyze the noise levels from these sources, a three-dimensional computer noise model was developed using SoundPLAN software. The geometry for the model was based on the project plans and publicly available aerial photography. The modeling takes into account many important variables, including the sound power of each source, the heights of the noise sources and receptors, the distance to noise-sensitive receptors, site topography, and barrier effects provided by walls and buildings. It is noted that, per the Los Angeles County Code, a “sensitive receptor” is considered to be any location on a residential property. Additional details regarding the assumptions used in the modeling, along with a noise contour map illustrating the noise model and the full results, are provided in Appendix E. The results are summarized in Table 3-17.

Table 3-17. Operational Noise Levels at Sensitive Receptors

Construction Phase	Sensitive Receptor 1 (dBA)	Sensitive Receptor 2 (dBA)	Sensitive Receptor 3 (dBA)	Sensitive Receptor 4 (dBA)
Parking lot	57	57	56	57
Rooftop HVAC equipment	47	46	46	46
Outdoor activities	49	47	46	46
<i>Combined noise level</i>	<i>58</i>	<i>57</i>	<i>57</i>	<i>57</i>
Note: dBA = A-weighted sound level ; HVAC = heating, ventilation, and air conditioning				

The noise levels provided in Table 3-17 are the average noise levels that would most closely correlate with the L_{50} noise descriptor used in the Los Angeles County Code standards (i.e., the noise level that may not be exceeded for more than 30 minutes per hour). As discussed previously, the applicable daytime noise standard would be the arithmetic average of the Noise Zone II (residential) and Noise Zone III (commercial) noise limits. These are 50 and 60 dBA, respectively, resulting in an average of 55 dBA L_{50} . Referring to Table 3-17, the operational L_{50} noise levels are estimated to range from 57 to 58 dBA at sensitive receptors 1 through 4. This would exceed the standard of 55 dBA. These would be significant impacts; however, with the implementation of the HVAC noise control measures and property line block wall recommended in MM-NOI-2 and MM-NOI-3, impacts would be reduced to less than significant.

The anticipated operational noise levels after implementation of MM-NOI-2 and MM-NOI-3 are provided in Table 3-18, which shows noise levels of 52 to 54 dBA at the closest residential properties. This represents a noise reduction of 4 to 5 dBA and indicates that the project would be in compliance with the County's noise threshold of 55 dBA L_{50} .

Table 3-18. Mitigated Operational Noise Levels at Sensitive Receptors

Construction Phase	Sensitive Receptor 1 (dBA)	Sensitive Receptor 2 (dBA)	Sensitive Receptor 3 (dBA)	Sensitive Receptor 4 (dBA)
Parking lot	53	50	50	50
Rooftop HVAC equipment	46	46	45	45
Outdoor activities	45	44	43	43
<i>Combined noise level</i>	<i>54</i>	<i>52</i>	<i>52</i>	<i>52</i>
Note: dBA = A-weighted sound level; HVAC = heating, ventilation, and air conditioning				

The proposed library would be subject to noise from the neighboring automotive body shop located to the west. Short-term noise measurement ST-3 was conducted at the west property line of the project site. This measured noise from body shop operations (e.g., a radio playing, tools being used inside and outside of the building, people shouting). As discussed previously, the applicable daytime noise standards would be the arithmetic average of the Noise Zone III (commercial) and Noise Zone IV (industrial) noise limits. Because body shop activities frequently emit impact noise (e.g., from impacts tools such as hammers or riveters), the standards are reduced by 5 dB. Table 3-19 compares the measured noise levels at ST-3 (refer to Table 3-12) with the applicable noise standards. Although sporadic noise from the body shop may occasionally cause annoyance at the proposed library, the measured noise levels would be well below the applicable County noise standards. Therefore, the impact would be less than significant.

Table 3-19. Comparison of Body Shop Noise Levels with Applicable Exterior Noise Standards

Time of Day	Noise Level (dBA) that May Not Be Exceeded for More than...				
	L_{50}	L_{25}	L_8	L_2	L_{max}
Applicable daytime noise standard (arithmetic average of Noise Zone III and Noise Zone IV noise limits, minus 5 dB for impact noise)	60	65	70	75	80
Measured body shop noise levels	50.8	51.5	52.3	54.8	60.7

Mitigation Measures

The following measures are proposed to mitigate the construction and operational impacts identified above. MM-NOI-1 is provided to mitigate construction noise levels to less than significant at the adjacent residential buildings, which are the impacted sensitive receptors.

MM-NOI-1: The construction contractor shall comply with the County's noise threshold of 70 dBA L_{max} defined by the County's municipal code. The construction contractor shall design mitigation to attenuate noise levels, which would include but not be limited to:

- Prior to the start of any construction activity on the project site, a temporary noise barrier shall be erected along portions of the east, south, and west property lines of the project site, as described below. The barrier shall remain in place until all exterior construction activity is completed.
 - The minimum length of the barrier shall be as illustrated in Figure 3-12.
 - The barrier shall be at least 14 feet high where it occurs along the west and south property lines and at least 20 feet high where it occurs along the east property line. All heights are relative to the ground elevation at the property line.
 - The barrier shall be constructed from acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum sound transmission class rating of 28 and a minimum noise reduction coefficient of 0.80 and be firmly secured to the framework, with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 4 inches at seams and taped and/or closed with hook-and-loop fasteners (i.e., Velcro®) so that no gaps exist. The largest blankets available should be used to minimize the number of seams. The blankets shall be draped to the ground to eliminate any gaps at the base of the barrier.
- Construction activities shall be limited to between 7 a.m. and 7 p.m. Monday through Friday and shall not occur at any time on weekends or legal holidays. Construction personnel shall not be permitted on the job site, and material or equipment deliveries and collections shall not be permitted outside of these hours.
- All mobile and fixed noise-producing equipment used on the project site that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity.
- All construction equipment shall be properly maintained. (Poor maintenance of equipment typically causes excessive noise levels.)
- All construction equipment, stationary and mobile, shall be equipped with properly operating and maintained mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specification.
- All noisy equipment shall be operated only when necessary and shall be switched off when not in use.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- Construction employees shall be trained in the proper operation and use of the equipment. (Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.)



Figure 3-12
Location and Height of Temporary Construction Noise Barrier per MM-NOI-1
Los Angeles County Quartz Hill Library

- Storage, staging, parking, and maintenance areas on the project site shall be located as far away as possible from noise-sensitive receptors.
- Stationary noise sources, such as generators and compressors, on the project site shall be positioned as far away as possible from noise-sensitive receptors.
- The quietest type of construction equipment available shall be used whenever possible. (Newer equipment is generally quieter than older equipment. Electrically powered equipment is typically quieter than diesel- or gasoline-powered equipment, and hydraulically powered equipment is typically quieter than pneumatic equipment.)
- Construction equipment shall be stored on the project site while in use whenever possible. This will eliminate noise associated with repeated transportation of the equipment to and from the site.
- Haul roads shall not be designated through noise-sensitive areas whenever possible.

MM-NOI-2 and MM-NOI-3 are provided to mitigate noise from on-site project operations to less than significant at the adjacent residential properties.

MM-NOI-2: The project HVAC system shall be designed to ensure that rooftop HVAC equipment complies with Section 12.08.390 of the Los Angeles County Code. During the architectural and engineering design phases of the project, and prior to the issuance of any building permits for the library building, a County-approved acoustical consultant shall be retained by the contractor to evaluate the rooftop HVAC equipment and provide recommendations, as necessary, to ensure that the associated 1-hour noise levels would not exceed 55 dBA L₅₀ during the daytime (7 a.m. to 10 p.m.) or 50 dBA L₅₀ during the nighttime (10 p.m. to 7 a.m.), as measured at any neighboring residential property. Such recommendations may include, but are not limited to, the selection of quieter rooftop units, changes in unit locations, changes to rooftop parapet walls, and acoustical louvers or screens.

MM-NOI-3: A permanent noise barrier shall be constructed between the project site and the adjacent residential properties. A 6-foot-high (minimum) block wall shall be constructed at the south and east property line of the project site, adjacent to the neighboring residential properties, as illustrated in Figure 3-13.

b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Less-than-significant impact. Groundborne vibration generated by construction activities would be below the threshold established by the Los Angeles County Code; additional analysis is provided below. Proposed operation of the library does not include any activities or equipment that would be expected to generate perceptible groundborne vibration levels; therefore, no impacts would occur as a result of project operations, and this impact has not been analyzed quantitatively.

Construction

Less-than-significant impact. Heavy construction equipment has the potential to produce groundborne vibration levels that would be perceptible to people in the surrounding area. The Los Angeles County Code identifies a groundborne peak particle velocity (PPV) vibration standard of 0.01 inch per second. Because the library would be a public space, the standard would apply at a distance of 150 feet from the equipment that would generate the vibration.



Figure 3-13
Location and Height of Block Wall per MM-NOI-3
Los Angeles County Quartz Hill Library



Referring to the equipment schedule provided above in Table 3-14, various pieces of heavy equipment, such as graders and backhoes, would be used at the project site. According to data published by the Federal Transit Administration (FTA), this type of equipment typically produces PPV vibration levels of 0.089 inch per second at a distance of 25 feet (FTA 2006).

Vibration levels from construction equipment attenuate as they radiate from the source. The equation to determine vibration levels at a specific distance states that

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$$

where PPV_{ref} is the PPV at a reference distance of 25 feet, and D is the distance from the equipment to the sensitive receptor (FTA 2006). Using this equation, the estimated PPV at 150 feet from the construction equipment would be 0.006 inch per second, which is below the County's standard of 0.01 inch per second. Therefore, the impact would be less than significant.

Operation

No impact. Proposed operation of the library would not include any activities or equipment that would be expected to generate perceptible groundborne vibration levels; therefore, no impacts would occur as a result of project operation.

- c. ***Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?***

Less-than-significant impact with mitigation incorporated. Without mitigation, noise levels from on-site project activities would cause noticeable noise-level increases at adjacent residential properties and result in noise levels that would exceed the Los Angeles County Code standards as discussed under XII.a, above. However, with implementation of recommended mitigation measure MM-NOI-2, these impacts would be reduced to a level of less than significant. Noise increases on streets in the study area due to project-generated traffic would be very small (less than 1 dB) and less than significant. Additional discussion and analysis are provided below.

Construction

No impact. Construction noise would be temporary and limited to the period of construction activities. Therefore, no substantial permanent increases in ambient noise levels would occur as a result of construction activities. There would be no impact.

Operation

Less-than-significant impact with mitigation incorporated.

Traffic Noise

As noted previously, four traffic scenarios were analyzed, as summarized in Table 3-16, above. Referring to the table, project-generated traffic is expected to increase noise levels from streets within the study area by 0.3 dB or less, which would be imperceptible to the human ear and considered less than significant.

On-site Operations

The primary on-site noise sources at the project site would be parking lot activities, mechanical equipment, and activities at the proposed outdoor learning spaces, which were analyzed previously. To quantify the noise increases produced by these activities/equipment, the results of the analysis, as summarized in Table 3-17, can be compared with noise levels measured in the immediate vicinity of the project site (ST-3 and ST-4). Table 3-20 provides this comparison.

Table 3-20. Estimated Noise Increases Due to Project Operations

	Sensitive Receptor 1 (dBA)	Sensitive Receptor 2 (dBA)	Sensitive Receptor 3 (dBA)	Sensitive Receptor 4 (dBA)
Existing noise levels	50.8–54.7	50.8–54.7	50.8–54.7	50.8–54.7
Project operations	58	57	57	57
Combined (existing plus project) noise level	58.8–59.7	57.9–59	57.9–59	57.9–59
Increase due to project	5–8	4.3–7.1	4.3–7.1	4.3–7.1

Referring to Table 3-20, project operations would increase noise levels at adjacent noise-sensitive receptors by 4 to 8 dB and, as noted previously, result in noise levels that would exceed the applicable standards of the Los Angeles County Code (i.e., 55 dBA L_{50} at the neighboring residential properties, based on the arithmetic mean of the Noise Zone II and Noise Zone III standards.) These increases would represent significant impacts; however, with the implementation of MM-NOI-2 and MM-NOI-3, impacts would be reduced to less than significant, and the project would not cause noise increases above the County's noise threshold of 55 dBA L_{50} .

Mitigation Measures

Implement mitigation measures MM-NOI-2 and MM-NOI-3, above.

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact with mitigation incorporated. The only potential source of a temporary or periodic increase in noise associated with the project is construction. Without mitigation, construction activities would cause substantial noise increases at nearby noise-sensitive receptors. However, with implementation of recommended mitigation measure MM-NOI-1, the impact would be reduced to a less-than-significant level. Additional discussion and analysis are provided below.

Construction

Less-than-significant impact with mitigation incorporated. The only source of a temporary or periodic increase in noise associated with the project is construction. To quantify the noise increase, Table 3-21 compares the estimated L_{max} construction noise level (see Table 3-15, above) with the measured existing L_{max} at nearby measurement location ST-4 (see Table 3-12, above).

Table 3-21. Estimated Temporary Noise Increases Due to Project Construction

	Sensitive Receptor 1 (dBA L_{max})	Sensitive Receptor 2 (dBA L_{max})	Sensitive Receptor 3 (dBA L_{max})	Sensitive Receptor 4 (dBA L_{max})
Existing noise levels (from ST-4)	62	62	62	62
Project construction noise levels	65–89	63–87	61–77	61–76
Increase due to project	3–27	1–25	0–15	0–14
Notes: Project construction noise levels are based on the range for all phases of construction. dBA = A-weighted sound level; L_{max} = maximum sound level.				

Referring to Table 3-21, the predicted L_{\max} construction noise levels would exceed the measured existing L_{\max} by 14 to 27 dBA, which would be considered a substantial increase (an increase of 10 dBA is typically perceived as a doubling of loudness). This would be considered a significant impact; however, with implementation of MM-NOI-1, noise levels would be reduced to 70 dB L_{\max} , or less, resulting in noise increases of less than 10 dB, and impacts would be reduced to less than significant.

Operation

No impact. Noise increases due to project operation are considered to be permanent (see discussion under XII.c, above). No substantial temporary or periodic increases in ambient noise levels would occur as a result of project operation. There would be no impact.

Mitigation Measures

Implement mitigation measure MM-NOI-1, above.

- e. Be located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?*

Less-than-significant impact. The project is approximately 6.5 miles from the nearest airport (General William J. Fox Airfield, to the north). Therefore, noise levels associated with airport operations would be less than significant at the project site. Additional discussion is provided below.

Construction

Less-than-significant impact. The project is approximately 6.5 miles from the nearest airport. Therefore, airport-related noise impacts, which could affect workers on-site during project construction, would be less than significant.

Operation

Less-than-significant impact. The project is approximately 6.5 miles from the nearest airport. Therefore, airport-related noise impacts, which could affect the staff and patrons at the library during project operation, would be less than significant.

- f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?*

Less-than-significant impact. The project is approximately 5 miles from the nearest private airstrip (Bohunk's Airpark, to the northwest). Therefore, noise levels associated with private airstrip operations would be less than significant at the project site. Additional discussion is provided below.

Construction

Less-than-significant impact. The project is approximately 5 miles from the nearest private airstrip. Therefore, private airstrip-related noise impacts, which could affect workers on-site during project construction, would be less than significant.

Operation

Less-than-significant impact. The project is approximately 5 miles from the nearest private airstrip. Therefore, private airstrip-related noise impacts, which could affect the staff and patrons at the library during project operation, would be less than significant.

Cumulative Impacts

The study area for cumulative noise and vibration impacts consists of the area in the general vicinity of the proposed library that could be affected by the combined effects of the proposed project and other nearby related projects. Four related projects within a radius of 1.5 miles from the project site were considered; these include residential, office, and commercial land uses (see Table 2-1).

Construction

The closest related project would be development of the single-family lots approximately 2,000 feet east of the project site. Construction noise levels would be significantly attenuated by both the large distance and the shielding effects of intervening buildings. As such, any noise-sensitive receptor that would be close enough to be significantly affected by noise from construction of the library would receive only negligible levels of noise (if any) from any related project. Therefore, this impact would be less than significant.

Operation

Traffic

The traffic data used in both the existing and opening-year analyses include a combination of all non-project-generated traffic in the study area and, for the with-project scenarios, the anticipated traffic generated by the project itself. For the opening year, this includes growth attributable to cumulative projects in the area that do not currently exist. As such, the analyses provided previously in this section already address issues related to cumulative traffic noise for both existing and opening-year conditions, which were found to have less-than-significant impacts.

On-site Operations

The closest related project would be development of the single-family lots approximately 2,000 feet east of the project site. Operational noise levels would be significantly attenuated by both the large distance and the shielding effects of intervening buildings. As such, any noise-sensitive receptor that would be close enough to be significantly affected by noise from operation of the library would receive only negligible levels of noise (if any) from any related project. Therefore, this impact would be less than significant.

XIII. Population and Housing	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The proposed project site is in the Quartz Hill census-designated place (CDP), which has a land area of approximately 3.76 square miles and is located in Los Angeles County (U.S. Census Bureau 2014). The Quartz Hill CDP is estimated to have a population of 10,912; Los Angeles County, as a whole, is estimated to have a population of 9,818,605 (U.S. Census Bureau 2014). In 2012, the number of housing units in Quartz Hill totaled 3,680; the home ownership rate from 2008 to 2012 was 69.3 percent (U.S. Census Bureau 2014). The project site is an existing undeveloped lot.

Impact Analysis

Would the project:

- a. ***Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of roads or other infrastructure)?***

Construction

No impact. The proposed project would require construction of a new 12,500-square-foot one-story County library. The proposed project would replace the existing library, located approximately 0.2 mile away.

Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Thus, the project would not induce population growth, nor would it necessitate the construction of new homes or businesses. Project construction would not indirectly induce growth in the area because the project would not include the extension of roads or other infrastructure. As a result, there would be no construction-related impact.

Operation

No impact. The proposed project would not include housing or commercial development that would directly increase the number of residents or employees in the area, nor would it contribute to the development of additional homes and businesses in the community of Quartz Hill. Also, the proposed project would not extend roads or involve the addition of any growth-inducing infrastructure. As such, impacts would not be considered growth inducing, either directly or indirectly, and no operational impact would occur.

- b. *Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?***

Construction

No impact. The proposed project would not involve the construction or demolition of housing. Therefore, proposed project construction would not temporarily displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere. Thus, there would be no construction-related impact.

Operation

No impact. The proposed project would not involve the relocation or demolition of housing. Therefore, the proposed project would not displace housing units, necessitating the construction of replacement housing elsewhere. Thus, there would be no operational impact.

- c. *Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?***

Construction

No impact. There are no residents or people on the project site. Therefore, no persons would be temporarily displaced as a result of project construction. Thus, the construction of replacement housing would not be necessary, and no operational impact would occur.

Operation

No impact. There are no residents or people located on the project site. Therefore, no persons would be displaced as a result of the proposed project. Thus, the construction of replacement housing would not be necessary, and no operational impact would occur.

Mitigation Measures

No potentially significant impacts related to population and housing would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

The study area for the cumulative population and housing impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the site and their potential to affect resources similar to those that would be affected by the proposed project. There are four related projects within this area, including single-family housing, retail development, a carwash, an automotive service station (no gas), and an office for a public utility service center. The related projects, shown in Table 2-1,

could contribute to an increase in population and housing; however, the proposed project would not increase the population or displace housing. Therefore, the proposed project would not contribute to a potentially significant cumulative impact.

XIV. Public Services	Potentially Significant Impact	Less-than- Significant Impact with Mitigation Incorporated	Less-than- Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
1. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Fire Protection Services

LACFD provides fire, safety, and emergency medical services to the unincorporated areas of the County. There are three major geographic regions in the service area, which are divided into nine divisions and 22 battalions. LACFD also operates multiple divisions, including Air and Wildland, Fire Prevention, Forestry, and Health Hazardous Materials. In 2013, LACFD operated 170 fire stations with a total of 4,713 personnel (County of Los Angeles 2014).

LACFD has several standards to maintain adequate fire protection within their services area. The current standards for response times are (County of Los Angeles 2014):

- 5 minutes or less for response times for urban areas
- 8 minutes or less for suburban areas
- 12 minutes or less for rural areas

The closest fire station to the project site is LACFD Station 84, at 5030 West Avenue L-14 approximately 0.25 mile north of the project site. The next closest fire stations would be LACFD Stations 136 and 134, 2.3 miles southeast and 3 miles northeast of the project site, respectively. Table 3-22 provides a list of the nearest fire stations, their addresses, and approximate distances from the project site. According to LACFD, Quartz Hill is considered to be more of a rural area (Flores pers. comm.).

Table 3-22. List of Los Angeles County Fire Department Stations within the Project Vicinity

Name	Address	Approximate Distance
LACFD Station 84 ^a	5030 West Avenue L-14, Community of Quartz Hill	0.25 mile north
LACFD Station 136 ^b	3650 Bolz Ranch Road, Palmdale	2.3 miles southeast
LACFD Station 134 ^c	43225 25th Street West, Lancaster	3 miles northeast
^a LACFD 2014a. ^b LACFD 2014b. ^c LACFD 2014c.		

Police Protection Services

The Los Angeles County Sheriff's Department (LASD) provides law enforcement services to the project area. LASD is divided into 10 divisions, including the Office of Homeland Security, which focuses on potential threats related to local homeland security issues, such as terrorism or bioterrorism. LASD provides law enforcement services to more than one million people living within 90 unincorporated communities, as well as to more than four million residents living within 40 contract cities. In addition to proactive enforcement of criminal laws, LASD also provides investigative, traffic enforcement, accident investigation, and community education functions. The Field Operation Regions are centered on 25 patrol stations that are dispersed throughout Los Angeles County. Los Angeles also maintains mutual aid agreements across jurisdictional boundaries for emergency response needs that exceed local resources. LASD level of service ratio is one officer to every 1,000 residents (County of Los Angeles 2014).

The project site is within the jurisdiction of the LASD Lancaster Station, approximately 6 miles northeast of the project site at 501 West Lancaster Boulevard, in the City of Lancaster. This sheriff's station serves the communities of Antelope Acres, Lancaster, Quartz Hill, and Lake Los Angeles (LASD 2014).

Public Schools

The project site is in the Westside Union Elementary School District (WUESD), which operates six elementary schools, four kindergarten through 8th grade schools, two middle schools, and two academies (alternative education). In 2013, student enrollment in the WUESD was 8,645 (County of Los Angeles 2014).

The project site is within the Antelope Valley Unified High School District (AVUHSD), which operates seven high schools, two academies, five alternative education facilities, and one adult education facility. In 2013, student enrollment in the AVUHSD was 24,816. Table 3-23 provides a list of the schools that serve the project site, their respective districts, addresses, distances from the project site, and enrollment for the 2013–2014 school year.

Table 3-23. List of Schools within the Project Vicinity

Name	District	Address	Approximate Distance	2013–2014 Enrollment
Quartz Hill Elementary	WUESD	41820 50 th Street West, Quartz Hill	220 feet east	825
Joe Walker Middle School	WUESD	5632 West Avenue L-8, Quartz Hill	0.8 mile northwest	889
Quartz Hill High	AVUHSD	6040 West Avenue L, Quartz Hill	1.3 miles northwest	3,135

Source: California Department of Education 2014a, 2014b, 2014c

Parks

The County owns and operates parks and recreational facilities in both unincorporated areas and cities in Los Angeles County. The County's park system, including facilities that are owned, operated, and maintained by the County, totals nearly 70,000 acres. The system includes local parks (i.e., community parks, neighborhood parks, pocket parks, and park nodes), regional parks (i.e., community regional parks, regional parks, and special use facilities), trails, and such other facilities as multi-benefit parks, school sites, city parks and facilities, private recreational facilities, and greenways. These facilities serve the local needs of communities in the unincorporated areas, as well as regional needs countywide. The Los Angeles County Department of Parks and Recreation (DPR) offers a wide variety of recreation programs to meet the diverse needs of residents, ranging from organized sports, tournaments, scheduled classes, and special events, to more individualized, casual leisure activities such as family picnics and walking (County of Los Angeles 2014).

There are two parks within 1 mile of the project site: George Lane Park and Arnie Quinones Park. The 14-acre George Lane Park, the only park in the community of Quartz Hill, is approximately 0.6 mile northeast of the project site at 5520 West Avenue L-8. Amenities include barbecues, basketball courts, children's play area, a community building, gymnasium, lighted softball field, picnic tables, and a swimming pool. Arnie Quinones Park is less than 1 mile south of the project site at 41003 50th Street West in the City of Palmdale. It is an approximately 3-acre park with soccer fields and a playfield.

Quartz Hill Elementary School is 200 feet east of the project site at 41820 50th Street West. Per the WUESD and the Civic Center Act (Education Code 38130–38138), school facilities are a community resource and are available to citizens and community groups for recreational purposes as long as those purposes do not interfere with school activities or the regular conduct of school work. All individuals, groups, or organizations desiring to use school facilities are required to complete the district-designated form at least 10 days prior to the requested date of use, and use of school facilities on Saturdays, Sundays, or holidays is prohibited without special authorization. Also, the use of school facilities is prohibited during any intersession (Westside Union School District 2014).

See Figure 3-14 for the location of the project site and its proximity to the public services discussed above.

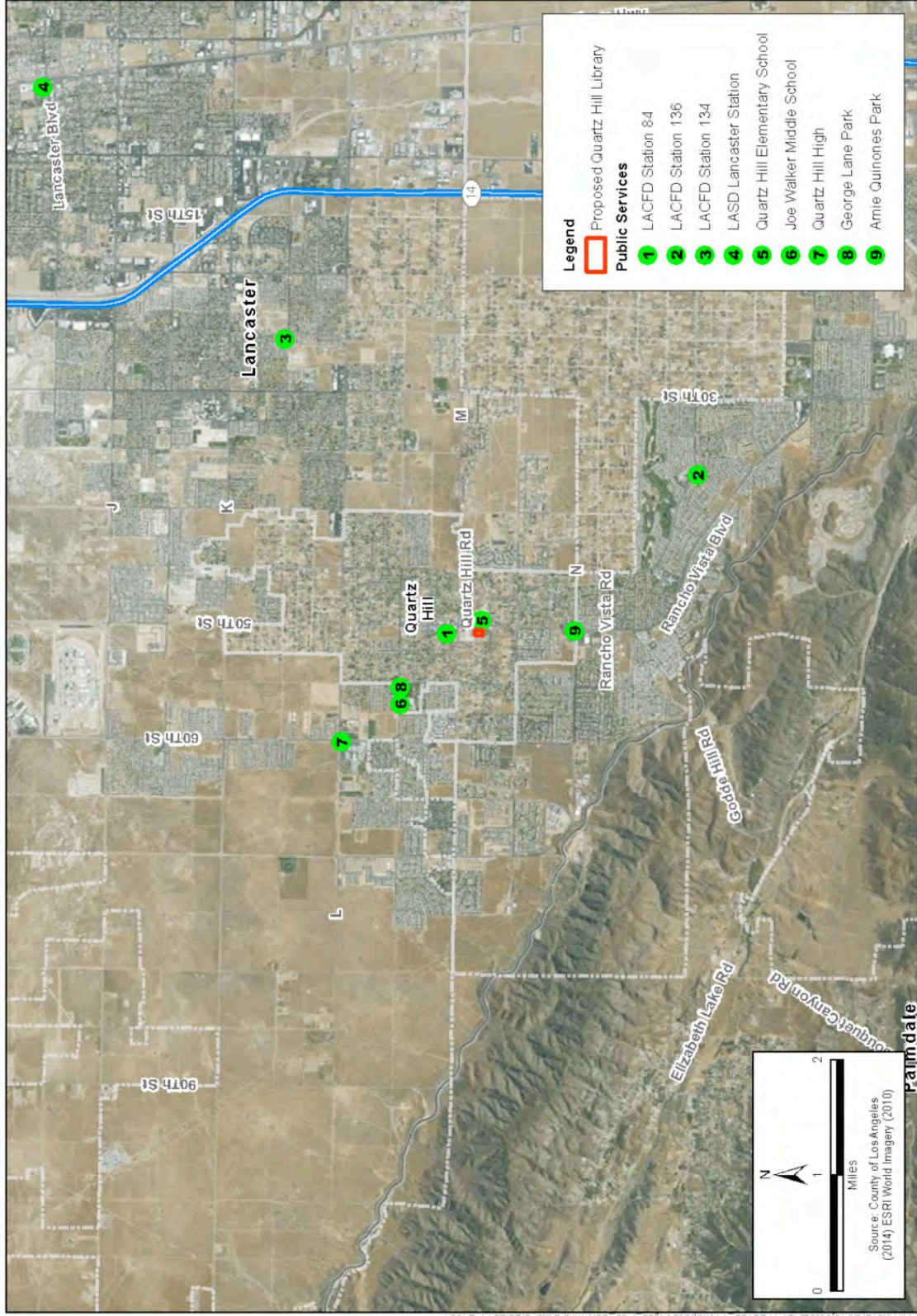


Figure 3-14
Public Services
Los Angeles County Quartz Hill Library



Impact Analysis

a. Would the project result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

1. Fire protection?

Construction

Less-than-significant impact. Construction activities associated with the proposed project would include site preparation, grading, and construction of the new library. Construction of the proposed project would not require the expansion of existing fire service facilities or the development of new facilities. The construction site would require fire protection services. However, standard best management practices would be employed during the construction process to ensure fire safety.

During the construction period, the proposed project may result in intermittent access restrictions for emergency responders in the form of temporary delays on West Avenue M2 and 50th Street West associated with deliveries and the off-haul of construction materials. However, as described further in Section XVI, Transportation/Traffic, such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. No construction parking or stationary construction equipment would be allowed on West Avenue M2, and flagging personnel would ensure that traffic congestion or blocking of the road does not occur. Moreover, no temporary lane or road closures would occur. Further, all activities related to the construction of the library would be staged on-site, which would minimize disruptions to adjacent streets and properties. Additionally, the nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. As a result, impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project would result in the operation of a new structure on currently vacant project site, which would, in turn, increase the demand for fire protection services compared to existing conditions. However, the new library would be a small structure located close to the fire station. Considering that the project site is in the Quartz Hill Business District, with easy access to fire hydrant service and streets and a short driving distance (0.25 mile) to the nearest fire station, fire service would not be significantly impacted. The number of people at the project site would increase on a daily basis over existing conditions. However, as the proposed project would replace the existing Quartz Hill Library, the overall services demands for LACFD would not change substantially.

In response to increasing demands for new facilities, equipment, and staffing created by new development, the County has implemented a Developer Fee Program, which is intended to offset some of the effects resulting from development. The current developer fee for the Antelope Valley Area is \$0.8426 per square foot of new development. This fee would be collected for the proposed project to ensure adequate levels of service for fire protection are maintained. Further, as stated in its Strategic Plan, LACFD is “currently financially capable of carrying out service delivery and will continue to maintain preparedness to respond to any and all

emergencies in its jurisdiction” (LACFD 2012). Therefore, the proposed project would not necessitate the construction or expansion of fire facilities in order to maintain acceptable service levels or performance standards. Impacts would be less than significant.

2. *Police protection?*

Construction

Less-than-significant impact. Construction of the proposed project would not require the expansion of existing police protection facilities or the development of new facilities. The construction site would require police protection services to ensure such crimes as theft and vandalism are minimized. However, standard best management practices would be employed during the construction process to ensure security.

During the construction period, the proposed project may result in intermittent access restrictions for emergency responders in the form of temporary delays on West Avenue M2 and 50th Street West associated with deliveries and the off-haul of construction materials. However, as described further in Section XVI, Transportation/Traffic, such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. No construction parking or stationary construction equipment would be allowed on West Avenue M2, and flagging personnel would ensure that traffic congestion or blocking of the road does not occur. Moreover, no temporary lane or road closures would occur. Further, the nearest local police responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of the proposed project would not require new or altered LASD facilities to maintain acceptable service ratios, response times, or other performance objectives. Impacts would be less-than-significant.

Operation

Less-than-significant impact. The proposed project would result in the development of an approximately 12,500-square-foot library on a currently vacant site. The proposed project would increase development intensity at the project site compared with existing conditions; however, it would not increase the residential population, and it would not impede LASD from achieving the desired officer-to-population ratio of one officer per every 1,000 residents. Therefore, operation of the proposed project would not result in a substantial increase in the demand for overall police protection services. The impacts would be less than significant.

3. *Schools?*

Construction

No impact. Construction of the proposed project would not result in adverse impacts to schools. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. Consequently, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. As a result, construction of the proposed project would not increase the local population. Therefore, the proposed project would not increase the demand for, and use of, existing schools, and no new or altered schools would be necessary. No impact would occur.

Operation

No impact. Operation of the proposed project would not directly increase the demand for new schools in the area because it does not include new housing. Operation of the proposed project would generate a small number of jobs; however, it is expected that these jobs would be accommodated by the existing labor force. Therefore, jobs associated with the proposed project would not attract new residents to the area and indirectly increase the demand for new schools, and no impact would occur.

4. Parks?

Construction

No impact. As discussed in Section XV, *Recreation*, construction of the proposed project would not result in adverse impacts on parks. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. Consequently, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. As a result, construction of the proposed project would not increase the local population. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. No impact would occur.

Operation

No impact. As discussed in Section XV, *Recreation*, operation of the proposed project would not result in adverse impacts on parks. An increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. The proposed project would not increase the number of housing units or the resident population in the surrounding community. As a replacement facility, the library would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. No impact would occur.

5. Other public facilities?

Construction

No Impact. The proposed project would not result in adverse impacts on other public facilities. Physical impacts on public services are usually associated with population changes, which can change the demand and funding for facilities. As discussed above, the proposed project would not increase the local population during construction or operation. Therefore, the proposed project would not result in an increased demand requiring new or physically altered public facilities; no impact would occur.

Operation

No Impact. For the same reasons discussed for construction, operation of the proposed project would not result in increased demand that would require new or physically altered public facilities. No impact would occur.

Mitigation Measures

No potentially significant impacts related to public services would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the site and their potential to affect resources similar to those that would be affected by the proposed project. There are four related projects within this area as identified in Table 2-1, including housing and commercial development projects that would increase the residential and daytime employee populations. These increases in population would increase the demand for public services.

Fire Protection Service

The related projects would increase the demand for fire protection services. However, in response to increasing demands for new facilities, equipment, and staffing created by new development, the County has implemented a Developer Fee Program, which is intended to offset some of the effects resulting from development. The current developer fee for the Antelope Valley Area is \$0.8426 per square foot of new development. This fee would be collected for each of the related projects to ensure adequate levels of service for fire protection are maintained. Furthermore, any growth that would be directly or indirectly fostered by the related projects would be reviewed for consistency with the Los Angeles County General Plan and the Antelope Valley Area Plan, which consider anticipated population growth. As discussed above, the proposed project would not have any significant impacts with respect to fire protection services. Therefore, it is not anticipated that future development, including the proposed project and related projects, would result in significant cumulative impacts with respect to fire protection services.

Police Protection Services

The related projects would increase the demand for police protection services. Two of the four related projects would directly increase residential population: the development of two single-family lots at 4748 West Avenue M-12 and the development of nine single-family lots south of 47th Street between Avenue M and Quartz Hill Road. Using the U.S. Census Bureau's 2010 average household size of 2.93 for the Antelope Valley, the related projects would be expected to increase the population by approximately 32 residents (U.S. Census Bureau 2010). However, this increase would not impede LASD from achieving the desired officer-to-population ratio of one officer to every 1,000 residents.

Although the proposed project and the other related projects would not directly increase the population of Quartz Hill, they would require law enforcement services. However, as future development occurs, including the proposed project and related projects, various types of tax revenue will continue to provide operational funding for LASD. Furthermore, any proposed projects that would require discretionary actions would be reviewed for consistency with the Los Angeles County General Plan and the Antelope Valley Area Plan, which consider anticipated population

growth. Therefore, LASD will be able to maintain staffing and equipment levels to adequately serve the population. As such, it is not anticipated that future development, including the proposed project and related projects, would result in significant cumulative impacts with respect to police protection services.

Schools

Two of the four related projects would directly increase residential population: the development of two single-family lots at 4748 West Avenue M-12 and the development of nine single-family lots south of 47th Street between Avenue M and Quartz Hill Road. This growth would increase the public school population in the project vicinity. While the development of 11 single-family lots could contribute to an increase in demand for school services, the proposed project would not affect the demand for school services or facilities because it would not increase the residential population. Therefore, the proposed project would not contribute to a significant cumulative impact with respect to schools.

Parks

Two of the four related projects would directly increase residential population: the development of two single-family lots at 4748 West Avenue M-12 and the development of nine single-family lots south of 47th Street between Avenue M and Quartz Hill Road. The proposed project and other related projects are not growth-inducing. The growth associated with the development of 11 single-family lots would have the potential to increase the use of recreational facilities, including parks. However, the proposed project would not increase the demand for, or use of, parks. Therefore, the proposed project would not contribute to a potentially significant cumulative impact with respect to parks.

Other Facilities

The four related projects include various residential and commercial uses within 1.5 miles of the proposed project. Two of the related projects would directly increase the population, which could increase the demand for public services and the construction of new facilities. However, while the proposed project involves construction and operation of a facility for public use, it would not increase the demand for, or use of, other public facilities. Therefore, it would not contribute to a significant cumulative impact with respect to other facilities.

XV. Recreation	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

George Lane Park and Arnie Quinones Park are located within 1.5 miles of the project site. Their locations and proximity to the project site are shown in Figure 3-14. George Lane Park is the primary park in the Quartz Hill community (DPR 2014a, 2014b). The 14-acre facility, located at 5520 West Avenue L-8, is managed by DPR. The facility includes basketball courts, a children’s play area, community building, multi-purpose room, swimming pool, gymnasium, and other amenities to serve the population in the surrounding community. George Lane Park managed by DPR, also provides a wide variety of recreational and community services, including after-school programs, culinary classes, sports and aerobics classes, summer camps, and other programmed events. Arnie Quinones Park, managed by the City of Palmdale, maintains a soccer field and play area (City of Palmdale 2014).

Impact Analysis

Would the project:

- a. *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?*

Construction

No impact. An increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. Because of the highly specialized nature of most construction projects, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed project. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. As a result, there would no construction-related impacts.

Operation

No impact. As previously discussed, an increase in the use of existing parks and recreational facilities typically results from a change in housing or population in an area. The proposed project would not increase the number of housing units or the resident population in the surrounding community. As a replacement facility, the library would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Furthermore, the project would not require the construction of new recreational facilities. Therefore, there would be no operational impact.

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Construction

No impact. As previously discussed, workers are likely to be employed on the job site only for as long as their skills are needed to complete a particular phase of the construction process. For that reason, it is reasonable to assume that most construction workers would not relocate their households to work on the proposed projects. Therefore, the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. There would be no construction-related impact.

Operation

No impact. The project would not include the development of any recreational facilities. As described above, the project would not have an impact on or require expansion of existing recreational facilities because it would not change the number of housing units or residents in the vicinity. Therefore, the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. As a result, there would no operational impact.

Mitigation Measures

No potentially significant impacts related to recreation would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

The study area for the cumulative impacts analysis encompasses the area within a 1.5-mile radius from the project site because of the proximity of past, present, and reasonably foreseeable future projects to the site and their potential to affect resources similar to those that would be affected by the proposed project. There are four related projects within this area, including single-family housing, retail development, a carwash, an automotive service station (no gas), and an office for a public utility service center. The related projects, shown in Table 2-1, could contribute to an increase in the use of recreational facilities; however, the proposed project would not affect recreational facilities. Therefore, the proposed project would not contribute to a potentially significant cumulative impact.

XVI. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel-demand measures or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Conflict with adopted policies, plans, or programs regarding public transit and bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is located in the unincorporated Los Angeles County community of Quartz Hill, adjacent to the western portions of the cities of Lancaster and Palmdale. The study area for the purposes of transportation has been defined as the roadway network and intersections surrounding the project site. Roadways within the study area, which are classified as either major arterials or secondary arterials, vary in average daily traffic volumes from 2,500 vehicles to more than 12,000 vehicles. Table 3-24 lists the study area roadways, their classifications, travel directions, and existing average daily traffic volumes. Table 3-25 lists the study area intersections, along with existing (2014) intersection volume-to-capacity (V/C) ratios and corresponding levels of service (LOS). At present, all intersections operate at LOS A or LOS B, with the exception of the 30th Street West/West Avenue M intersection, which operates at LOS D during the AM peak hour; the 60th Street West/West Avenue N intersection, which operates at LOS C during the AM peak hour; and the 30th Street West and West Avenue N intersection, which operates at LOS F during the AM and PM peak hours.

Table 3-24. Study Area Roadways

Roadways	Roadway Classification	Direction	Existing Average Daily Traffic Volume
W Avenue M/Columbia Way	Major Arterial	East/West	6,600
W Avenue M-8	Secondary Arterial	East/West	2,500
W Avenue N	Secondary Arterial	East/West	11,000
60 th Street W	Secondary Arterial	North/South	6,900
50 th Street W	Major Arterial	North/South	11,400
30 th Street W	Major Arterial	North/South	12,400

Table 3-25. Study Area Intersections and Existing Intersection LOS

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	55 th Street W and W Avenue L-8	All-Way Stop	0.510	A	0.296	A
2	50 th Street W and W Avenue L-8	Signalized	0.506	A	0.474	A
3	60 th Street W and Columbia Way	All-Way Stop	0.660	B	0.483	A
4	55 th Street W and Columbia Way	All-Way Stop	0.580	A	0.352	A
5	50 th Street W and Columbia Way	Signalized	0.576	A	0.516	A
6	30 th Street W and W Avenue M	Signalized	0.817	D	0.664	B
7	50 th Street W and W Avenue M-4	Signalized	0.537	A	0.406	A
8	60 th Street W and W Avenue M-8	All-Way Stop	0.494	A	0.345	A
9	55 th Street W and W Avenue M-8	All-Way Stop	0.386	A	0.269	A
10	50 th Street W and W Avenue M-8	Signalized	0.354	A	0.459	A
11	60 th Street W and W Avenue N	All-Way Stop	0.768	C	0.563	A
12	55 th Street W and W Avenue N	Signalized	0.322	A	0.351	A
13	50 th Street W and W Avenue N	Signalized	0.405	A	0.571	A
14	45 th Street W and W Avenue N	Signalized	0.610	A	0.533	A
15	30 th Street W and W Avenue N	Signalized	1.283	F	1.229	F

Figure 3-15 shows the locations of the study area intersections. For more information, see the Transportation Impact Study in Appendix F.

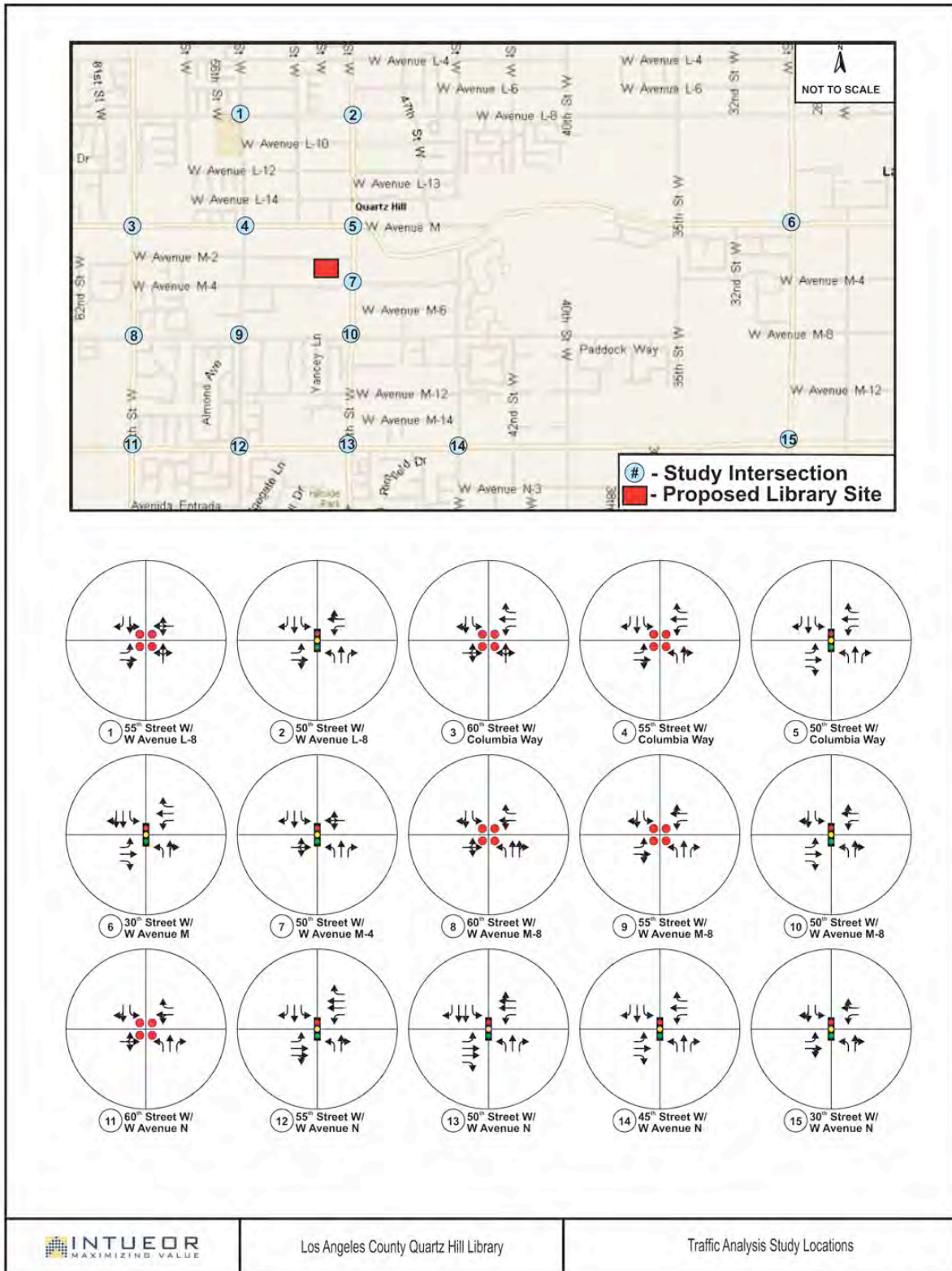


Figure 3-15
Study Area Intersection Locations
Los Angeles County Quartz Hill Library



Public transportation services offered in the study area include two fixed-route bus lines operated by the Antelope Valley Transit Authority (AVTA). AVTA Route 5 (Avenue L – Quartz Hill) serves West Avenue M and 50th Street West, with connections to Lancaster City Park, and AVTA Route 7 (Quartz Hill – West Lancaster/West Palmdale) serves 50th Street West, 60th Street West, and Quartz Hill High School, with connections at the Palmdale Transportation Center and the Lancaster Metrolink Station. AVTA also operates a dial-a-ride service throughout the high desert area.

Regulatory Setting

Los Angeles County Traffic Impact Analysis Study Guidelines

According to the transportation impact analysis report guidelines for Los Angeles County, a project will have a significant impact if the change in V/C or delay from the pre-project condition is greater than or equal to the criteria set forth in Table 3-26.

Table 3-26. Los Angeles County Intersection Impact Thresholds

Control Type	Pre-Project LOS	V/C Increase from Pre-Project
Signalized and Unsignalized Intersections	LOS C	≥ 0.04
	LOS D	≥ 0.02
	LOS E/F	≥ 0.01
Source: County of Los Angeles 1997.		

Los Angeles County Metropolitan Transportation Authority Congestion Management Program

The Los Angeles County Metropolitan Transportation Authority (Metro) is responsible for maintaining the performance standards of the Congestion Management Plan (CMP). Metro strives to maintain an LOS of E or better on all CMP-monitored facilities. According to Metro’s CMP guidelines (Metro 2010), a Transportation Impact Analysis (TIA) is conducted at the following:

- CMP arterial monitoring intersections, including freeway on- and off-ramps, where the proposed project would add 50 or more vehicle trips during either the AM or PM weekday peak hour.
- CMP mainline freeway monitoring locations where the project would add 150 or more trips in either direction during either the AM or PM weekday peak hour.

The project site is not located near a CMP arterial monitoring intersection and would not add greater than 50 peak hour trips to a CMP arterial monitoring intersection.

Impact Analysis

Would the project:

- a. ***Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?***

Construction

Less-than-significant impact. During the construction period, construction vehicles would use the roadways that surround the project site to deliver materials and haul waste. Workers' and construction vehicles would access the site from Avenue M-2 and park on the project site. Roadway users could experience temporary delays from material deliveries, but these delays would be both brief (i.e., no longer than 1 minute in duration) and infrequent; therefore, they would not affect overall traffic circulation in the study area. Workers' trips to and from the project site would occur primarily before the AM peak hour but may coincide with the PM peak hour at study area intersections.¹² Based on existing PM peak-hour traffic conditions, with all intersections operating at LOS A or B, except for one intersection (see Table 3-25), and the low volume of workers' vehicles leaving the site, construction workers' trips would have a negligible effect on traffic operations. The 30th Street West and West Avenue N intersection, which currently operates at LOS F during the AM and PM peak hours, is 2.9 driving miles from the project site. The distance between the project site and the congested intersection would distribute and deconcentrate construction-period trips such that significant impacts would be avoided.

All construction activities would occur within the project site. Construction staging would occur on-site and would not affect traffic operations on adjacent roadways. Construction activities would not impede non-motorized travel or public transportation in the study area. The temporary increase in construction traffic is not expected to degrade traffic operation substantially because all intersections in the project vicinity operate at an acceptable LOS of D or better, with most intersections performing at LOS A or B. Construction-related traffic impacts would be less than significant.

Operation

Less-than-significant impact. Trip generation estimates for the proposed project were calculated using the trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, ninth edition. The proposed project would involve operation of a 12,500-square-foot public library (ITE 590-Library). The proposed library is projected to generate 14 AM peak-hour trips (10 in and four out) and 92 PM peak-hour trips (44 in and 48 out).

Tables 3-27 and 3-28 show the results of the intersection LOS analysis conducted for the existing (2014) with-project and no-project scenarios and the opening-year (2016) with-project and no-project scenarios. According to the LOS analysis, the project's operational traffic impacts would be less than significant at all study area intersections. For more information, see the Transportation Impact Study in Appendix F. Operation of the proposed library would generate additional vehicle

¹² Peak hours at study area intersections occur from 7 a.m. to 8:30 a.m. and 4:15 p.m. to 5:45 p.m.

Table 3-27. Existing (2014) Intersection LOS Impacts

#	Intersection	Control Type	Peak-Hour Analysis	2014 Without Project		2014 With Project		Change in V/C	Significant Impact
				LOS	V/C	LOS	V/C		
1	55 th Street W and W Avenue L-8	All-Way Stop	AM	0.510	A	0.510	A	0.000	No
			PM	0.296	A	0.299	A	0.003	No
2	50 th Street W and W Avenue L-8	Signalized	AM	0.506	A	0.507	A	0.001	No
			PM	0.474	A	0.480	A	0.006	No
3	60 th Street W and Columbia Way	All-Way Stop	AM	0.660	B	0.660	B	0.000	No
			PM	0.483	A	0.486	A	0.003	No
4	55 th Street W and Columbia Way	All-Way Stop	AM	0.580	A	0.581	A	0.001	No
			PM	0.352	A	0.357	A	0.005	No
5	50 th Street W and Columbia Way	Signalized	AM	0.576	A	0.576	A	0.000	No
			PM	0.516	A	0.528	A	0.012	No
6	30 th Street W and W Avenue M	Signalized	AM	0.817	D	0.817	D	0.000	No
			PM	0.664	B	0.665	B	0.001	No
7	50 th Street W and W Avenue M-4	Signalized	AM	0.537	A	0.541	A	0.004	No
			PM	0.406	A	0.422	A	0.016	No
8	60 th Street W and W Avenue M-8	All-Way Stop	AM	0.494	A	0.494	A	0.000	No
			PM	0.345	A	0.348	A	0.003	No
9	55 th Street W and W Avenue M-8	All-Way Stop	AM	0.386	A	0.387	A	0.001	No
			PM	0.269	A	0.272	A	0.003	No
10	50 th Street W and W Avenue M-8	Signalized	AM	0.354	A	0.358	A	0.004	No
			PM	0.459	A	0.478	A	0.019	No
11	60 th Street W and W Avenue N	All-Way Stop	AM	0.768	C	0.768	C	0.000	No
			PM	0.563	A	0.566	A	0.003	No
12	55 th Street W and W Avenue N	Signalized	AM	0.322	A	0.323	A	0.001	No
			PM	0.351	A	0.353	A	0.002	No

#	Intersection	Control Type	Peak-Hour Analysis	2014 Without Project		2014 With Project		Change in V/C	Significant Impact
				LOS	V/C	LOS	V/C		
13	50 th Street W and W Avenue N	Signalized	AM	0.405	A	0.406	A	0.001	No
			PM	0.571	A	0.579	A	0.008	No
14	45 th Street W and W Avenue N	Signalized	AM	0.610	A	0.610	B	0.000	No
			PM	0.533	A	0.538	A	0.005	No
15	30 th Street W and W Avenue N	Signalized	AM	1.283	F	1.283	F	0.000	No
			PM	1.229	F	1.230	F	0.001	No

Table 3-28. Opening-Year (2016) Intersection LOS Impacts

#	Intersection	Control Type	Peak-Hour Analysis	2016 Without Project		2016 With Project		Change in V/C	Significant Impact
				LOS	V/C	LOS	V/C		
1	55 th Street W and W Avenue L-8	All-Way Stop	AM PM	0.510 0.296	A A	0.510 0.299	A A	0.000 0.003	No No
2	50 th Street W and W Avenue L-8	Signalized	AM PM	0.522 0.494	A A	0.523 0.500	A A	0.001 0.006	No No
3	60 th Street W and Columbia Way	All-Way Stop	AM PM	0.663 0.484	B A	0.663 0.487	B A	0.000 0.003	No No
4	55 th Street W and Columbia Way	All-Way Stop	AM PM	0.583 0.353	A A	0.584 0.359	A A	0.001 0.006	No No
5	50 th Street W and Columbia Way	Signalized	AM PM	0.595 0.533	A A	0.596 0.544	A A	0.001 0.011	No No
6	30 th Street W and W Avenue M	Signalized	AM PM	0.821 0.667	D B	0.821 0.669	D B	0.000 0.002	No No
7	50 th Street W and W Avenue M-4	Signalized	AM PM	0.554 0.421	A A	0.558 0.438	A A	0.004 0.017	No No
8	60 th Street W and W Avenue M-8	All-Way Stop	AM PM	0.497 0.347	A A	0.497 0.349	A A	0.000 0.002	No No
9	55 th Street W and W Avenue M-8	All-Way Stop	AM PM	0.389 0.271	A A	0.390 0.274	A A	0.001 0.003	No No
10	50 th Street W and W Avenue M-8	Signalized	AM PM	0.371 0.476	A A	0.375 0.495	F A	0.004 0.019	No No
11	60 th Street W and W Avenue N	All-Way Stop	AM PM	0.769 0.565	C A	0.769 0.568	C A	0.000 0.003	No No
12	55 th Street W and W Avenue N	Signalized	AM PM	0.323 0.352	A A	0.325 0.354	A A	0.002 0.002	No No
13	50 th Street W and W Avenue N	Signalized	AM	0.416	A	0.417	A	0.001	No

#	Intersection	Control Type	Peak-Hour Analysis	2016 Without Project		2016 With Project		Change in V/C	Significant Impact
				LOS	V/C	LOS	V/C		
14	45 th Street W and W Avenue N	Signalized	PM	0.578	A	0.586	A	0.008	No
			AM	0.611	B	0.611	B	0.000	No
15	30 th Street W and W Avenue N	Signalized	PM	0.533	A	0.538	A	0.005	No
			AM	1.284	F	1.284	F	0.000	No
			PM	1.229	F	1.231	F	0.002	No

trips in the project vicinity, but the increased traffic volumes would result in negligible delays for other roadway users. Project operations would have no effect on AVTA riders or pedestrians and bicyclists because no barriers would be introduced along study area roadways. The operations traffic impact would be less than significant

- b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel-demand measures or other standards established by the county congestion management agency for designated roads or highways?***

Construction

Less-than-significant impact. During the construction period, worker trips to and from the project site would occur outside of peak hours, and would have a negligible effect on traffic operations during peak hours. Brief and infrequent delays associated with deliveries and the off-haul of materials at the project site could occur. Because of the brief nature of the individual delay events and the duration of construction activities (approximately 13 months), the effects of construction activities on traffic operations would be less than significant.

Operation

Less-than-significant impact. As discussed in XVI.a, above, changes in V/C ratios would be minimal, and the corresponding LOS measures would not change. The provisions of the CMP do not apply to the proposed project because none of the study area intersections are CMP arterial monitoring intersections.

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?***

Construction

No impact. Air traffic would not increase as a result of construction of the proposed project because the library would not involve use of a helipad or aircraft runway during the construction period. The height of the proposed project would be approximately 30 feet, which is not substantially taller than surrounding structures in the project vicinity. Consequently, the height of the library would not pose safety risks to air traffic. No impacts would occur.

Operation

No impact. Air traffic would not increase as a result of operation of the proposed project because the library would not involve use of a helipad or aircraft runway. The height of the proposed project would be approximately 30 feet, which is not substantially taller than surrounding structures in the project vicinity. Consequently, the height of the library would not pose safety risks to air traffic. No impacts would occur.

- d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?***

Construction

Less-than-significant impact. The proposed project would involve construction of a library on a site that is currently undeveloped. Construction equipment would be stored at the project site temporarily during the construction period, but would be secured when not in use so as not to pose a hazard to the

surrounding community. No construction parking or stationary construction equipment would be allowed on W Avenue M2, and flagging personnel would ensure traffic congestion or blocking of the road does not occur. No hazards due to a design feature or incompatible uses would be introduced as a result of project construction. No adverse impacts are anticipated.

Operation

No impact. The proposed project would involve operation of a library on a site that is currently undeveloped. No hazardous design features or incompatible uses would be introduced for project operation. No adverse impacts are anticipated.

e. Result in inadequate emergency access?

Construction

Less-than-significant impact. During the construction period, roadway users, including emergency vehicles, may experience temporary delays on W Ave M2 and 50th Street West associated with deliveries and the off-haul of construction materials. Such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. No construction parking or stationary construction equipment would be allowed on W Avenue M2, and flagging personnel would ensure traffic congestion or blocking of the road does not occur. Moreover, no temporary lane or road closures would occur, and all construction activities would take place within the project site. Therefore, inadequate emergency access would not occur as a result of project construction and impacts would be less than significant.

Operation

Less-than-significant impact. In compliance with the Los Angeles County Fire Code, the project design would provide adequate emergency access. The proposed project would be subject to Los Angeles County Fire Department review prior to approval. Emergency vehicles would access the site from Avenue M-2. Therefore, a reduction in emergency access would not occur as a result of project operations and impacts would be less than significant.

f. Conflict with adopted policies, plans, or programs regarding public transit and bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

Construction

Less-than-significant impact. According to the Bicycle Master Plan, two bicycle facilities are planned in the vicinity of the project. The first is a Class III bike route along 50th Street West, from Avenue M-2 to Avenue N, and the other is a Class II bike lane along 55th Street West, from Avenue L to Avenue M-8. Project construction activities would not conflict with either proposed facility because the project would not result in any physical impediments along either roadway. Furthermore, project construction would not interfere with pedestrian mobility, nor would it affect AVTA Routes 5 and 7, which operate along 50th Street West. Impacts would be less than significant.

Operation

Less-than-significant impact. Operation of the proposed project would not conflict with either of the bicycle facilities that are planned for the vicinity because the project would not result in any physical impediments. Project operations would not interfere with pedestrian mobility in the study

area because the project would occur on a single off-street site. The proposed library would not affect AVTA Routes 5 and 7, which operate along 50th Street West. Impacts would be less than significant.

Mitigation Measures

No potentially significant impacts related to transportation/traffic would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project were to result in an incrementally considerable contribution to a significant cumulative impact when considered with past, present, and reasonably foreseeable future projects. The resource study area for the purposes of the cumulative impact analysis for traffic encompasses the area within a 1.5-mile radius from the project site and is the same as that used for the traffic study. This area includes the roadway network and intersections surrounding the project site, as identified in Tables 3-24 and 3-25, which was established based on a conservatively large area within which project impacts, if identified, would manifest themselves. There are four related projects within the resource study area of 1.5 miles as identified in Table 2-1.

Construction

Although the specific schedules for construction of the related projects identified in Table 2-1 are uncertain, none are located within close enough proximity to the project site or would generate construction vehicle traffic volumes capable of affecting roadway or intersection operation. The closest related project would be development of the single-family lots approximately 2,000 feet east of the project site. Furthermore, due to the low volume of construction workers trips to and from the project site, the project would have a negligible effect on traffic operations during the construction period. Delays associated with construction of the proposed project and related projects would be short-term and intermittent. During the construction period, roadway users, including emergency vehicles, may experience temporary delays on W Ave M2 and 50th Street West associated with deliveries and the off-haul of construction materials. Such delays would be infrequent and brief, and the potential reduction in emergency access would not result in conditions that would be substantially different from existing conditions on roadways that surround the project site. As such, emergency access would not be hindered during the construction period and the impacts of the proposed project would not be cumulatively considerable.

Construction of the related projects would occur off-street and would not create physical impediments to transit and non-motorized travel. Construction of the proposed project would not introduce physical impediments that would conflict with AVTA bus lines or the free flow of bicycle and pedestrian travel in the study area. Therefore, impacts of the proposed project would not be cumulatively considerable during the construction period.

The proposed project would not result in a cumulatively considerable contribution to a cumulative impact during the construction period and construction-related impacts of the proposed project would not be cumulatively considerable.

Operation

With respect to operational impacts, the related projects identified in Table 2-1 were incorporated into the traffic model and effects of these projects are reflected in Tables 3-27 and 3-28. In addition, background growth in traffic associated with development elsewhere in the study area was incorporated into the traffic model for opening year conditions. Changes in V/C ratios would be minimal, and the corresponding LOS measures would not change. Because no significant impacts were identified, the contribution of the proposed project would not be cumulatively considerable. As identified in Table 3-28, roadway operations during the opening year, which incorporates the related projects and growth in the area, would not experience significant impacts as a result of project implementation and adequate emergency access to the site and surrounding sites would be maintained.

The related projects would operate in a manner similar to the proposed project, with activities limited to the site and no physical impediments to non-motorized transportation. Operation of the proposed project would be limited to activities on the site as well as vehicles entering and exiting the site, and would not introduce physical impediments to roadway operation within the study area such that significant impacts to transit and non-motorized transportation would occur. As such, project-related impacts to transit and non-motorized transportation would not be cumulatively considerable.

The proposed project would not result in a cumulatively considerable contribution to a cumulative impact during operations, and operations-related impacts of the proposed project would not be cumulatively considerable.

XVII. Utilities and Service Systems		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is an approximately 1.75-acre undeveloped parcel located 150 feet southwest of 50th Street West on Avenue M-2 in the unincorporated community of Quartz Hill. There are no permanent buildings on the project site. Because the project site is vacant land, electric, gas, sewage disposal, and refuse collection services are not currently provided to the site. However, all utilities are available for extension to the project site. A water meter currently exists at the site.

The project site receives off-site water from properties to the south; water from the project site sheet flows onto Avenue M-2. The sheet-flow runoff migrates to an existing cross gutter on Avenue M-2 and continues flowing onto properties north of the street. The closest storm drain inlet (catch basin) is on 50th Street West.

Water

All of the water that is currently used in the Antelope Valley region comes from two sources, (1) naturally occurring water within the region (surface water and groundwater from rain and snow that falls in the Antelope Valley and on the surrounding mountains), as well as recycled water, and (2) State Water Project water (surface water that is collected in Northern California and imported into the Antelope Valley and other areas around the state). Recycled water and stormwater are secondary sources of water supply. A portion of the recycled water comes from the Antelope Valley region's two water reclamation plants, the Los Angeles County Sanitation District's (LACSD's) plants in Palmdale and Lancaster (Antelope Valley Regional Water Management Group 2013).

Water is provided to Quartz Hill by the Quartz Hill Water District, an independent special district in the southwestern portion of the Antelope Valley. The Quartz Hill Water District has a service area of approximately 4.5 square miles and includes unincorporated portions of the county of Los Angeles and the city of Lancaster. Quartz Hill Water District, which was incorporated in 1954, provides water service to all residential, commercial, industrial, and agricultural customers. Water is also provided for environmental and fire protection uses (Los Angeles County Department of Public Works Waterworks District No. 40 and Quartz Hill Water District 2011). The Quartz Hill Water District is a retailer of imported water from the Antelope Valley-East Kern Water Agency (AVEK), a wholesale supplier of State Water Project water to the region. The Quartz Hill Water District also produces local groundwater. Although the groundwater basin is not currently adjudicated, an adjudication process has begun and is in its final stages. There are no existing restrictions on pumping; however, water rights are likely to be assigned as part of the adjudication process (Antelope Valley Regional Water Management Group 2013).

Table 3-29 provides a summary of existing and planned water supply sources for the Quartz Hill Water District during an average water year over a 25-year planning period. Table 3-30 provides a summary of the actual and projected total water demand by land use type for the Quartz Hill Water District over a 25-year planning period. As shown in Tables 3-29 and 3-30, the Quartz Hill Water District anticipates being able to meet projected water supply demands through 2030.

There is currently no water use at the project site; however, a water meter is present.

Table 3-29. Current and Planned Water Supplies for the Quartz Hill Water District (acre-feet)

Year	2010	2015	2020	2025	2030	2035
Groundwater	1,900	2,500	2,500	2,500	2,500	2,500
State Water Project	3,500	6,800	6,800	6,800	6,800	6,800
Recycled Water	0	0	0	0	0	0
Groundwater Banking	0	0	0	0	0	0
Anticipated New Supply	0	0	0	0	0	900
Total	5,400	9,300	9,300	9,300	9,300	10,200
Source: Los Angeles County Department of Public Works Waterworks District No. 40 and Quartz Hill Water District 2011.						

Table 3-30. Actual and Projected Water Demand by Land Use Type for the Quartz Hill Water District (acre-feet)

	2010 Demand	2015 Demand	2020 Demand	2025 Demand	2030 Demand	2035 Demand
Single-Family Residential	4,558	4,955	5,830	6,615	7,440	8,440
Multi-Family Residential	25	40	50	70	90	110
Commercial	76	100	160	200	250	330
Heavy Industry	—	—	—	—	—	—
Light Industry	—	5	10	15	20	20
Mixed Use	—	—	—	—	—	—
Non-Urban Residential	841					
Public Areas	—	—	—	—	—	—
Health Care	—	—	—	—	—	—
Open Space	—	—	—	—	—	18
Total	5,500	6,000	7,000	8,000	9,000	10,220
Source: Los Angeles County Department of Public Works Waterworks District No. 40 and Quartz Hill Water District 2011.						

Wastewater

Wastewater management for the Antelope Valley is provided by LACSD. Wastewater generated in Quartz Hill is conveyed to, and treated by, two facilities, the Lancaster Water Reclamation Plant (District 14) and the Palmdale Water Reclamation Plant (District 20). The Lancaster Water Reclamation Plant, which would serve the project site, provides tertiary treatment for up to 18 million gallons per day (mgd) of wastewater (LACSD 2014a).

The Lancaster Water Reclamation Plant has recently undergone upgrades and expansion. The major components of the project included upgraded wastewater treatment facilities, recycled water management facilities, and municipal reuse. In 2012, wastewater treatment processes were upgraded from secondary oxidation ponds to activated sludge and nitrification-denitrification treatment, with filtration and disinfection to meet tertiary recycled water requirements (Los Angeles County Department of Public Works Waterworks District No. 40 et al. 2014).

Solid Waste

Waste Management provides solid waste management service in the community of Quartz Hill. The company operates two disposal facilities in the Antelope Valley: the Lancaster Landfill and Recycling Center and the Antelope Valley Recycling and Disposal Facility. The Lancaster Landfill and Recycling Center is approximately 9 miles from the project site, in Palmdale. It currently encompasses 276 acres of land, with 209 acres permitted for waste disposal (Waste Management 2014a). The Antelope Valley Recycling Center and Disposal Facility is approximately 6 miles from the project site, in Lancaster. It currently encompasses 185 acres of land, with 125 acres permitted for waste disposal (Waste Management 2014b). Table 3-31 provides an overview of both landfills. No solid waste is generated on the project site because it is vacant.

Table 3-31. Existing Landfill Conditions

Landfill	Size (acres)	Estimated Cease Operating Year	Permitted Daily Capacity (tons/day)	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Remaining Capacity (%)
Lancaster Landfill and Recycling Center	276	2044	5,100	27,700,000	14,514,648	52
Antelope Valley Recycling and Disposal Facility	185	2042	3,564	—	20,400,000	—

Source: California Department of Resources Recycling and Recovery (CalRecycle) 2014a, 2014b.

Impact Analysis

Would the project:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Construction

Less-than-significant impact. Construction of the proposed project would generate a minimal amount of wastewater. The primary source of wastewater would be sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers, and sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site.

Construction activities would include site preparation and grading. Construction activities could result in sedimentation and water contamination from liquids such as solvents and paints. However, because the proposed project would disturb an area greater than 1 acre, it would be subject to the requirements of the General Construction Permit, which was adopted by the State Water Resources Control Board as Water Quality Order 2009-0009-DWQ (effective July 1, 2010). As such, best management practices (BMPs) would be employed during construction, such as sediment and erosion control measures to prevent pollutants from leaving the site. Construction workers would be expected to follow the BMPs, which would reduce any construction-related wastewater impacts. Therefore, the proposed project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board. The impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project is designed to achieve a LEED Silver rating and includes features to minimize the generation of wastewater, such as low-flow water fixtures.

New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations, would convey the wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of

wastewater; average flows of treated wastewater in 2013 totaled 14 mgd (LACSD 2014a, 2014b). The Lancaster Water Reclamation Plant is under the jurisdiction of the Lahontan Regional Water Quality Control Board and subject to California Waste Discharge Requirements. Additionally, according to LACSD, all water reclamation plants, including the Lancaster Water Reclamation Plant, conduct water quality measurements and analyses that meet all requirements of the Regional Water Quality Control Board. Because the wastewater generated by the proposed project would be treated at the Lancaster Water Reclamation Plant, and the Lancaster Water Reclamation Plant is subject to the California Waste Discharge Requirements, operation of the proposed project would not generate wastewater that would exceed the requirements of the Regional Water Quality Control Board. The impacts would be less than significant.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction

Water

Less-than-significant impact. Construction of the proposed project would necessitate the use of water for various purposes. Water would be used during concrete and plaster work, which is expected to consume 10,000 gallons. General grading is expected to consume 50,000 to 75,000 gallons of water. General dust suppression is expected to consume 500 gallons per day for approximately 90 days. The limited amount of water used during the remainder of the construction period is expected to total approximately 200 gallons per day for 7 months. Water used during construction would be delivered to the project site by truck.

The water uses described above would not result in a substantial permanent increase in water consumption, and new water treatment facilities would not be required to meet this incremental and temporary increase in demand. The impacts would be less than significant.

Wastewater

Less-than-significant impact. Construction of the proposed project would generate a minimal amount of wastewater. However, it would not require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities. The primary source of wastewater would be the sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers, and sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site. The impacts would be less than significant.

Operation

Water

Less-than-significant impact. In 2011, Los Angeles County Department of Public Works Waterworks District No. 40 and the Quartz Hill Water District jointly prepared an Integrated Regional Urban Water Management Plan (IRUWMP) for the Antelope Valley to address issues related to long-term plans for providing water service to properties within their respective boundaries. According to the IRUWMP, water demand for the Quartz Hill Water District in 2015 is forecast to be 6,000 acre-feet. Using the IRUWMP's Public Areas water use factor of 2.6 acre-feet per

acre, the estimated annual water demand from the library would be 4.55 acre-feet.¹³ However, actual annual water use may be less. For example, water use at the 10,000-square-foot Acton Agua Dulce Library over a 12-month period from, July 2013 to July 2014, was documented to be approximately 0.7 acre-feet (Los Angeles County Utility Billing System, 2014). As shown in the IRUWMP, the Quartz Hill Water District would be able to meet the increasing demand through 2035 with implementation of planned water supplies, assuming the availability of groundwater remains the same as indicated in the IRUWMP. Therefore, the proposed project would not necessitate the construction of new water treatment facilities or expansion of existing facilities. The impacts would be less than significant.

Wastewater

Less-than-significant impact. Operation of the proposed project would require new connections to the LACSD sanitary sewer system. The generation of wastewater at the project site would increase compared with existing conditions; however, it would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities. The proposed project, which would be designed to achieve a LEED Silver rating, includes features that would minimize the generation of wastewater, such as low-flow water fixtures. Using a wastewater generation factor of 150 gallons per day (gpd)/1,000 square feet, operation of the proposed project would be expected to generate 1,875 gpd of wastewater.¹⁴ This wastewater would be primarily in the form of sanitary waste. The LACSD sanitary sewer system would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; average flows of treated wastewater in 2013 totaled 14 mgd (LACSD 2014a, 2014b). Although wastewater generation would increase compared with existing conditions, the increase would be nominal relative to the residual treatment capacity of approximately 4 mgd at the Lancaster Water Reclamation Plant. Therefore, operation of the proposed project would not require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities. The impacts would be less than significant.

- c. ***Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

Construction

Less-than-significant impact. The project site is currently a vacant lot. Construction activities would include site preparation and grading, which could result in sedimentation and erosion. However, construction of the proposed project would be subject to BMPs, which would ensure that runoff would be contained, clean, and controlled. Therefore, construction of the proposed project would not create or contribute runoff water that would require or result in the construction of new stormwater drainage facilities or the expansion of existing facilities. The impacts would be less than significant.

¹³ Estimated water use calculation and source: $(2.6 \text{ acre-feet/acre})(1.75 \text{ acres}) = 4.55 \text{ acre-feet}$ (Los Angeles County Department of Public Works Waterworks District No. 40 and Quartz Hill Water District 2011).

¹⁴ Estimated wastewater assumptions, calculation, and source: A wastewater generation factor for Office was used for this calculation; a wastewater generation factor specific to libraries was not available $(150 \text{ gpd}/1,000 \text{ square feet})(12,500 \text{ square feet}) = 1,875 \text{ gpd}$ (County of Los Angeles 2012).

Operation

Less-than-significant impact. Operation of the project would result in an increase in the amount of stormwater runoff at the site; however, it would not require construction of new stormwater drainage facilities or the expansion of existing facilities. The project site currently consists of relatively flat ground that slopes to the north at a gradient of approximately 1 percent. The project site receives sheet-flow drainage from properties to the south. This sheet flow from the south flows into an existing cross gutter in Avenue M-2 and then to properties to the north. The closest storm drain inlet (catch basin) is in 50th Street West.

Of the 1.75-acre project site, the approximate net area that would remain pervious is 1.1 acres. The proposed project would include 13-foot-wide landscaped bioswales that would terminate in seepage pits on the eastern, southern, and western sides of the project site. These bioswales would manage 100 percent of the water coming from adjacent properties. During a significant storm, water from the seepage pits would overflow through parkway culverts and continue on its historical path. Excluding the bioswales, all areas on the project site would drain into a sand/oil separator and then into an underground detention system that would be designed to handle back-to-back 25-year storms. During a major rain event, the detention system would be designed to overflow; the water would continue on its historical path. These project features would minimize environmental effects due to the increased amount of stormwater runoff that would be generated by the proposed project. Therefore, the impacts would be less than significant.

- d. *Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?***

Construction

Less-than-significant impact. Construction of the proposed project would necessitate the use of water for various purposes. Water would be used during concrete and plaster work, which is expected to consume 10,000 gallons. General grading is expected to consume 50,000 to 75,000 gallons of water. General dust suppression is expected to consume 500 gallons per day for approximately 90 days. The limited amount of water used during the remainder of the construction period is expected to total approximately 200 gallons per day for 7 months. Water used during construction would be delivered to the project site by truck. However, the increase in water consumption would be temporary, and the Quartz Hill Water District would be able to meet this demand, as outlined in detail below. The impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project would increase water use on the project site to approximately 4.55 acre-feet per year. Water usage during library operations would be associated with on-site facilities and minimal landscape irrigation. However, the proposed project would be designed to achieve a LEED Silver rating. It would incorporate many features that would reduce water usage, including low-flow water fixtures and water-efficient, drought-tolerant landscaping. The landscape design would emphasize drought-tolerant plant materials and an irrigation design that would utilize highly efficient systems with drip and bubbler emitters. The specific plant materials would be adaptable to the high desert and require little maintenance. Landscape irrigation would be in accordance with State Ordinance 1881, the Water Conservation in Landscaping Act of 2006, which mandates increased water efficiency for both new and existing development statewide. Additionally, according to the IRUWMP, water demand for the Quartz Hill Water District in 2015 is

forecast to be 6,000 acre-feet. The proposed project's demand of 4.55 acre-feet per year would account for less than 0.08 percent of total projected demand. As shown in the IRUWMP, the Quartz Hill Water District would be able to meet the increasing demand through 2035 with implementation of planned water supplies. Therefore, the proposed project would not require new or expanded entitlements to ensure the availability of sufficient water supplies. The impacts would be less than significant.

- e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Construction

Less-than-significant impact. Construction of the proposed project would generate a minimal amount of wastewater; however, that amount would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. The primary source of wastewater would be sanitary waste generated by construction workers. Portable waste facilities would be provided for use by all workers. Sanitary waste generated from the use of these facilities would be disposed of by an approved contractor at an approved disposal site. Therefore, construction activities associated with the proposed project would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. The impacts would be less than significant.

Operation

Less-than-significant impact. The proposed project was designed to achieve a LEED Silver rating. It would include features to minimize the generation of wastewater, such as low-flow water fixtures. Operation of the proposed project would be expected to generate approximately 1,875 gpd of wastewater. New connections to the LACSD sanitary sewer system, which would be installed in compliance with County regulations, would convey wastewater generated by the proposed project to the Lancaster Water Reclamation Plant, which provides tertiary treatment for up to 18 mgd of wastewater; average flows of treated wastewater in 2013 totaled 14 mgd (LACSD 2014a, 2014b). Although wastewater generation at the project site would increase compared with existing conditions, the increase would be nominal relative to the residual treatment capacity of approximately 4 mgd at the Lancaster Water Reclamation Plant. In addition, the proposed project would not increase the population served by the Lancaster Water Reclamation Plant. As discussed above, the Lancaster Water Reclamation Plant has recently undergone upgrades and expansion to accommodate projected population growth. As a result, operation of the proposed project would not exceed the capacity of the existing wastewater treatment system when considered in combination with the provider's existing service commitments. The impacts would be less than significant.

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Construction

Less-than-significant impact. Construction activities would include site preparation and grading; these activities would generate solid waste. However, the project site would be designed as a balanced site, which would minimize import to and export from the site. Approximately 2,500 cubic

yards of soil would be over-excavated and recompacted to create the building pad, parking lot, and perimeter bioswale. It is expected that approximately 400 to 500 cubic yards of fill would be exported from the project site from excavations for foundations, utilities, and other site features. This fill, along with other construction waste, would be disposed of at either the Lancaster Landfill and Recycling Center or the Antelope Valley Recycling and Disposal Facility. Consequently, construction impacts would be less than significant.

Operation

Less-than-significant impact. Because the project site is currently vacant, operation of the proposed project would result in increased generation of solid waste compared with existing conditions. Using a solid waste generation factor for Public/Institutional uses of 0.007 pound per square foot per day, operation of the proposed project would be expected to generate approximately 14.4 tons of solid waste annually.¹⁵ Solid waste would be collected from the project site by a private waste hauler and disposed of at the appropriate landfill or recycling facility. Solid waste generated in Quartz Hill is currently collected by Waste Management and disposed of at the Lancaster Landfill and Recycling Center, which has a remaining capacity of 14,514,648 cubic yards, and the Antelope Valley Recycling and Disposal Facility, which has a remaining capacity of 20,400,000 cubic yards. Both facilities have more than 25 years of estimated remaining operational time. Therefore, both have sufficient long-term remaining capacity to accommodate operational waste from the proposed project. The impacts associated with operation of the proposed project would be less than significant.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

Construction

No impact. Construction of the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. AB 939 mandates the reduction of solid waste disposal in landfills. The bill mandates a minimum 50 percent waste diversion goal and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance (Waste Management 2014a, 2014b). As stated in the 2012 Countywide Integrated Waste Management Plan Annual Report for Los Angeles County, the estimated diversion rate for the entire county was 60 percent (Los Angeles County Department of Public Works 2013). Solid waste generated by the proposed project would be disposed of at either the Lancaster Landfill and Recycling Center or the Antelope Valley Recycling and Disposal Facility. Both facilities monitor, inspect, and record waste that enters their facilities to facilitate compliance with AB 939. Furthermore, the proposed project would be implemented in a manner that would be consistent with the County's commitment to, and compliance with, AB 939. As a result, no impact would occur.

Operation

No impact. Operation of the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. Solid waste generated by the proposed project would be disposed of at either the Lancaster Landfill and Recycling Center or the Antelope Valley Recycling and Disposal Facility. Both facilities monitor, inspect, and record waste that enters their facilities to facilitate compliance with AB 939. Furthermore, the proposed project would be implemented in a

¹⁵ Estimated solid waste generation calculation and source: $(0.007 \text{ pound/square foot/day})(12,500 \text{ square feet})(365 \text{ days})(0.00045 \text{ ton/1 pound}) = 14.4 \text{ tons per year}$ (CalRecycle 2013a).

manner that would be consistent with the County's commitment to, and compliance with, AB 939. As a result, as discussed above for construction of the proposed project, operation of the proposed project would also comply with applicable federal, state, and local statutes related to solid waste. No impact would occur.

Mitigation Measures

No significant impacts related to utilities and service systems would occur as a result of the proposed project. Therefore, no mitigation measures are required.

Cumulative Impacts

A cumulative impact could occur if the proposed project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area.

Four related projects within 1.5 miles of the project site are considered in the cumulative impacts analysis. See Table 3-32 for a list of the estimated generation of solid waste and wastewater for the related projects considered in this cumulative impact analysis.

Table 3-32. Generation of Solid Waste and Wastewater from Related Projects

Description	Address/Location	Size	Solid Waste	Wastewater
Single-family lots	4748 West Avenue M-12	Two proposed single-family lots	4.05 tons per year ^a	410.2 gallons per day ^{c, d, f}
Retail, carwash, and automotive service station (no gas)	Northeast corner of 50 th Street West and West Avenue L-2	18,995 square feet for retail, 2,500 square feet for carwash, 7,575 square feet for automotive service station	43.32 tons per year ^b	50.2 gallons per day ^{c, g}
General office for a public utility service center	Southwest corner of 50 th Street West and West Avenue N	7,944 square feet	7.89 tons per year ^b	1,191.6 gallons per day ^e
Single-family lots	South of 47 th Street between Avenue M and Quartz Hill Road	Nine proposed single-family lots	18.22 tons per year ^a	1,846.05 gallons per day ^{c, d, f}
Total			73.48 tons per year	3,498.05 gallons per day
^a CalRecycle 2013b. ^b CalRecycle 2013c. ^c Ellis 2004. ^d U.S. Census Bureau 2010. ^e County of Los Angeles 2012. ^f Assumed 2.93 members per household. ^g Assumed five cars per day.				

Water

The IRUWMP estimates that the population in the Quartz Hill Water District service area will grow from approximately 20,800 in 2015 to 33,000 in 2035. These population estimates are based on land use maps and general plans for the cities of Palmdale and Lancaster. Although the related projects would increase the demand for water, this type of growth was anticipated during development of the land use maps and general plans for the Antelope Valley and, therefore, was incorporated into the IRUWMP. The IRUWMP indicates that the Quartz Hill Water District will be able to meet the increasing demand through 2035 with implementation of planned water supplies, assuming the availability of groundwater remains the same as indicated in the IRUWMP. Therefore, it is not anticipated that future development, including the proposed project and related projects, would result in significant cumulative impacts with respect to water supply and infrastructure.

Solid Waste

As shown in Table 2-1, the related projects, if approved, would increase the generation of solid waste. Solid waste generated by the related projects would be served by either the Lancaster Landfill and Recycling Center, which has a remaining capacity of 14,514,648 cubic yards, or the Antelope Valley Recycling and Disposal Facility, which has a remaining capacity of 20,400,000 cubic yards. Both facilities have more than 25 years of estimated remaining operational time. Therefore, both have sufficient long-term remaining capacity to accommodate the estimated 87.88 tons of solid waste annually from the related projects and the proposed project. It is not anticipated that the related projects would result in significant cumulative impacts with respect to solid waste.

Wastewater

The related projects would be served by the Lancaster Water Reclamation Plant (District 14) and/or the Palmdale Water Reclamation Plant (District 20). As discussed above, the Lancaster Water Reclamation Plant provides tertiary treatment for up to 18 mgd of wastewater; average flows of treated wastewater in 2013 totaled 14 mgd (LACSD 2014a, 2014b). The Palmdale Water Reclamation Plant has a capacity of 12 mgd of wastewater; average flows of treated wastewater in 2013 totaled 8.7 mgd (LACSD 2014b). The residual treatment capacities of the Lancaster Water Reclamation Plant and the Palmdale Water Reclamation Plant, approximately 4 mgd and 3 mgd, respectively, would be more than adequate to serve the related projects and the proposed project. Therefore, it is not anticipated that the related projects would result in significant cumulative impacts with respect to wastewater treatment and infrastructure.

Conclusion

Population growth in the Antelope Valley has been anticipated by the utility service providers, and conservation, management, and expansion strategies are being implemented to ensure adequate capacity for meeting the demands of this growth. As such, it is not anticipated that the development of the four related projects in combination with the proposed project would result in significant cumulative impacts related to utilities and service systems. As discussed above, the proposed project would not result in any potentially significant impacts on utilities and service systems. The proposed project would not exceed the wastewater treatment requirements of the Regional Water Quality Control Board, and it would not require or result in the construction of new water, wastewater treatment, or stormwater drainage facilities or the expansion of existing facilities. The proposed project would have adequate water supplies available, and it would be served by landfills with sufficient permitted capacity to accommodate its solid waste disposal needs. Therefore, cumulative impacts associated with utilities and service systems would be less than significant.

XVIII. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact Analysis

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less-than-significant impact with mitigation incorporated. Construction and operation of the proposed project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

As discussed in Section IV, Biological Resources, the project site lacks suitable habitat that could support special-status plant and wildlife species. The project would not remove any riparian habitat or other sensitive natural communities, it would not have any effect on protected wetlands, and it would not affect any wildlife corridors or nursery sites. The project site could be used by birds during the nesting season. Therefore, in accordance with mitigation measure MM BIO-1, Nesting Bird Compliance, a nesting bird survey would be performed within 7 days of the commencement of

any construction activities between February 15 and September 15. If breeding activity and/or an active bird nest is located, a construction avoidance zone shall be established, and no construction activities shall be permitted within the established zone, thereby minimizing any impacts related to conflicts with the Migratory Bird Treaty Act or the California Fish and Game Code, both of which protect nesting birds. As a result, impacts would be less than significant with mitigation incorporated.

As discussed in Section V, Cultural Resources, the proposed project would not eliminate important examples of the major periods of California history or prehistory. The proposed project would incorporate mitigation measures MM CUL-1, MM CUL-2, and MM CUL-3 to reduce potential impacts in the event that archaeological or paleontological resources or human remains are identified during construction-related activities. As a result, impacts would be less than significant with mitigation incorporated.

- b. Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-than-significant impact. A cumulative impact could occur if the proposed project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects. As discussed in Sections I through XVII, the proposed project would not result in any unavoidable significant impacts. The proposed project could contribute to cumulative impacts related to aesthetics, agriculture and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and utilities and service systems. However, as discussed in detail above, the proposed project would not result in a cumulatively considerable impact on any resource area.

- c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-significant impact with mitigation incorporated. As described in detail in Sections I through XVII, above, the proposed project could have potentially significant environmental impacts related to aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, and noise. However, the analyses conclude that these impacts could be reduced to a less-than-significant level with incorporation of the mitigation measures identified herein. Therefore, after implementation of mitigation measures, the proposed project would not have environmental effects that would cause substantial adverse effects on human beings. Impacts would be less than significant with mitigation incorporated.

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Chapter 5

List of Preparers and Persons Consulted

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Appendices to the Quartz Hill Library Project

Draft Initial Study/Mitigated Negative Declaration

January 2015

Appendix A
Air Quality

Quartz Hill

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	12.50	1000sqft	1.25	12,500.00	0
Parking Lot	21.78	1000sqft	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	7			Operational Year	2016

Utility Company Los Angeles Department of Water & Power

CO2 Intensity (lb/MW/hr)	1227.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.75 acre site per PD. 1.25 for building, 0.5 for parking.

Construction Phase - Construction schedule from applicant

Off-road Equipment - Exterior hard and landscape equip 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Fixtures - no equipment

Off-road Equipment - Grading equip assumed 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Interior Finishes - no equipment

Off-road Equipment - Utilities equip 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Rough-in equip 8 hrs/day each piece unless Caleemod default is otherwise. Plaster applicator shown as "other const equip".

Off-road Equipment - Structure equip 8 hrs/day each piece unless Caleemod default is otherwise

Trips and VMT - worker trips assumed each worker = 2 trips/day. All delivery and haul trucks assumed to be HHDT.

Grading - 2500 cy for "onsite" work, haul trucks activity based on applicant numbers

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	18980	18000
tblConstructionPhase	NumDays	10.00	151.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	75.00
tblConstructionPhase	NumDays	200.00	36.00
tblConstructionPhase	NumDays	200.00	41.00
tblConstructionPhase	NumDays	4.00	31.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	51.00
tblConstructionPhase	PhaseEndDate	7/15/2016	5/22/2016
tblConstructionPhase	PhaseEndDate	8/12/2015	9/25/2015
tblConstructionPhase	PhaseEndDate	1/8/2016	12/17/2015
tblConstructionPhase	PhaseEndDate	7/11/2016	3/26/2016

tblConstructionPhase	PhaseEndDate	10/23/2015	8/12/2015
tblConstructionPhase	PhaseEndDate	8/13/2015	7/1/2015
tblConstructionPhase	PhaseEndDate	9/9/2015	9/10/2015
tblConstructionPhase	PhaseStartDate	12/18/2015	10/25/2015
tblConstructionPhase	PhaseStartDate	7/2/2015	8/13/2015
tblConstructionPhase	PhaseStartDate	9/26/2015	9/4/2015
tblConstructionPhase	PhaseStartDate	5/23/2016	2/8/2016
tblConstructionPhase	PhaseStartDate	9/11/2015	7/1/2015
tblConstructionPhase	PhaseStartDate	8/13/2015	7/1/2015
tblGrading	AcresOfGrading	42.63	1.75
tblGrading	AcresOfGrading	25.50	0.00
tblGrading	MaterialExported	0.00	2,500.00
tblLandUse	LotAcreage	0.29	1.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	11.51	11.05
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	313.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	75.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	35.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	6.00	0.00
tblTripsAndVMT	VendorTripNumber	6.00	0.00

tblTripsAndVMT	VendorTripNumber	6.00	0.00
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	10.00
tblTripsAndVMT	WorkerTripNumber	14.00	16.00
tblTripsAndVMT	WorkerTripNumber	14.00	12.00
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblWater	IndoorWaterUseRate	391,111.35	375,466.90
tblWater	OutdoorWaterUseRate	611,738.27	587,268.74

2.0 Emissions Summary

2.2 Overall Operational
Unmitigated Operational

Category	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
	lb/day															
Area	0.8112	3.0000e-005	3.59000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003
Energy	6.5300e-003	0.0593	0.0498	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003		71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259
Mobile	2.4960	4.8374	26.6122	0.0432	3.2143	0.0509	3.2652	0.8565	0.0468	0.9033		3,715.270 ₁	3,715.270 ₁	0.2102		3,719.684 ₁
Total	3.3137	4.8968	26.6657	0.0435	3.2143	0.0554	3.2697	0.8565	0.0513	0.9078		3,786.470₂	3,786.470₂	0.2116	1.3100e-003	3,791.317₉

Mitigated Operational

Category	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
	lb/day															
Area	0.8112	3.0000e-005	3.59000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003
Energy	6.5300e-003	0.0593	0.0498	3.6000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003		71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259
Mobile	2.4960	4.8374	26.6122	0.0432	3.2143	0.0509	3.2652	0.8565	0.0468	0.9033		3,715.270 ₁	3,715.270 ₁	0.2102		3,719.684 ₁
Total	3.3137	4.8968	26.6657	0.0435	3.2143	0.0554	3.2697	0.8565	0.0513	0.9078		3,786.470₂	3,786.470₂	0.2116	1.3100e-003	3,791.317₉

	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
Percent Reduction	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	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	On-site and Off-site utilities and improvements	Site Preparation	7/1/2015	9/10/2015	5	51	
2	Grading, Foundations, and slab-on-grade	Grading	7/1/2015	8/12/2015	5	31	
3	Parking Lot Paving	Paving	7/1/2015	7/1/2015	5	1	
4	Structure & Framing	Building Construction	8/13/2015	9/25/2015	5	30	
5	Rough-ins, exterior skin, roofing	Building Construction	9/4/2015	12/17/2015	5	75	
6	Interior finishes	Architectural Coating	10/25/2015	5/22/2016	5	151	
7	Exterior hardscape & landscape	Building Construction	2/8/2016	3/26/2016	5	36	
8	Fixtures, Furnishings, & Equipment	Building Construction	3/27/2016	5/23/2016	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,980; Non-Residential Outdoor: 6,327 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
On-site and Off-site utilities and improvements	Graders	1	8.00	174	0.41
On-site and Off-site utilities and improvements	Pavers	1	8.00	125	0.42
On-site and Off-site utilities and improvements	Plate Compactors	1	8.00	8	0.43
On-site and Off-site utilities and improvements	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading, Foundations, and slab-on-grade	Graders	1	6.00	174	0.41
Grading, Foundations, and slab-on-grade	Plate Compactors	1	8.00	8	0.43
Grading, Foundations, and slab-on-grade	Scrapers	1	8.00	361	0.48
Structure & Framing	Cranes	1	6.00	226	0.29
Structure & Framing	Welders	3	8.00	46	0.45
Rough-ins, exterior skin, roofing	Cranes	1	6.00	226	0.29
Rough-ins, exterior skin, roofing	Other Construction Equipment	1	8.00	171	0.42
Exterior hardscape & landscape	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Exterior hardscape & landscape	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
On-site and Off-site utilities and improvements	4	8.00	0.00	50.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading, Foundations, and slab-on-grade	3	10.00	0.00	30.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Structure & Framing	4	16.00	0.00	30.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Rough-ins, exterior skin, roofing	2	14.00	0.00	75.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Interior finishes	0	30.00	0.00	150.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Exterior hardscape & landscape	2	12.00	0.00	35.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Fixtures, Furnishings, & Equipment	0	20.00	0.00	20.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Parking Lot Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 On-site and Off-site utilities and improvements - 2015

Unmitigated Construction On-Site

Category	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
lb/day																
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.9155	19.6779	10.5015	0.0144	1.1463	1.1463	1.1463	1.0554	1.0554	1.0554		1,492.7875	1,492.7875	0.4390		1,502.0054
Total	1.9155	19.6779	10.5015	0.0144	0.0000	1.1463	1.1463	0.0000	1.0554	1.0554		1,492.7875	1,492.7875	0.4390		1,502.0054

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0241	0.2529	0.3077	7.2000e-004	0.0169	4.2900e-003	0.0212	4.6300e-003	3.9500e-003	8.5800e-003		72.7405	72.7405	5.3000e-004		72.7517
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0409	0.0716	0.7251	1.1800e-003	0.1022	8.9000e-004	0.1031	0.0271	8.2000e-004	0.0279		101.6989	101.6989	7.0800e-003		101.8477
Total	0.0650	0.3245	1.0328	1.9000e-003	0.1191	5.1800e-003	0.1243	0.0317	4.7700e-003	0.0365		174.4394	174.4394	7.6100e-003		174.5993

3.2 On-site and Off-site utilities and improvements - 2015

Mitigated Construction On-Site

Category	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
lb/day																
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.9155	19.6779	10.5015	0.0144		1.1463	1.1463	1.0554	1.0554	1.0554	0.0000	1,492.7875	1,492.7875	0.4390		1,502.0054
Total	1.9155	19.6779	10.5015	0.0144	0.0000	1.1463	1.1463	1.0554	1.0554	1.0554	0.0000	1,492.7875	1,492.7875	0.4390		1,502.0054

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0241	0.2529	0.3077	7.2000e-004	0.0169	4.2900e-003	0.0212	4.6300e-003	3.9500e-003	8.5800e-003		72.7405	72.7405	5.3000e-004		72.7517
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0409	0.0716	0.7251	1.1800e-003	0.1022	8.9000e-004	0.1031	0.0271	8.2000e-004	0.0279	101.6989	101.6989	101.6989	7.0800e-003		101.8477
Total	0.0650	0.3245	1.0328	1.9000e-003	0.1191	5.1800e-003	0.1243	0.0317	4.7700e-003	0.0365		174.4394	174.4394	7.6100e-003		174.5993

3.3 Grading, Foundations, and slab-on-grade - 2015
Unmitigated Construction On-Site

Category	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
lb/day																
Fugitive Dust					0.0690	0.0000	0.0690	7.8500e-003	0.0000	7.8500e-003			0.0000			0.0000
Off-Road	2.2796	27.0011	15.5226	0.0201	1.2192	1.2192	1.2192	1.1225	1.1225	1.1225		2,091.8593	2,091.8593	0.6178		2,104.8330
Total	2.2796	27.0011	15.5226	0.0201	0.0690	1.2192	1.2882	7.8500e-003	1.1225	1.1303		2,091.8593	2,091.8593	0.6178		2,104.8330

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0238	0.2496	0.3038	7.1000e-004	0.0169	4.2400e-003	0.0212	4.6300e-003	3.9000e-003	8.5300e-003		71.8019	71.8019	5.2000e-004		71.8129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0895	0.9063	1.4800e-003	0.1277	1.1200e-003	0.1289	0.0339	1.0200e-003	0.0349		127.1236	127.1236	8.8600e-003		127.3096
Total	0.0749	0.3391	1.2101	2.1900e-003	0.1446	5.3600e-003	0.1500	0.0385	4.9200e-003	0.0434		198.9255	198.9255	9.3800e-003		199.1225

3.3 Grading, Foundations, and slab-on-grade - 2015

Mitigated Construction On-Site

Category	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
lb/day																
Fugitive Dust					0.0690	0.0000	0.0690	7.8500e-003	0.0000	7.8500e-003			0.0000			0.0000
Off-Road	2.2796	27.0011	15.5226	0.0201		1.2192	1.2192	1.1225	1.1225	1.1225	0.0000	2,091.8593	2,091.8593	0.6178		2,104.8330
Total	2.2796	27.0011	15.5226	0.0201	0.0690	1.2192	1.2882	7.8500e-003	1.1225	1.1303	0.0000	2,091.8593	2,091.8593	0.6178		2,104.8330

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0238	0.2496	0.3038	7.1000e-004	0.0169	4.2400e-003	0.0212	4.6300e-003	3.9000e-003	8.5300e-003		71.8019	71.8019	5.2000e-004		71.8129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0895	0.9063	1.4800e-003	0.1277	1.1200e-003	0.1289	0.0339	1.0200e-003	0.0349		127.1236	127.1236	8.8600e-003		127.3096
Total	0.0749	0.3391	1.2101	2.1900e-003	0.1446	5.3600e-003	0.1500	0.0385	4.9200e-003	0.0434		198.9255	198.9255	9.3800e-003		199.1225

3.4 Parking Lot Paving - 2015
Unmitigated Construction On-Site

Category	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
lb/day																
Paving	1.3100					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3100					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000

3.4 Parking Lot Paving - 2015
Mitigated Construction On-Site

Category	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
lb/day																
Paving	1.3100					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3100					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000

3.5 Structure & Framing - 2015
Unmitigated Construction On-Site

Category	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
	lb/day															
Off-Road	2.4351	12.2075	8.3921	0.0119		0.7726	0.7726		0.7485	0.7485		1,066.6993	1,066.6993	0.3013		1,073.0266
Total	2.4351	12.2075	8.3921	0.0119		0.7726	0.7726		0.7485	0.7485		1,066.6993	1,066.6993	0.3013		1,073.0266

Unmitigated Construction Off-Site

Category	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
	lb/day															
Hauling	0.0246	0.2580	0.3139	7.3000e-004	0.0167	4.3800e-003	0.0210	4.5900e-003	4.0300e-003	8.6100e-003		74.1953	74.1953	5.4000e-004		74.2067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0818	0.1432	1.4501	2.3700e-003	0.2044	1.7900e-003	0.2062	0.0542	1.6300e-003	0.0558		203.3978	203.3978	0.0142		203.6953
Total	0.1064	0.4011	1.7640	3.1000e-003	0.2210	6.1700e-003	0.2272	0.0588	5.6600e-003	0.0644		277.5931	277.5931	0.0147		277.9020

3.5 Structure & Framing - 2015
Mitigated Construction On-Site

Category	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
	lb/day															
Off-Road	2.4351	12.2075	8.3921	0.0119		0.7726	0.7726		0.7485	0.7485	0.0000	1,066.6993	1,066.6993	0.3013		1,073.0266
Total	2.4351	12.2075	8.3921	0.0119		0.7726	0.7726		0.7485	0.7485	0.0000	1,066.6993	1,066.6993	0.3013		1,073.0266

Mitigated Construction Off-Site

Category	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
	lb/day															
Hauling	0.0246	0.2580	0.3139	7.3000e-004	0.0167	4.3800e-003	0.0210	4.5900e-003	4.0300e-003	8.6100e-003		74.1953	74.1953	5.4000e-004		74.2067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0818	0.1432	1.4501	2.3700e-003	0.2044	1.7900e-003	0.2062	0.0542	1.6300e-003	0.0558		203.3978	203.3978	0.0142		203.6953
Total	0.1064	0.4011	1.7640	3.1000e-003	0.2210	6.1700e-003	0.2272	0.0588	5.6600e-003	0.0644		277.5931	277.5931	0.0147		277.9020

3.6 Rough-ins, exterior skin, roofing - 2015
Unmitigated Construction On-Site

Category	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
lb/day																
Off-Road	1.2624	14.4996	6.5840	0.0104		0.7151	0.7151		0.6579	0.6579		1,089.397 ₉	1,089.397 ₉	0.3252		1,096.227 ₈
Total	1.2624	14.4996	6.5840	0.0104		0.7151	0.7151		0.6579	0.6579		1,089.397₉	1,089.397₉	0.3252		1,096.227₈

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0246	0.2580	0.3139	7.3000e-004	0.0175	4.3800e-003	0.0219	4.7900e-003	4.0300e-003	8.8200e-003		74.1953	74.1953	5.4000e-004		74.2067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0716	0.1253	1.2689	2.0700e-003	0.1788	1.5600e-003	0.1804	0.0474	1.4300e-003	0.0489		177.9730	177.9730	0.0124		178.2334
Total	0.0962	0.3832	1.5827	2.8000e-003	0.1963	5.9400e-003	0.2022	0.0522	5.4600e-003	0.0577		252.1684	252.1684	0.0129		252.4401

3.6 Rough-ins, exterior skin, roofing - 2015
Mitigated Construction On-Site

Category	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
lb/day																
Off-Road	1.2624	14.4996	6.5840	0.0104		0.7151	0.7151		0.6579	0.6579	0.0000	1,089.397 ₉	1,089.397 ₉	0.3252		1,096.227 ₈
Total	1.2624	14.4996	6.5840	0.0104		0.7151	0.7151		0.6579	0.6579	0.0000	1,089.397₉	1,089.397₉	0.3252		1,096.227₈

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0246	0.2580	0.3139	7.3000e-004	0.0175	4.3800e-003	0.0219	4.7900e-003	4.0300e-003	8.8200e-003		74.1953	74.1953	5.4000e-004		74.2067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0716	0.1253	1.2689	2.0700e-003	0.1788	1.5600e-003	0.1804	0.0474	1.4300e-003	0.0489		177.9730	177.9730	0.0124		178.2334
Total	0.0962	0.3832	1.5827	2.8000e-003	0.1963	5.9400e-003	0.2022	0.0522	5.4600e-003	0.0577		252.1684	252.1684	0.0129		252.4401

3.7 Interior finishes - 2015
Unmitigated Construction On-Site

Category	lb/day																
	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	
Archit. Coating	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000

Unmitigated Construction Off-Site

Category	lb/day																
	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	
Hauling	0.0244	0.2563	0.3118	7.3000e-004	0.0447	4.3500e-003	0.0490	0.0115	4.0000e-003	0.0155		73.7040	73.7040	5.4000e-004			73.7153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.1534	0.2684	2.7190	4.4400e-003	0.3832	3.3500e-003	0.3865	0.1016	3.0600e-003	0.1047		381.3708	381.3708	0.0266			381.9287
Total	0.1778	0.5247	3.0308	5.1700e-003	0.4279	7.7000e-003	0.4356	0.1131	7.0600e-003	0.1202		455.0748	455.0748	0.0271			455.6439

3.7 Interior finishes - 2015

Mitigated Construction On-Site

Category	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
lb/day																
Archit. Coating	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0244	0.2563	0.3118	7.3000e-004	0.0447	4.3500e-003	0.0490	0.0115	4.0000e-003	0.0155		73.7040	73.7040	5.4000e-004		73.7153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1534	0.2684	2.7190	4.4400e-003	0.3832	3.3500e-003	0.3865	0.1016	3.0600e-003	0.1047		381.3708	381.3708	0.0266		381.9287
Total	0.1778	0.5247	3.0308	5.1700e-003	0.4279	7.7000e-003	0.4356	0.1131	7.0600e-003	0.1202		455.0748	455.0748	0.0271		455.6439

3.7 Interior finishes - 2016
Unmitigated Construction On-Site

Category	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
lb/day																
Archit. Coating	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9420					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0231	0.2171	0.3019	7.2000e-004	0.0239	3.8000e-003	0.0277	6.3500e-003	3.5000e-003	9.8500e-003		72.8515	72.8515	5.1000e-004		72.8622
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1339	0.2405	2.4355	4.4400e-003	0.3832	3.1600e-003	0.3864	0.1016	2.9000e-003	0.1045		367.7536	367.7536	0.0243		368.2643
Total	0.1570	0.4576	2.7375	5.1600e-003	0.4071	6.9600e-003	0.4140	0.1080	6.4000e-003	0.1144		440.6051	440.6051	0.0248		441.1265

3.7 Interior finishes - 2016

Mitigated Construction On-Site

Category	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
lb/day																
Archit. Coating	1.9420				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total	1.9420				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0231	0.2171	0.3019	7.2000e-004	0.0239	3.8000e-003	0.0277	6.3500e-003	3.5000e-003	9.8500e-003		72.8515	72.8515	5.1000e-004		72.8622
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1339	0.2405	2.4355	4.4400e-003	0.3832	3.1600e-003	0.3864	0.1016	2.9000e-003	0.1045		367.7536	367.7536	0.0243		368.2643
Total	0.1570	0.4576	2.7375	5.1600e-003	0.4071	6.9600e-003	0.4140	0.1080	6.4000e-003	0.1144		440.6051	440.6051	0.0248		441.1265

3.8 Exterior hardscape & landscape - 2016
Unmitigated Construction On-Site

Category	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
lb/day																
Off-Road	0.8113	7.3107	4.6231	5.7900e-003		0.5699	0.5699		0.5243	0.5243		602.4837	602.4837	0.1817		606.3001
Total	0.8113	7.3107	4.6231	5.7900e-003		0.5699	0.5699		0.5243	0.5243		602.4837	602.4837	0.1817		606.3001

Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0226	0.2125	0.2955	7.1000e-004	0.0174	3.7200e-003	0.0211	4.7500e-003	3.4200e-003	8.1700e-003		71.3000	71.3000	5.0000e-004		71.3105
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0962	0.9742	1.7700e-003	0.1533	1.2600e-003	0.1545	0.0407	1.1600e-003	0.0418		147.1014	147.1014	9.7300e-003		147.3057
Total	0.0762	0.3087	1.2697	2.4800e-003	0.1706	4.9800e-003	0.1756	0.0454	4.5800e-003	0.0500		218.4015	218.4015	0.0102		218.6162

3.8 Exterior hardscape & landscape - 2016

Mitigated Construction On-Site

Category	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
	lb/day															
Off-Road	0.8113	7.3107	4.6231	5.7900e-003		0.5699	0.5699		0.5243	0.5243	0.0000	602.4837	602.4837	0.1817		606.3001
Total	0.8113	7.3107	4.6231	5.7900e-003		0.5699	0.5699		0.5243	0.5243	0.0000	602.4837	602.4837	0.1817		606.3001

Mitigated Construction Off-Site

Category	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
	lb/day															
Hauling	0.0226	0.2125	0.2955	7.1000e-004	0.0174	3.7200e-003	0.0211	4.7500e-003	3.4200e-003	8.1700e-003		71.3000	71.3000	5.0000e-004		71.3105
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0962	0.9742	1.7700e-003	0.1533	1.2600e-003	0.1545	0.0407	1.1600e-003	0.0418		147.1014	147.1014	9.7300e-003		147.3057
Total	0.0762	0.3087	1.2697	2.4800e-003	0.1706	4.9800e-003	0.1756	0.0454	4.5800e-003	0.0500		218.4015	218.4015	0.0102		218.6162

3.9 Fixtures, Furnishings, & Equipment - 2016
Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0113	0.1066	0.1483	3.6000e-004	8.5200e-003	1.8700e-003	0.0104	2.3400e-003	1.7200e-003	4.0500e-003		35.7742	35.7742	2.5000e-004		35.7795
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0893	0.1603	1.6237	2.9600e-003	0.2555	2.1100e-003	0.2576	0.0678	1.9300e-003	0.0697		245.1691	245.1691	0.0162		245.5096
Total	0.1006	0.2669	1.7720	3.3200e-003	0.2640	3.9800e-003	0.2680	0.0701	3.6500e-003	0.0737		280.9433	280.9433	0.0165		281.2890

Mitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0113	0.1066	0.1483	3.6000e-004	8.5200e-003	1.8700e-003	0.0104	2.3400e-003	1.7200e-003	4.0500e-003		35.7742	35.7742	2.5000e-004		35.7795
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0893	0.1603	1.6237	2.9600e-003	0.2555	2.1100e-003	0.2576	0.0678	1.9300e-003	0.0697		245.1691	245.1691	0.0162		245.5096
Total	0.1006	0.2669	1.7720	3.3200e-003	0.2640	3.9800e-003	0.2680	0.0701	3.6500e-003	0.0737		280.9433	280.9433	0.0165		281.2890

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	lb/day															
	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
Mitigated	2.4960	4.8374	26.6122	0.0432	3.2143	0.0509	3.2652	0.8565	0.0468	0.9033	3,715,270	1	3,715,270	0.2102		3,719,684
Unmitigated	2.4960	4.8374	26.6122	0.0432	3.2143	0.0509	3.2652	0.8565	0.0468	0.9033	3,715,270	1	3,715,270	0.2102		3,719,684

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Library	703.00	581.88	318.63	1,368,130	1,368,130
Parking Lot	0.00	0.00	0.00		
Total	703.00	581.88	318.63	1,368,130	1,368,130

4.3 Trip Type Information

Land Use	Miles						Trip %						Trip Purpose %					
	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	H-S or C-C	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by					
Library	14.70	6.60	6.60	52.00	43.00	5.00	43.00	52.00	43.00	5.00	44	44	12					
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0					

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.486685	0.070911	0.172614	0.163811	0.062980	0.009896	0.005016	0.012126	0.001124	0.001040	0.007729	0.000709	0.005359

5.1 Fiber Optic Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	lb/day															
	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
NaturalGas Mitigated	6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259
NaturalGas Unmitigated	6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use kBTU/yr	lb/day										lb/day					
		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
Library	605.137	6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259

5.2 Energy by Land Use - NaturalGas

Mitigated

Land Use	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Library	0.605137	6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259
Total		6.5300e-003	0.0593	0.0498	3.6000e-004	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	4.5100e-003	71.1926	71.1926	71.1926	1.3600e-003	1.3100e-003	71.6259

6.0 Area Detail

6.1 Mitigation Measures Area

Category	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
Mitigated	0.8112	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005	0.0000	7.9500e-003
Unmitigated	0.8112	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005	0.0000	7.9500e-003

6.2 Area by SubCategory

Unmitigated

SubCategory	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
	lb/day															
Architectural Coating	0.0772				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7336				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003
Total	0.8112	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003

Mitigated

SubCategory	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
	lb/day															
Architectural Coating	0.0772				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7336				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003
Total	0.8112	3.0000e-005	3.5900e-003	0.0000	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	7.5000e-003	7.5000e-003	7.5000e-003	2.0000e-005		7.9500e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Quartz Hill
Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	12.50	1000sqft	1.25	12,500.00	0
Parking Lot	21.78	1000sqft	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization Rural Wind Speed (m/s) 2.2 Precipitation Freq (Days) 33
 Climate Zone 7 Operational Year 2016

Utility Company Los Angeles Department of Water & Power

CO2 Intensity (lb/MW/hr) 1227.89 CH4 Intensity (lb/MW/hr) 0.029 N2O Intensity (lb/MW/hr) 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.75 acre site per PD. 1.25 for building, 0.5 for parking.

Construction Phase - Construction schedule from applicant

Off-road Equipment - Exterior hard and landscape equip 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Fixtures - no equipment

Off-road Equipment - Grading equip assumed 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Interior Finishes - no equipment

Off-road Equipment - Utilities equip 8 hrs/day each piece unless Caleemod default is otherwise

Off-road Equipment - Rough-in equip 8 hrs/day each piece unless Caleemod default is otherwise. Plaster applicator shown as "other const equip".

Off-road Equipment - Structure equip 8 hrs/day each piece unless Caleemod default is otherwise

Trips and VMT - worker trips assumed each worker = 2 trips/day. All delivery and haul trucks assumed to be HHDT.

Grading - 2500 cy for "onsite" work, haul trucks activity based on applicant numbers

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	18980	18000
tblConstructionPhase	NumDays	10.00	151.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	200.00	75.00
tblConstructionPhase	NumDays	200.00	36.00
tblConstructionPhase	NumDays	200.00	41.00
tblConstructionPhase	NumDays	4.00	31.00
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	51.00
tblConstructionPhase	PhaseEndDate	7/15/2016	5/22/2016
tblConstructionPhase	PhaseEndDate	8/12/2015	9/25/2015
tblConstructionPhase	PhaseEndDate	1/8/2016	12/17/2015
tblConstructionPhase	PhaseEndDate	7/11/2016	3/26/2016

tblConstructionPhase	PhaseEndDate	10/23/2015	8/12/2015
tblConstructionPhase	PhaseEndDate	8/13/2015	7/1/2015
tblConstructionPhase	PhaseEndDate	9/9/2015	9/10/2015
tblConstructionPhase	PhaseStartDate	12/18/2015	10/25/2015
tblConstructionPhase	PhaseStartDate	7/2/2015	8/13/2015
tblConstructionPhase	PhaseStartDate	9/26/2015	9/4/2015
tblConstructionPhase	PhaseStartDate	5/23/2016	2/8/2016
tblConstructionPhase	PhaseStartDate	9/11/2015	7/1/2015
tblConstructionPhase	PhaseStartDate	8/13/2015	7/1/2015
tblGrading	AcresOfGrading	42.63	1.75
tblGrading	AcresOfGrading	25.50	0.00
tblGrading	MaterialExported	0.00	2,500.00
tblLandUse	LotAcreage	0.29	1.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	11.51	11.05
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	313.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	75.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	35.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	6.00	0.00
tblTripsAndVMT	VendorTripNumber	6.00	0.00

tblTripsAndVMT	VendorTripNumber	6.00	0.00
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	WorkerTripNumber	10.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	10.00
tblTripsAndVMT	WorkerTripNumber	14.00	16.00
tblTripsAndVMT	WorkerTripNumber	14.00	12.00
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblTripsAndVMT	WorkerVehicleClass		LD_Mix
tblWater	IndoorWaterUseRate	391,111.35	375,466.90
tblWater	OutdoorWaterUseRate	611,738.27	587,268.74

2.0 Emissions Summary

2.2 Overall Operational
Unmitigated Operational

Category	tons/yr										MT/yr						
	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	
Area	0.1480	0.0000	3.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	0.0000	6.5000e-004
Energy	1.1900e-003	0.0108	9.0900e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	40.8414	40.8414	9.1000e-004	3.6000e-004		40.9716
Mobile	0.3980	0.8159	4.6353	7.2300e-003	0.5147	8.2900e-003	0.5230	0.1374	7.6100e-003	0.1450	0.0000	563.6174	563.6174	0.0311	0.0000		564.2704
Waste						0.0000	0.0000		0.0000	0.0000	2.2431	0.0000	2.2431	0.1326	0.0000		5.0268
Water						0.0000	0.0000		0.0000	0.0000	0.1191	6.3569	6.4760	0.0124	3.2000e-004		6.8353
Total	0.5472	0.8267	4.6447	7.2900e-003	0.5147	9.1100e-003	0.5238	0.1374	8.4300e-003	0.1458	2.3622	610.8163	613.1785	0.1770	6.8000e-004		617.1047

2.2 Overall Operational

Mitigated Operational

Category	tons/yr										MT/yr						
	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	
Area	0.1480	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	0.0000	6.5000e-004
Energy	1.1900e-003	0.0108	9.0900e-003	6.0000e-005	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	40.8414	40.8414	9.1000e-004	3.6000e-004	0.0000	40.9716
Mobile	0.3980	0.8159	4.6353	7.2300e-003	0.5147	8.2900e-003	0.5230	0.1374	7.6100e-003	0.1450	0.0000	563.6174	563.6174	0.0311	0.0000	0.0000	564.2704
Waste						0.0000	0.0000	0.0000	0.0000	0.0000	2.2431	2.2431	2.2431	0.1326	0.0000	0.0000	5.0288
Water						0.0000	0.0000	0.0000	0.0000	0.0000	0.1191	6.3569	6.4760	0.0124	3.2000e-004	0.0000	6.8351
Total	0.5472	0.8267	4.6447	7.2900e-003	0.5147	9.1100e-003	0.5238	0.1374	8.4300e-003	0.1458	2.3622	610.8163	613.1785	0.1770	6.8000e-004	0.0000	617.1045

Percent Reduction	Construction Phase										Construction Phase					
	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
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	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	On-site and Off-site utilities and improvements	Site Preparation	7/1/2015	9/10/2015	5	51	
2	Grading, Foundations, and slab-on-grade	Grading	7/1/2015	8/12/2015	5	31	
3	Parking Lot Paving	Paving	7/1/2015	7/1/2015	5	1	
4	Structure & Framing	Building Construction	8/13/2015	9/25/2015	5	30	
5	Rough-ins, exterior skin, roofing	Building Construction	9/4/2015	12/17/2015	5	75	
6	Interior finishes	Architectural Coating	10/25/2015	5/22/2016	5	151	
7	Exterior hardscape & landscape	Building Construction	2/8/2016	3/26/2016	5	36	
8	Fixtures, Furnishings, & Equipment	Building Construction	3/27/2016	5/23/2016	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,980; Non-Residential Outdoor: 6,327 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
On-site and Off-site utilities and improvements	Graders	1	8.00	174	0.41
On-site and Off-site utilities and improvements	Pavers	1	8.00	125	0.42
On-site and Off-site utilities and improvements	Plate Compactors	1	8.00	8	0.43
On-site and Off-site utilities and improvements	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading, Foundations, and slab-on-grade	Graders	1	6.00	174	0.41
Grading, Foundations, and slab-on-grade	Plate Compactors	1	8.00	8	0.43
Grading, Foundations, and slab-on-grade	Scrapers	1	8.00	361	0.48
Structure & Framing	Cranes	1	6.00	226	0.29
Structure & Framing	Welders	3	8.00	46	0.45
Rough-ins, exterior skin, roofing	Cranes	1	6.00	226	0.29
Rough-ins, exterior skin, roofing	Other Construction Equipment	1	8.00	171	0.42
Exterior hardscape & landscape	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Exterior hardscape & landscape	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
On-site and Off-site utilities and improvements	4	8.00	0.00	50.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading, Foundations, and slab-on-grade	3	10.00	0.00	30.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Structure & Framing	4	16.00	0.00	30.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Rough-ins, exterior skin, roofing	2	14.00	0.00	75.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Interior finishes	0	30.00	0.00	150.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Exterior hardscape & landscape	2	12.00	0.00	35.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Fixtures, Furnishings, & Equipment	0	20.00	0.00	20.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Parking Lot Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 On-site and Off-site utilities and improvements - 2015

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	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
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5116	0.2730	3.7000e-004	0.0298	0.0298	0.0298	0.0274	0.0274	0.0274	0.0000	35.2101	35.2101	0.0104	0.0000	35.4275
Total	0.0498	0.5116	0.2730	3.7000e-004	0.0000	0.0298	0.0298	0.0274	0.0274	0.0274	0.0000	35.2101	35.2101	0.0104	0.0000	35.4275

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	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
Hauling	6.4000e-004	6.6800e-003	8.5300e-003	2.0000e-005	4.3000e-004	1.1000e-004	5.4000e-004	1.2000e-004	1.0000e-004	2.2000e-004	0.0000	1.7181	1.7181	1.0000e-005	0.0000	1.7184
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	1.9700e-003	0.0203	3.0000e-005	2.6000e-003	2.0000e-005	2.6300e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.4731	2.4731	1.7000e-004	0.0000	2.4766
Total	1.6900e-003	8.6500e-003	0.0288	5.0000e-005	3.0300e-003	1.3000e-004	3.1700e-003	8.1000e-004	1.2000e-004	9.3000e-004	0.0000	4.1912	4.1912	1.8000e-004	0.0000	4.1949

3.2 On-site and Off-site utilities and improvements - 2015

Mitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5116	0.2730	3.7000e-004	0.0298	0.0298	0.0298	0.0274	0.0274	0.0274	0.0000	35.2100	35.2100	0.0104	0.0000	35.4275
Total	0.0498	0.5116	0.2730	3.7000e-004	0.0000	0.0298	0.0298	0.0274	0.0274	0.0274	0.0000	35.2100	35.2100	0.0104	0.0000	35.4275

Mitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	6.4000e-004	6.6800e-003	8.5300e-003	2.0000e-005	4.3000e-004	1.1000e-004	5.4000e-004	1.2000e-004	1.0000e-004	2.2000e-004	0.0000	1.7181	1.7181	1.0000e-005	0.0000	1.7184
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	1.9700e-003	0.0203	3.0000e-005	2.6000e-003	2.0000e-005	2.6300e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.4731	2.4731	1.7000e-004	0.0000	2.4766
Total	1.6900e-003	8.6500e-003	0.0288	5.0000e-005	3.0300e-003	1.3000e-004	3.1700e-003	8.1000e-004	1.2000e-004	9.3000e-004	0.0000	4.1912	4.1912	1.8000e-004	0.0000	4.1949

3.3 Grading, Foundations, and slab-on-grade - 2015
Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Fugitive Dust					1.0700e-003	0.0000	1.0700e-003	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.4185	0.2406	3.1000e-004		0.0189	0.0189	0.0174	0.0174	0.0174	0.0000	29.4144	29.4144	8.6900e-003	0.0000	29.5968
Total	0.0353	0.4185	0.2406	3.1000e-004	1.0700e-003	0.0189	0.0200	0.0174	0.0174	0.0175	0.0000	29.4144	29.4144	8.6900e-003	0.0000	29.5968

Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	3.8000e-004	3.9300e-003	5.0200e-003	1.0000e-005	2.6000e-004	7.0000e-005	3.2000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0110	1.0110	1.0000e-005	0.0000	1.0112
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	1.4700e-003	0.0151	2.0000e-005	1.9400e-003	2.0000e-005	1.9600e-003	2.0000e-005	2.0000e-005	5.3000e-004	0.0000	1.8429	1.8429	1.2000e-004	0.0000	1.8455
Total	1.1600e-003	5.4000e-003	0.0201	3.0000e-005	2.2000e-003	9.0000e-005	2.2800e-003	5.9000e-004	8.0000e-005	6.6000e-004	0.0000	2.8539	2.8539	1.3000e-004	0.0000	2.8567

3.3 Grading, Foundations, and slab-on-grade - 2015

Mitigated Construction On-Site

Category	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
	tons/yr															
	MT/yr															
Fugitive Dust					1.0700e-003	0.0000	1.0700e-003	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.4185	0.2406	3.1000e-004		0.0189	0.0189	0.0174	0.0174	0.0174	0.0000	29.4144	29.4144	8.6900e-003	0.0000	29.5968
Total	0.0353	0.4185	0.2406	3.1000e-004	1.0700e-003	0.0189	0.0200	1.2000e-004	0.0174	0.0175	0.0000	29.4144	29.4144	8.6900e-003	0.0000	29.5968

Mitigated Construction Off-Site

Category	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
	tons/yr															
	MT/yr															
Hauling	3.8000e-004	3.9300e-003	5.0200e-003	1.0000e-005	2.6000e-004	7.0000e-005	3.2000e-004	7.0000e-005	6.0000e-005	1.3000e-004	0.0000	1.0110	1.0110	1.0000e-005	0.0000	1.0112
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	1.4700e-003	0.0151	2.0000e-005	1.9400e-003	2.0000e-005	1.9600e-003	5.2000e-004	2.0000e-005	5.3000e-004	0.0000	1.8429	1.8429	1.2000e-004	0.0000	1.8455
Total	1.1600e-003	5.4000e-003	0.0201	3.0000e-005	2.2000e-003	9.0000e-005	2.2800e-003	5.9000e-004	8.0000e-005	6.6000e-004	0.0000	2.8539	2.8539	1.3000e-004	0.0000	2.8567

3.5 Structure & Framing - 2015
Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	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
Off-Road	0.0390	0.1953	0.1343	1.9000e-004		0.0124	0.0124		0.0120	0.0120	0.0000	15.4831	15.4831	4.3700e-003	0.0000	15.5749
Total	0.0390	0.1953	0.1343	1.9000e-004		0.0124	0.0124		0.0120	0.0120	0.0000	15.4831	15.4831	4.3700e-003	0.0000	15.5749

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	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
Hauling	4.6000e-004	4.1900e-003	5.3500e-003	1.0000e-005	2.6000e-004	7.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.0785	1.0785	1.0000e-005	0.0000	1.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	2.4300e-003	0.0250	4.0000e-005	3.2100e-003	3.0000e-005	3.2300e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.0438	3.0438	2.1000e-004	0.0000	3.0481
Total	1.6900e-003	6.6200e-003	0.0303	5.0000e-005	3.4700e-003	1.0000e-004	3.5600e-003	9.2000e-004	9.0000e-005	1.0200e-003	0.0000	4.1222	4.1222	2.2000e-004	0.0000	4.1267

3.5 Structure & Framing - 2015
Mitigated Construction On-Site

Category	tons/yr										MT/yr				CO ₂ e	
	ROG	NOx	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	PM ₁₀ Total	Fugitive PM _{2.5}	Exhaust PM _{2.5}	PM _{2.5} Total	Bio- CO ₂	NBio- CO ₂	Total CO ₂	CH ₄		N ₂ O
Off-Road	0.0390	0.1953	0.1343	1.9000e-004		0.0124	0.0124		0.0120	0.0120	0.0000	15.4831	15.4831	4.3700e-003	0.0000	15.5749
Total	0.0390	0.1953	0.1343	1.9000e-004		0.0124	0.0124		0.0120	0.0120	0.0000	15.4831	15.4831	4.3700e-003	0.0000	15.5749

Mitigated Construction Off-Site

Category	tons/yr										MT/yr				CO ₂ e	
	ROG	NOx	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	PM ₁₀ Total	Fugitive PM _{2.5}	Exhaust PM _{2.5}	PM _{2.5} Total	Bio- CO ₂	NBio- CO ₂	Total CO ₂	CH ₄		N ₂ O
Hauling	4.6000e-004	4.1900e-003	5.3500e-003	1.0000e-005	2.6000e-004	7.0000e-005	3.3000e-004	7.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.0785	1.0785	1.0000e-005	0.0000	1.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2900e-003	2.4300e-003	0.0250	4.0000e-005	3.2100e-003	3.0000e-005	3.2300e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.0438	3.0438	2.1000e-004	0.0000	3.0481
Total	1.6900e-003	6.6200e-003	0.0303	5.0000e-005	3.4700e-003	1.0000e-004	3.5600e-003	9.2000e-004	9.0000e-005	1.0200e-003	0.0000	4.1222	4.1222	2.2000e-004	0.0000	4.1267

3.6 Rough-ins, exterior skin, roofing - 2015
Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Off-Road	0.0473	0.5437	0.2469	3.9000e-004		0.0268	0.0268		0.0247	0.0247	0.0000	37.0607	37.0607	0.0111	0.0000	37.2930
Total	0.0473	0.5437	0.2469	3.9000e-004		0.0268	0.0268		0.0247	0.0247	0.0000	37.0607	37.0607	0.0111	0.0000	37.2930

Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	9.4000e-004	9.8200e-003	0.0125	3.0000e-005	6.4000e-004	1.6000e-004	8.1000e-004	1.8000e-004	1.5000e-004	3.3000e-004	0.0000	2.5276	2.5276	2.0000e-005	0.0000	2.5280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	4.9800e-003	0.0512	8.0000e-005	6.5700e-003	6.0000e-005	6.6300e-003	1.7500e-003	5.0000e-005	1.8000e-003	0.0000	6.2421	6.2421	4.2000e-004	0.0000	6.2510
Total	3.5900e-003	0.0148	0.0637	1.1000e-004	7.2100e-003	2.2000e-004	7.4400e-003	1.9300e-003	2.0000e-004	2.1300e-003	0.0000	8.7697	8.7697	4.4000e-004	0.0000	8.7789

3.6 Rough-ins, exterior skin, roofing - 2015
Mitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Off-Road	0.0473	0.5437	0.2469	3.9000e-004		0.0268	0.0268	0.0247	0.0247	0.0247	0.0000	37.0607	37.0607	0.0111	0.0000	37.2930
Total	0.0473	0.5437	0.2469	3.9000e-004		0.0268	0.0268	0.0247	0.0247	0.0247	0.0000	37.0607	37.0607	0.0111	0.0000	37.2930

Mitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	9.4000e-004	9.8200e-003	0.0125	3.0000e-005	6.4000e-004	1.6000e-004	8.1000e-004	1.8000e-004	1.5000e-004	3.3000e-004	0.0000	2.5276	2.5276	2.0000e-005	0.0000	2.5280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	4.9800e-003	0.0512	8.0000e-005	6.5700e-003	6.0000e-005	6.6300e-003	1.7500e-003	5.0000e-005	1.8000e-003	0.0000	6.2421	6.2421	4.2000e-004	0.0000	6.2510
Total	3.5900e-003	0.0148	0.0637	1.1000e-004	7.2100e-003	2.2000e-004	7.4400e-003	1.9300e-003	2.0000e-004	2.1300e-003	0.0000	8.7697	8.7697	4.4000e-004	0.0000	8.7789

3.7 Interior finishes - 2015
Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Archit. Coating	0.0476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	6.1000e-004	6.3800e-003	8.1400e-003	2.0000e-005	1.0700e-003	1.1000e-004	1.1800e-003	2.8000e-004	1.0000e-004	3.7000e-004	0.0000	1.6404	1.6404	1.0000e-005	0.0000	1.6407
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	6.9700e-003	0.0716	1.1000e-004	9.2000e-003	8.0000e-005	9.2900e-003	2.4400e-003	7.0000e-005	2.5200e-003	0.0000	8.7389	8.7389	5.9000e-004	0.0000	8.7513
Total	4.3200e-003	0.0134	0.0798	1.3000e-004	0.0103	1.9000e-004	0.0105	2.7200e-003	1.7000e-004	2.8900e-003	0.0000	10.3794	10.3794	6.0000e-004	0.0000	10.3920

3.7 Interior finishes - 2015
Mitigated Construction On-Site

Category	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
	tons/yr															
	MT/yr															
Archit. Coating	0.0476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

Category	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
	tons/yr															
	MT/yr															
Hauling	6.1000e-004	6.3800e-003	8.1400e-003	2.0000e-005	1.0700e-003	1.1000e-004	1.1800e-003	2.8000e-004	1.0000e-004	3.7000e-004	0.0000	1.6404	1.6404	1.0000e-005	0.0000	1.6407
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	6.9700e-003	0.0716	1.1000e-004	9.2000e-003	8.0000e-005	9.2900e-003	2.4400e-003	7.0000e-005	2.5200e-003	0.0000	8.7389	8.7389	5.9000e-004	0.0000	8.7513
Total	4.3200e-003	0.0134	0.0798	1.3000e-004	0.0103	1.9000e-004	0.0105	2.7200e-003	1.7000e-004	2.8900e-003	0.0000	10.3794	10.3794	6.0000e-004	0.0000	10.3920

3.7 Interior finishes - 2016
Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Archit. Coating	0.0981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	1.1800e-003	0.0111	0.0162	4.0000e-005	1.1800e-003	1.9000e-004	1.3700e-003	3.2000e-004	1.8000e-004	4.9000e-004	0.0000	3.3422	3.3422	2.0000e-005	0.0000	3.3427
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6600e-003	0.0129	0.1322	2.3000e-004	0.0190	1.6000e-004	0.0191	5.0400e-003	1.5000e-004	5.1800e-003	0.0000	17.3707	17.3707	1.1100e-003	0.0000	17.3941
Total	7.8400e-003	0.0240	0.1485	2.7000e-004	0.0202	3.5000e-004	0.0205	5.3600e-003	3.3000e-004	5.6700e-003	0.0000	20.7129	20.7129	1.1300e-003	0.0000	20.7367

3.7 Interior finishes - 2016
Mitigated Construction On-Site

Category	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
tons/yr																
Archit. Coating	0.0981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0981					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction Off-Site

Category	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
tons/yr																
Hauling	1.1800e-003	0.0111	0.0162	4.0000e-005	1.1800e-003	1.9000e-004	1.3700e-003	3.2000e-004	1.8000e-004	4.9000e-004	0.0000	3.3422	3.3422	2.0000e-005	0.0000	3.3427
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6600e-003	0.0129	0.1322	2.3000e-004	0.0190	1.6000e-004	0.0191	5.0400e-003	1.5000e-004	5.1800e-003	0.0000	17.3707	17.3707	1.1100e-003	0.0000	17.3941
Total	7.8400e-003	0.0240	0.1485	2.7000e-004	0.0202	3.5000e-004	0.0205	5.3600e-003	3.3000e-004	5.6700e-003	0.0000	20.7129	20.7129	1.1300e-003	0.0000	20.7367

3.8 Exterior hardscape & landscape - 2016
Unmitigated Construction On-Site

Category	tons/yr											MT/yr				CO2e
	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	
Off-Road	0.0142	0.1279	0.0809	1.0000e-004	9.9700e-003	9.9700e-003	9.9700e-003	9.1700e-003	9.1700e-003	9.1700e-003	0.0000	9.5649	9.5649	2.8900e-003	0.0000	9.6255
Total	0.0142	0.1279	0.0809	1.0000e-004	9.9700e-003	9.9700e-003	9.9700e-003	9.1700e-003	9.1700e-003	9.1700e-003	0.0000	9.5649	9.5649	2.8900e-003	0.0000	9.6255

Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				CO2e
	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	
Hauling	4.0000e-004	3.7800e-003	5.5100e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1335	1.1335	1.0000e-005	0.0000	1.1337
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.7800e-003	0.0183	3.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4078	2.4078	1.5000e-004	0.0000	2.4111
Total	1.3200e-003	5.5600e-003	0.0238	4.0000e-005	2.9300e-003	9.0000e-005	3.0100e-003	7.8000e-004	8.0000e-005	8.6000e-004	0.0000	3.5413	3.5413	1.6000e-004	0.0000	3.5448

3.8 Exterior hardscape & landscape - 2016
Mitigated Construction On-Site

Category	tons/yr											MT/yr				
	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
Off-Road	0.0142	0.1279	0.0809	1.0000e-004	9.9700e-003	9.9700e-003	9.9700e-003	9.1700e-003	9.1700e-003	9.1700e-003	0.0000	9.5649	9.5649	2.8900e-003	0.0000	9.6255
Total	0.0142	0.1279	0.0809	1.0000e-004	9.9700e-003	9.9700e-003	9.9700e-003	9.1700e-003	9.1700e-003	9.1700e-003	0.0000	9.5649	9.5649	2.8900e-003	0.0000	9.6255

Mitigated Construction Off-Site

Category	tons/yr											MT/yr				
	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
Hauling	4.3000e-004	3.7800e-003	5.5100e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1335	1.1335	1.0000e-005	0.0000	1.1337
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.7800e-003	0.0183	3.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4078	2.4078	1.5000e-004	0.0000	2.4111
Total	1.3200e-003	5.5600e-003	0.0238	4.0000e-005	2.9300e-003	9.0000e-005	3.0100e-003	7.8000e-004	8.0000e-005	8.6000e-004	0.0000	3.5413	3.5413	1.6000e-004	0.0000	3.5448

3.9 Fixtures, Furnishings, & Equipment - 2016
Unmitigated Construction Off-Site

Category	tons/yr											MT/yr				CO2e
	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	
Hauling	2.4000e-004	2.2200e-003	3.2400e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	4.0000e-005	8.0000e-005	0.0000	0.6662	0.6662	0.0000	0.0000	0.6663
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	3.4800e-003	0.0358	6.0000e-005	5.1300e-003	4.0000e-005	5.1800e-003	1.3600e-003	4.0000e-005	1.4000e-003	0.0000	4.7010	4.7010	3.0000e-004	0.0000	4.7073
Total	2.0400e-003	5.7000e-003	0.0390	7.0000e-005	5.3000e-003	8.0000e-005	5.3900e-003	1.4100e-003	8.0000e-005	1.4800e-003	0.0000	5.3672	5.3672	3.0000e-004	0.0000	5.3736

Mitigated Construction Off-Site

Category	tons/yr											MT/yr				CO2e
	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	
Hauling	2.4000e-004	2.2200e-003	3.2400e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	4.0000e-005	8.0000e-005	0.0000	0.6662	0.6662	0.0000	0.0000	0.6663
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	3.4800e-003	0.0358	6.0000e-005	5.1300e-003	4.0000e-005	5.1800e-003	1.3600e-003	4.0000e-005	1.4000e-003	0.0000	4.7010	4.7010	3.0000e-004	0.0000	4.7073
Total	2.0400e-003	5.7000e-003	0.0390	7.0000e-005	5.3000e-003	8.0000e-005	5.3900e-003	1.4100e-003	8.0000e-005	1.4800e-003	0.0000	5.3672	5.3672	3.0000e-004	0.0000	5.3736

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	tons/yr											MT/yr				
	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
Mitigated	0.3980	0.8159	4.6353	7.2300e-003	0.5147	8.2900e-003	0.5230	0.1374	7.6100e-003	0.1450	0.0000	563.6174	563.6174	0.0311	0.0000	564.2704
Unmitigated	0.3980	0.8159	4.6353	7.2300e-003	0.5147	8.2900e-003	0.5230	0.1374	7.6100e-003	0.1450	0.0000	563.6174	563.6174	0.0311	0.0000	564.2704

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Library	703.00	581.88	318.63	1,368,130	1,368,130
Parking Lot	0.00	0.00	0.00		
Total	703.00	581.88	318.63	1,368,130	1,368,130

4.3 Trip Type Information

Land Use	Miles						Trip %						Trip Purpose %					
	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	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	Primary	Diverted	Pass-by			
Library	14.70	6.60	6.60	52.00	43.00	5.00	52.00	43.00	5.00	44	44	12	44	44	12			
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0			

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.486685	0.070911	0.172614	0.163811	0.062980	0.009896	0.005016	0.012126	0.001124	0.001040	0.007729	0.000709	0.005359

5.1 Fiber Optic Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	tons/yr										MT/yr					
	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
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	29.0547	29.0547	6.9000e-004	1.4000e-004	29.1131
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	29.0547	29.0547	6.9000e-004	1.4000e-004	29.1131
Natural Gas Mitigated	1.1900e-003	0.0108	9.0900e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585
Natural Gas Unmitigated	1.1900e-003	0.0108	9.0900e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use kBTU/yr	tons/yr										MT/yr					
		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
Library	220875	1.1900e-003	0.0108	9.0900e-003	6.0000e-005	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.1900e-003	0.0108	9.0900e-003	6.0000e-005	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585

Mitigated

Land Use	NaturalGas Use kBTU/yr	tons/yr										MT/yr					
		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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Library	220875	1.1900e-003	0.0108	9.0900e-003	6.0000e-005	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585
Total		1.1900e-003	0.0108	9.0900e-003	6.0000e-005	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	8.2000e-004	0.0000	11.7867	11.7867	2.3000e-004	2.2000e-004	11.8585

5.3 Energy by Land Use - Electricity

Unmitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Library	33000	18.3797	4.3000e-004	9.0000e-005	18.4167
Parking Lot	19166.4	10.6750	2.5000e-004	5.0000e-005	10.6964
Total		29.0547	6.8000e-004	1.4000e-004	29.1131

Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
Library	33000	18.3797	4.3000e-004	9.0000e-005	18.4167
Parking Lot	19166.4	10.6750	2.5000e-004	5.0000e-005	10.6964
Total		29.0547	6.8000e-004	1.4000e-004	29.1131

6.0 Area Detail

6.1 Mitigation Measures Area

Category	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	
	MT/yr																
Mitigated	0.1480	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	0.0000	6.5000e-004
Unmitigated	0.1480	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	0.0000	6.5000e-004

6.2 Area by SubCategory

Unmitigated

SubCategory	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
	tons/yr															
Architectural Coating	0.0141					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	6.5000e-004
Total	0.1480	0.0000	3.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.1000e-004	6.1000e-004	0.0000	0.0000	6.5000e-004

6.2 Area by SubCategory

Mitigated

SubCategory	tons/yr											MT/yr				
	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
Architectural Coating	0.0141					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	6.1000e-004	6.1000e-004	6.1000e-004	0.0000	0.0000	6.5000e-004
Total	0.1480	0.0000	3.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	6.1000e-004	6.1000e-004	6.1000e-004	0.0000	0.0000	6.5000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Category	MT/yr					CO2e
	Total CO2	CH4	N2O			
Mitigated	6.4760	0.0124	3.2000e-004			6.8351
Unmitigated	6.4760	0.0124	3.2000e-004			6.8353

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Library	0.375467 / 0.587269	6.4760	0.0124	3.2000e-004	6.8353
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		6.4760	0.0124	3.2000e-004	6.8353

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Library	0.375467 / 0.587269	6.4760	0.0124	3.2000e-004	6.8351
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		6.4760	0.0124	3.2000e-004	6.8351

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.2431	0.1326	0.0000	5.0268
Unmitigated	2.2431	0.1326	0.0000	5.0268

8.2 Waste by Land Use

Unmitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Library	11.05	2.2431	0.1326	0.0000	5.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		2.2431	0.1326	0.0000	5.0268

8.2 Waste by Land Use

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Library	11.05	2.2431	0.1326	0.0000	5.0268
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		2.2431	0.1326	0.0000	5.0268

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Appendix B
Biological Resources

Appendix B-1: Site Representative Photographs

	<p>Photo 1</p> <p>Date: 08/01/14</p> <p>Direction: North</p> <p>Comment: Photo of elm tree overhanging eastern boundary of project site.</p>
	<p>Photo 2</p> <p>Date: 08/01/14</p> <p>Direction: East</p> <p>Comment: Photo of southwest corner of project site.</p>



Photo 3

Date: 08/01/14

Direction:
Northwest

Comment: Photo of
pistachio trees on
project site.



Photo 4

Date: 08/01/14

Direction: East

Comment: Photo of
southern boundary
of project site.



Photo 5

Date: 08/01/14

Direction: Northeast

Comment: Photo of debris pile on project site.



Photo 6

Date: 08/01/14

Direction: West

Comment: Photo of northern portion of project site.



Photo 7

Date: 08/01/14

Direction: East

Comment: Photo of northern portion of project site along West Avenue M-2.



Photo 8

Date: 08/01/14

Direction: West

Comment: Photo of northern portion of project site along West Avenue M-2.



Photo 9

Date: 08/01/14

Direction: South

Comment: Photo of residential area and driveway through the project site.



Photo 10

Date: 08/01/14

Direction: South

Comment: Photo taken from West Avenue M-2 of entire project site.

Appendix B-2. Special-Status Species Potential to Occur

Special Status Plants	Life Form and Habitat	Flower Season	Conservation Status	Occurrence Probability	Comments
<i>Androsace elongate</i> spp. <i>acuta</i> California androsace	Annual herb; Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland	March- June	4.2	Less than reasonable	Study area lacks suitable habitat.
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	Annual herb; Lake margins (alkaline), meadows and seeps, and playa	May- October	1B.1	Less than reasonable	Study area lacks suitable habitat.
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	Perennial herb; Chenopod scrub	March-May	1B.1	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Calochortus catalinae</i> Catalina mariposa lily	Perennial bulbiferous herb; Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	February- June	4.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Calochortus clavatus</i> var. <i>gracilis</i> Slender mariposa lily	Perennial bulbiferous herb; Chaparral, coastal scrub, valley and foothill grassland	March-June	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Calochortus striatus</i> Alkali mariposa lily	Perennial bulbiferous herb; Chaparral, chenopod scrub, Mojavean desert scrub, meadows and seeps/alkaline, mesic	April-June	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Calystegia peirsonii</i> Peirson's morning-glory	Perennial rhizomatous herb; Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland	April-June	4.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Canbya candida</i> White pygmy-poppy	Annual herb; gravelly, sandy, granitic. Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland	March-June	4.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Castilleja plagiotoma</i> Mojave paintbrush	Perennial herb (hemiparasitic); Great basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland	April-June	4.3	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development.

Special Status Plants	Life Form and Habitat	Flower Season	Conservation Status	Occurrence Probability	Comments
					Lacks suitable habitat.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Annual herb; Chaparral, coastal scrub/sandy or rocky openings.	April-June	1B.1	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Chorizanthe spinosa</i> Mojave spineflower	Annual herb; sometimes alkaline; Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, playas	March- July	4.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> White-bracted spineflower	Annual herb; Mojavean desert scrub, Pinyon and juniper woodland.	April-June	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Cryptantha clokeyi</i> Clokey's cryptantha	Annual herb; Mojavean desert scrub	April	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Cymopterus deserticola</i> Desert cymopterus	Perennial herb; Joshua tree woodland, Mojavean desert scrub	March-May	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Eriastrum rosamondense</i> Rosamond eriastrum	Annual herb; Chenopod scrub, Mojavean desert scrub, and playas	April-May	1B.1	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	Annual herb; Chenopod scrub, Mojavean desert scrub, playas	March-May	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Goodmania luteola</i> Golden goodmania	Annual herb. Found in alkaline or clay soil in Mojavean desert scrub, meadows and seeps, and playas.	April-August	4.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.

Special Status Plants	Life Form and Habitat	Flower Season	Conservation Status	Occurrence Probability	Comments
<i>Layia heterotricha</i> Pale-yellow layia	Annual herb; Cismontane woodland, pinyon and juniper woodland, valley and foothill grassland/alkaline or clay soil	March-June	1B.1	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> Sagebrush loeflingia	Annual herb; Desert dunes, Great Basin scrub, and Sonoran desert scrub/sandy soil	April-May	2B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Opuntia basilaris</i> var. <i>brachyclada</i> Short-joint beavertail	Perennial stem succulent; Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland.	April- June	1B.2	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.
<i>Perideridia pringlei</i> Adobe yampah	Perennial herb; serpentinite, often clay. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland.	April-July	4.3	Less than reasonable	Study area has heavily disturbed soils and is surrounded by development. Lacks suitable habitat.

Special Status Wildlife	Habitat and Distribution	Status	Occurrence Probability	Comments
Reptiles				
<i>Emys marmorata</i> Western pond turtle	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 ft elev. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.	Fed: none State: CSC	Confirmed absent	Study area lacks body of water.
<i>Anniella pulchra pulchra</i> silvery legless lizard	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	Fed: none State: CSC	Less than reasonable	Study area contains compacted, disturbed soils with little moisture content.
<i>Gopherus agassizii</i> Desert tortoise	Widely distributed in the Mojave, Sonoran, and Colorado deserts from below sea level to 2200m. Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	Fed: THR State: ST	Less than reasonable	Study area is surrounded by development and lacks suitable habitat.
<i>Phrynosoma blainvillei</i> coast horned lizard	Inhabits coastal sage scrub & chaparral in arid & semi-arid climate conditions. Critical factors are the presence of loose soils with a high sand fraction; an abundance of native ants or other insects, especially harvester ants (<i>Pogonomyrmex</i> spp.); and the availability of both sunny basking spots and dense cover for refuge.	Fed: none State: CSC	Less than reasonable	Study area contains compacted, disturbed soils and lacks suitable habitat.
<i>Rana draytonii</i> California red-legged frog	Inhabits quiet pools of streams, marshes, and occasionally ponds.	Fed: THR State: CSC	Confirmed absent	Study area lacks streams, marshes, and occasional ponds.

Special Status Plants	Life Form and Habitat	Flower Season	Conservation Status	Occurrence Probability	Comments
<i>Thamnophis hammondi</i> two-striped garter snake	It is often in water and rarely found far from it, though it is also known to inhabit intermittent streams having rocky beds bordered by willow thickets or other dense vegetation.		Fed: none State: CSC	Confirmed absent	Study area is void of intermittent streams and lacks suitable habitat.
Birds					
<i>Agelaius tricolor</i> tricolored blackbird	Highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, foraging area with insect prey within a few km of the colony.		Fed: none State: CSC	Confirmed absent	No suitable nesting or foraging habitat within the study area.
<i>Asio flammeus</i> Short-eared owl	Found in open areas with few trees, such as annual and perennial grassland, prairies, dunes, meadow, irrigated lands, and saline and fresh emergent wetlands.		Fed: none State: CSC	Less than reasonable	No suitable nesting or foraging habitat within the study area.
<i>Athene cucularia</i> burrowing owl	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.		Fed: none State: CSC	Less than reasonable	No burrows present. Site lacks suitable foraging habitat due to heavy urbanization.
<i>Buteo swainsoni</i> Swainson's hawk	Breeds in stands with few trees, in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.		Fed: none State: ST	Less than reasonable	Study area does not contain suitable nesting or foraging habitat and does not appear to support rodent populations.
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	Nests on barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, and river bars. In California, most breeding occurs on dune-backed beaches, barrier beaches, and salt-evaporation ponds; infrequently on bluff-backed beaches.		Fed: THR State: CSC	Less than reasonable	No suitable beach or dune habitat is present.
<i>Charadrius montanus</i> Mountain plover	Short grasslands and plowed fields of the Central Valley from Sutter and Yuba counties southward. It is also found in foothill valleys west of the San Joaquin Valley, and in Imperial Valley.		Fed: none State: CSC	Less than reasonable	Study area lacks suitable habitat for nesting and foraging.
<i>Lanius ludovicianus</i> Loggerhead shrike	Found as a common resident and winter visitor throughout California in lowland and foothill habitats, where it frequents open areas with sparse shrubs and trees.		Fed: none State: CSC	Low potential	Study area lacks suitable habitat for nesting and contains low foraging habitat.
<i>Toxostoma lecontei</i> Le Conte's thrasher	Open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats, also occurs in Joshua tree habitat with scattered shrubs.		Fed: none State: CSC	Less than reasonable	Study area lacks suitable habitat for foraging and nesting.
<i>Vireo bellii pusillus</i> least Bell's vireo	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite.		Fed: END State: SE	Less than reasonable	No riparian habitat is present.
Mammals					
<i>Onychomys torridus ramona</i> southern grasshopper mouse	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.		Fed: none State: CSC	Less than reasonable	No suitable scrub habitat is present.

Special Status Plants	Life Form and Habitat	Flower Season	Conservation Status	Occurrence Probability	Comments
<i>Taxidea taxus</i> American badger	Most abundant in drier open stages of most shrub, forest, & herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.		Fed: none State: CSC	Less than reasonable	No suitable den burrows observed. Urbanized area would preclude the species from the study area
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	Resident in the various desert scrub communities of the western Mojave Desert in southwestern Inyo, eastern Kern, northwestern San Bernardino, and extreme northeastern Los Angeles counties.		Fed: none State: ST	Less than reasonable	Study area is surrounded by development, lacks small mammal burrows and soils are heavily disturbed and compacted.

Special Status Vegetation Communities	Conservation Status	Occurrence Probability
Southern Coast Live Oak Riparian Forest	CNDDB	Not present
Southern Cottonwood Willow Riparian Forest	CNDDB	Not present
Southern Riparian Scrub	CNDDB	Not present
Southern Willow Scrub	CNDDB	Not present
Valley Needlegrass Grassland	CNDDB	Not present
Wildflower Field	CNDDB	Not present

Status Codes:

END: Federally Endangered; THR: Federally Threatened; FPE: Federally proposed Endangered; FPT: Federally proposed Threatened; FC: Federal Candidate species; SE: State Endangered; ST: State Threatened; SR: State Rare (used for plants only); SCE: State Candidate for Endangered listing; SCT: State Candidate for Threatened listing; CSC: State Species of Special Concern.

CRPR - List 1A (Presumed extinct in CA); List 1B (Rare, threatened or endangered in California and elsewhere); List 2 (Presumed extinct in CA, but more common elsewhere); List 3 (We need more information about this plant); List 4 (Limited distribution (watch list).

Occurrence Codes:

Confirmed Absent: Confirmed to be absent on the study area as a formal and/or practical matter. Typically based on results of focused surveys.

Less than Reasonable: Although occurrence may be remotely possible, the likelihood of occurrence is less than that required for any potentially applicable regulatory threshold. Further, the likelihood of meaningful value of the site to any population(s) of this taxon is less than reasonable.

Low: Occurrence of the species is reasonable but unlikely because of some combination of facts, for example: (1) the study area was the subject of unsuccessful searches conducted under relevant and reasonable circumstances,

(2) potential habitat present is marginal or minimal in extent, (3) the best available information suggests the species is absent from the study area, and/or (4) available information sheds no clear light on the species likelihood on the study area, but it is known to be rare at best in the vicinity. Neither the species nor any indication of its presence was detected.

Moderate: The study area is within the range of the species, and contains potentially appropriate habitat. Neither individuals nor diagnostic sign were detected. It is nevertheless reasonable that some individuals may have been overlooked.

High: The study area is known to be within the range of the species, and contains potential habitat with a high likelihood of occupancy. Although no individuals or diagnostic sign were detected during current fieldwork by a qualified observer, it is likely that it is present to some degree given the best available information.

Confirmed Present: Confirmed present by a qualified biologist or other reliable source and there is no specific evidence that the species has subsequently become absent. Depending on the species and other information available, it may or may not be possible to determine what portions of the study area are currently in use without further studies.

Appendix C

Geotechnical Engineering Report

GEOTECHNICAL ENGINEERING REPORT

Proposed Warehouse/Auto Repair Facility
APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California
PL-06948-01

Prepared For

YABITO CORPORATION

December 28, 2006

Prepared By

**Earth Systems
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PL-06948-01

December 28, 2006

Yabito Corporation
37824 5th Street East
Palmdale, California 93550

Attention: Mr. Carlos Sanchez

Subject: **Geotechnical Engineering Report**
Proposed Warehouse/Auto Repair Facility
APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California

Presented herewith is Earth Systems Southern California's (ESSC's) Geotechnical Engineering Report prepared, as authorized, for the site of a proposed commercial development in Quartz Hill, Los Angeles County, California. The approximate 1.75-acre project site is located adjacent to the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in the unincorporated community of Quartz Hill, Los Angeles County, California. The conclusions and recommendations contained in this report are based upon ESSC's understanding of the proposed development and on analyses of the data obtained from the field and laboratory testing programs. The recommendations provided in this report generally relate to criteria for site grading and foundation design. ESSC strives to provide its analyses and recommendations in accordance with the applicable standards of care for the geotechnical engineering profession at the time this study was conducted.

This report completes ESSC's scope of geotechnical engineering services authorized on October 17, 2006, which were performed in accordance with ESSC's proposal dated October 13, 2006. Other services that may be required, such as grading observation and construction testing, are additional services and will be billed according to the Fee Schedule in effect at the time such services are provided. Budgets for these services, which are dependent upon design and construction schedules, can be provided when requested.

Earth Systems Southern California appreciates this opportunity to provide professional geotechnical engineering services for this project. If you need clarification of the information contained in this report, or if we can be of additional service, please contact the undersigned.

Respectfully submitted,

Earth Systems
Southern California

A handwritten signature in blue ink, appearing to read "Bruce A. Hick".

Bruce A. Hick
Project Geotechnical Engineer

Distribution: 4 – Yabito Corporation

4 – Max-Well Engineering

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**GEOTECHNICAL ENGINEERING REPORT
PROPOSED WAREHOUSE/AUTO REPAIR FACILITY
APN 3101-013-058
AVENUE M-2, WEST OF 50TH STREET WEST
QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA**

INTRODUCTION

This Geotechnical Engineering Report has been prepared for a proposed commercial development in Quartz Hill, Los Angeles County, California. The approximate 1.75-acre project site is located on the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in the unincorporated community of Quartz Hill, Los Angeles County, California. The purpose of Earth Systems Southern California's (ESSC's) services was to evaluate the geotechnical engineering characteristics of the on-site subsurface soils relative to the anticipated site development.

This report includes:

1. Descriptions of the field exploration and laboratory tests performed.
2. Conclusions and recommendations relating to construction of the proposed development based upon analyses of data obtained from the exploration and testing programs and on knowledge of the general and site specific characteristics of the subsurface soils.

PROJECT DESCRIPTION

Based upon review of the Site Plan supplied by Max-Well Engineering, ESSC understands that plans are to construct an approximate 26,650 square foot warehouse/auto repair facility along with associated site improvements, including site pavement, access lane construction and typical landscaping. ESSC has not received building or foundation plans for the proposed development as of this writing. However, based upon past experience, it is anticipated the proposed structure will be single or two-story, of wood frame, masonry, or concrete tilt-up panel construction with a slab-on-grade ground floor. Estimated maximum structural loads are 2,500 plf for continuous foundations and 100 kips for isolated column loads.

Due to the relatively flat site topography, ESSC has assumed that conventional cut and fill methods will be used to grade the site, with maximum slope heights of five feet. Sewage disposal will be provided by a public sewer system. These assumptions were used as the basis for the exploration, testing, and analyses programs, and for the recommendations contained in this report.

PURPOSE AND SCOPE OF SERVICES

The purpose of ESSC's services was to evaluate the project site soil conditions, and to provide preliminary geotechnical engineering conclusions and recommendations relative to the project site and the proposed development. ESSC's scope of services included the following:

- A. A general geotechnical engineering reconnaissance of the site.
- B. Shallow subsurface exploration of the project site by drilling two (2) test borings.
- C. Geotechnical laboratory testing of selected soil samples obtained from the exploratory soil boring excavated for this project.
- D. Engineering analyses of the data obtained from the exploration and testing programs.
- E. A summary of findings and recommendations in this written report.

Contained in this report are:

- 1. Discussions on local and site specific soil conditions.
- 2. Results of laboratory tests and field data.
- 3. Recommendations relating to the proposed site development, including allowable foundation bearing capacity, recommendations for foundation design, estimated total and differential settlements, site grading criteria, lateral earth pressures, soil expansion characteristics, soil corrosion potential, site liquefaction potential, and preliminary pavement sections.

SITE DESCRIPTION

The approximate 1.25-acre rectangular-shaped project site is located on the south side of Avenue M-2, approximately 150 feet west of 50th Street West, in the unincorporated community of Quartz Hill, Los Angeles County, California. The site is located at approximately 34.6433° latitude and approximately 118.2184° longitude. Access to the site is available from Avenue M-2, a poorly maintained dirt road located adjacent to the northern boundary of the site (see attached Site Plan & Vicinity Map in Appendix A).

Topographically, the site consists of relatively flat ground that is sloping to the north at an approximate one percent gradient. There is less than 5 feet of elevation differential across the site. At the time of the field exploration, the site consisted of vacant, unimproved land. Trash and debris was observed scattered across the project site, especially adjacent to the existing street. The site was vegetated with a light to moderate covering of typical desert vegetation, consisting of weeds, grasses, brush, and bushes. Several dirt trails traverse the site. The above cited descriptions are intended to be illustrative, and are specifically not intended for use as a legal description of the subject property in any matter.

FIELD EXPLORATION

The field exploration for this study, conducted on October 31, 2006, consisted of two (2) exploratory soil borings drilled to depths of approximately 16 and 31 feet below the existing ground surface.

Boring B-1 was terminated due to bedrock. The borings were drilled with a Mobil B-51 truck-mounted drilling rig using eight-inch diameter continuous flight hollow stem auger in accordance with generally accepted geotechnical exploration procedures (ASTM D 1452). The approximate location of the exploratory borings, as indicated on the attached Site Plan & Vicinity Map in Appendix A, were determined by sighting and tape measuring from existing site improvements. The exploration locations should be considered accurate only to the degree implied by the measurement method used.

Bulk disturbed samples of the subsurface soils were obtained from tailings developed during excavation of the test borings. These samples were secured for classification and testing purposes and represent a mixture of soils within the noted depths.

Soil samples ("ring samples") were secured from within the soil borings using a three-inch O. D. ring sampler (ASTM D 3550). The sampler shoe is similar to the type specified in ASTM D 1586. A 140-pound hammer falling approximately 30 inches (ASTM D 1586) drove the sampler. The number of blows required to drive the sampler one-foot was recorded in six-inch increments. Recovered soil samples were sealed in plastic containers and brought to ESSC's laboratory for further classification and testing.

The Boring Logs for this report, included in Appendix A, represent ESSC's interpretation of the field logs prepared for each boring by ESSC staff, along with their interpretation of soil conditions between samples and results of laboratory tests. While the noted stratification lines represent approximate boundaries between soil types, the actual transitions may be gradual.

LABORATORY TESTING

After visual and tactile classification in the field, the soil samples were brought to ESSC's laboratory. The soil classifications were checked in accordance with the Unified Soil Classification System and a testing program was established as follows:

- A. Soil samples and field logs were reviewed to assess which samples would be analyzed further.
- B. In-situ moisture content and dry unit weight for soil core samples were developed in accordance with ASTM D 2937.
- C. The relative strength characteristics of the subsurface soils were estimated from the results of direct shear tests (ASTM D 3080) conducted on select ring samples. The samples were placed in contact with water for at least 24 hours before testing and then sheared under normal loads ranging from 0.5 to 2.3 KSF. Testing was conducted to obtain residual (ultimate) shear strengths.
- D. The relative strength characteristics of remolded (compacted) samples of the near-surface soils were estimated from the results of direct shear tests (ASTM D 3080) conducted on samples remolded to approximately 90% of maximum dry density as determined by ASTM D 1557 test procedures. The remolded samples were submerged in water for at least 24 hours

before testing and then sheared under normal loads ranging from approximately 0.5 to 2.3 KSF. Testing was conducted to obtain residual (ultimate) shear strengths.

- E. Consolidation tests (ASTM D 2435) were conducted on select ring samples. The maximum stress during testing was 4.6 KSF. The samples were saturated at 2.3 KSF to check the hydrocompression potential. The samples were unloaded to 1.2 KSF to check rebound.
- F. Schiff Associates of Claremont, California performed soil chemistry tests on a sample of the site soil provided by ESSC. Tests consisted of sulfate, pH and Soil Resistivity, as well as several other chemical content tests.
- G. Additional tests consisted of Maximum Density-Optimum Moisture (ASTM D 1557) and Expansion Index (ASTM D 4829).

Refer to Appendix B for the laboratory test results. Presentation of the test results provides only that information considered pertinent. References to ASTM and other test standards refer to the standard currently in effect.

SUBSURFACE SOIL CONDITIONS

The native soils encountered in the exploratory borings are alluvial deposits, consisting predominantly of silty sands with gravel (SM soil type based upon the Unified Soil Classification System) overlying shallow bedrock. The bedrock encountered consists of highly weathered Pelona Schist and was encountered in both borings at depths of approximately 14 feet (Boring B-2) to 19 feet (Boring B-1) below the existing ground elevation. The bedrock encountered was severely to completely weathered at the soil/rock contact, but becomes less weathered with depth.

Some of the upper three to four feet of the native site soils were found to be relatively loose, non-uniform, and of low relative compaction. The underlying native soils encountered below a depth of approximately four feet were found to be medium dense to dense. The Boring Logs in Appendix A contain more detailed descriptions of the soil encountered in the exploratory test borings. Per the 2001 California Building Code (CBC) Table 16-J, the site subgrade classification is a very dense soil and soft rock (SC).

Based upon the consolidation test results, some of the native site soils within the top three to four feet are anticipated to demonstrate a slight to moderate tendency to hydrocompress (experience a loss in volume upon wetting, with or without additional loading; commonly referred to as "collapsing soil"). The soils tested below a depth of approximately four feet, through the depths tested, were found to demonstrate a negligible to slight tendency to hydrocompress.

Based upon the Expansion Index Test (ASTM D 4829) results, the upper site soils are considered to have a "very low" (0-20) expansion potential. Refer to Section G of the Recommendations section for explanations and recommendations for dealing with expansive soils.

GROUNDWATER

Free groundwater or perched water was not encountered in the borings at the time of drilling. Static aquifer groundwater levels in the vicinity of the site are estimated to be deeper than 100 feet below the existing surface (U. S. Geological Survey Water Data Report CA 93-5; Volume V: Groundwater Data, March 1993). Fluctuations in groundwater levels may occur due to variations in rainfall, regional climate, and other factors.

REGIONAL GEOLOGY

The project site is located in the south-central portion of the Antelope Valley. Lithologic units exposed in this area consist predominantly of deep Quaternary sediments. Local active faults are typically located along the margins of the Antelope Valley.

The San Andreas rift zone, which is several miles wide, dominates the geology of the southern Antelope Valley. The rift zone is an extensive zone of active and potentially active faults that extends from the Gulf of California to Cape Mendocino in northern California. The San Andreas fault, and associated subsidiary faults, is the closest active fault to the site. The San Andreas fault, at its nearest point, is approximately 3 miles southwest of the site. No known active faults exist within the project site boundaries.

GEOLOGIC HAZARDS

Based on the site reconnaissance and a review of selected geologic references, the geologic hazards that could affect the proposed development generally include seismically related hazards. These hazards are discussed below.

Fault Rupture

No active faults have been mapped across the project site. Therefore, the potential hazard due to active fault ground rupture is considered minimal. The site is not located within an Alquist-Priolo Earthquake Fault Zone, as currently published by the State of California. These zones are defined by the California State Division of Mines and Geology to delineate known active or potentially active faults.

Liquefaction

Liquefaction is defined as a loss of strength of saturated cohesionless soil generally due to seismic shaking. Soil types most susceptible to liquefaction are loose, saturated silty to clean fine sands. Based on the site exploration, the shallow alluvial soils below this site consist of sands that are generally in a medium dense to dense state overlaying relatively shallow bedrock. Static groundwater depths on this site are greater than 50 feet. Where groundwater levels are greater than 50 feet deep, it is generally thought that surface damage from deeper liquefaction will not occur. Therefore, since

the static groundwater level under the site is greater than 50 feet deep and the foundation soils are relatively dense in nature, it is ESSC's opinion that hazards from liquefaction on this site should be negligible.

Seismic Hazards

The site is located in Southern California, which is an active seismic area. The site is within Seismic Zone 4 as designated by the 1997 edition of the Uniform Building Code. Major historic earthquakes felt in the vicinity of Quartz Hill have usually originated from faults located outside the area. These include the 1857 Fort Tejon, 1872 Owens Valley, 1952 Arvin-Tehachapi, 1971 San Fernando, 1987 Whittier, 1992 Landers and Big Bear events, 1994 Northridge and the 1999 Hector Mine earthquakes. Table I (below) lists significant recorded earthquakes felt in the Quartz Hill area and the estimated intensity of ground shaking at the site based on the Modified Mercalli Scale. A description of the Modified Mercalli Scale is included as Table II (page 8) of this report.

TABLE I

<u>Earthquake (Fault)</u>	<u>Approx. Distance to Epicenter (miles)</u>	<u>Earthquake Magnitude*</u>	<u>Estimated Intensity at the Site **</u>	<u>Date</u>
Fort Tejon (San Andreas)	100	8.0	VIII	1857
Owens Valley (Sierra Nevada)	142	7.6	VI	1872
Arvin-Tehachapi (White Wolf)	51	7.5	VII	1952
San Fernando (San Fernando)	20	6.6	VI	1971
Whittier	42	5.9	IV	1987
Landers	106	7.3	V	1992
Northridge	35	6.7	V	1994
Hector Mine	111	7.1	V	1999

*Moment Magnitude

**Modified Mercalli Scale

From Table I, it appears that the past maximum intensity of historic earthquakes felt in the Quartz Hill area due to regional faults has been on the order of VIII on the Modified Mercalli Scale.

Estimated maximum Mercalli intensities at the site for a 7.9+ moment magnitude earthquake occurring on the local San Andreas Fault are approximately VIII. Intense ground shaking lasting at least 60 seconds is anticipated. Aftershocks with magnitudes up to 7 are expected.

Ground Fissuring

Areal subsidence could also occur at the site, but would probably occur on a regional basis. Ground fissuring is a recently observed phenomenon in the northwest Lancaster area and at Edwards Air Force Base. It is thought to occur due to areal subsidence related to extensive groundwater withdrawal, tensional stresses, and erosion. Documented hazards from ground surface fissuring observed in other areas of California have included foundation distress and adverse settlement, as well as cracking of pavement and utilities.

At this time, the areas of predominant fissuring in the Antelope Valley are located north of Avenue I in Lancaster. As of this date, ESSC is not aware of documented evidence of structural damage to buildings in the immediate area of the project site attributed to the ground fissuring phenomena. ESSC's personnel observed no obvious evidence of fissuring on this site at the time of the field exploration.

The location of ground fissuring in the Lancaster area appears to be related to specific soil types, relative location within the area of areal subsidence, and the potential for storm runoff to erode existing fissures. Accurate prediction of future areas of fissuring is beyond the current state of the art for this profession, especially as changes in groundwater pumping and location of well fields could alter the location and magnitude of areal subsidence and associated tensional stresses.

Other Secondary Seismic Hazards

Other seismic hazards related to ground shaking include ground lurching, landslides, tsunamis, seiches, and seismic-induced settlements. Ground lurching is generally associated with fault rupture and liquefaction. As these two hazards are considered unlikely, it is ESSC's opinion that the potential for ground lurching is also low. Due to the relatively flat site topography, hazards from landslides are considered negligible. Due to the inland location of the site, hazards from tsunamis are considered nonexistent.

Two large water storage facilities are currently located approximately 0.75 miles northeast of the project site. These reservoirs are located at a higher elevation than the project site. If these tanks were to release water, it is anticipated that existing or planned storm water control facilities would minimize the impact on the project site. No other water storage facilities are currently located up-gradient of the property.

Seismically induced settlement may occur within the on-site younger alluvial soils. However, the near surface soils will be densified by remedial grading to mitigate most settlement potentials. Additional settlement may occur due to seismic shaking, but will most likely occur on an areal basis.

Table II
Modified Mercalli Intensity Scale of 1931¹, (1956 version)²

Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering.

Masonry A: Good workmanship, mortar, and design; reinforced, especially laterally and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B: Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces.

Masonry C: Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces.

Masonry D: Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

I.	Not felt. Marginal and long-period effects of large earthquakes.
II.	Felt by persons at rest, on upper floors, or favorably placed.
III.	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.	Hanging objects swing. Vibrations like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frame creak.
V.	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle.
VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices also unbraced parapets and architectural ornaments. Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII.	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX.	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake fountains, sand craters.
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI.	Rails bent greatly. Underground pipelines completely out of service.
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

¹Original 1931 version in Wood, H. O., and Neumann, F., 1931, Modified Mercalli intensity scale of 1931: Seismological Society of America Bulletin, v. 53, no. 5, p. 979-987.

²1956 version prepared by Charles F. Richter, in Elementary Seismology, 1958, p. 137-138, W. H. Freeman & Co.

Erosion

The project site is in an area where minor sheet flooding and erosion could occur. Appropriate site analyses, project design, project construction, and site maintenance should minimize the sheet flooding potential.

DISCUSSION AND CONCLUSIONS

Based upon the field exploration, laboratory testing, ESSC's understanding of the proposed site development, and past experience, it is ESSC's opinion that the site, when modified as recommended in this report, is suitable for the intended construction.

Site Grading

As mentioned in the Soil Conditions Section, the upper three to four feet of the native soils were found to be relatively loose, non-uniform, of low relative compaction, and subject to significant hydrocompression. It is anticipated that these upper soils will be further disturbed during the demolition/removal of existing site structures and improvements. Based upon these conditions, it is ESSC's opinion that the upper native soils will not provide uniform support for the proposed structures without remedial grading. To provide a more uniform bearing for the proposed structures, it is recommended that a recompacted soil mat be constructed beneath all structural foundations and slab-on-grade construction. Refer to Section A of the Recommendations of this report for more detailed discussions and recommendations regarding site preparation.

Foundation Design and Settlements

If the preliminary recommendations for site preparation and grading are followed, conventional shallow (continuous and isolated pad) foundations may be used to support the proposed structures. If the preliminary recommendations for foundation design and construction are followed, total settlement of the proposed structures should be approximately three-quarters of an inch. Differential settlement across a thirty-foot span should be less than 0.0015 radians. Refer to Section D of the Recommendations section of this report for more detailed discussions and recommendations regarding foundation design.

Section 111 Statement

Based on the findings summarized in this report, and provided the recommendations in this report are incorporated into site development, it is ESSC's opinion that construction of the proposed improvements will not be subject to a geologic hazard from landslides, settlement, or slippage. It is also ESSC's opinion that the proposed improvements and anticipated site grading will not adversely affect the geologic stability of the site or adjacent properties provided ESSC's recommendations are followed. Test findings and statements of professional opinions do not constitute a guarantee or warranty, expressed or implied.

RECOMMENDATIONS

Based upon the field exploration, laboratory testing, ESSC's interpretation of data from the exploration and testing programs, and past experience, it is ESSC's opinion that the following recommendations should be incorporated into site preparation, design, and construction of the proposed site development.

A. Site Preparation

1. Any existing pavements, slabs, foundations, vegetation (including root balls), trash piles, abandoned underground utilities, and other debris should be removed from the proposed construction areas. It is possible that underground facilities (seepage pits, septic tanks, cisterns, foundations, etc.) may be present on the site. All such facilities should be removed in their entirety or properly abandoned. All strippings and debris should be removed from the site in order to preclude their incorporation in site fill or remedial excavation backfill.
2. Depressions resulting from removals under Items 1 above should have debris and loose soils removed and filled with suitable soils placed as recommended below.
3. In order to minimize potential settlement problems associated with a structure supported on a nonuniform thickness of compacted fill, the geotechnical engineers should be consulted for site grading recommendations relative to backfilling large and/or deep depressions resulting from removals under Item 1.
4. To provide a more uniform bearing for the proposed structure foundations, structural retaining walls, and building slab-on-grade construction, the following remedial grading is recommended:
 - a. Existing soils beneath the proposed building areas, including a distance of at least five feet beyond the foundation perimeter, should be excavated a minimum of 42 inches below existing site grade or finished subgrade (pad elevation), whichever is lower. **The base of the remedial excavation across an individual building pad should be a level elevation.** The bottom of the remedial excavation should then be scarified (ripped) 6 inches.
 - b. One intent of the above remedial grading recommendations is to remove all of the existing artificial fill and the upper loose site soils subject to significant hydrocompression within the proposed building areas. All exposed ground surfaces (subgrades) at the base of the remedial excavations should be reviewed for possible loose/soft soils and tested to verify that an "in-place dry density" ("IPD") of at least **106.0 p.c.f.** is present. If this density does not exist at the specified depth, additional excavation will be required until suitable subgrade densities are found.

- c. The excavated soils may be reused to backfill the remedial excavations provided they are cleaned of any deleterious materials and debris, and are properly moisture conditioned and compacted as recommended in this report. During replacement of the excavated soils in the remedial excavations, and recompaction of the scarified soils, the soils should be moisture conditioned to near optimum moisture content and be uniformly compacted to at least 90% of maximum dry density as determined by ASTM D 1557 test procedures using mechanical compaction equipment. To aid in the compaction operation, fill should be placed in maximum six-inch compacted lifts. **Compaction should be verified by testing.**
 - d. The geotechnical consultant's representative should review the site grading prior to scarification of the bottom of the remedial excavations. Local variations in soil conditions may warrant increasing the depth of remedial excavation. Any deeper areas of loose soils should be removed and be replaced as compacted, engineered fill.
5. To provide a more uniform bearing for the proposed traffic bearing Asphalt Concrete, Portland Cement Concrete pavement construction and any proposed exterior non-traffic bearing concrete flatwork (sidewalks, patios, walkways etc.), the following remedial grading is recommended:
- a. Existing soils beneath the proposed pavement sections, including a distance of at least two feet beyond the pavement perimeter, where obtainable, should be excavated a minimum of 6 inches below existing site grade or finished subgrade, whichever is lower. The bottom of the remedial excavation should then be scarified (ripped) 6 inches.
 - b. The excavated soils may be reused to backfill the remedial excavations provided they are cleaned of any deleterious materials and debris, and are properly moisture conditioned and compacted as recommended in this report. During replacement of the excavated soils in the remedial excavations, and recompaction of the scarified soils, the soils should be moisture conditioned to near optimum moisture content and be uniformly compacted to at least 90% of maximum dry density as determined by ASTM D 1557 test procedures using mechanical compaction equipment. To aid in the compaction operation, fill should be placed in maximum six-inch compacted lifts. **Compaction should be verified by testing.**
 - c. The geotechnical consultant's representative should review the site grading prior to scarification of the bottom of the remedial excavations. Local variations in soil conditions may warrant increasing the depth of remedial excavation. Any deeper areas of loose soils should be removed and be replaced as compacted, engineered fill.
6. Import soils should be equal to, or better than, the on-site soils in strength, expansion, compressibility, and soil chemistry characteristics. In general, import material should

be free of organic matter and deleterious substances, have 100% passing a two-inch sieve, 60% to 100% passing a #4 sieve, no more than 20% passing a #200 sieve, an Expansion Index less than 20, a Liquid Limit less than 35, and a Plasticity Index less than 12. Import soils can be evaluated prior to their use, but will not be prequalified by the geotechnical consultant. Approval of import soils will be given only after the material is on the project, either in-place, or stockpiled in adequate quantity to complete the project.

7. Backfill around or adjacent to confined areas (i.e. interior utility trench excavations, etc.) may be performed with a lean sand/cement slurry (minimum two sacks of cement) or "flowable fill" material (a mixture of sand/cement/fly ash). The fluidity and lift placement thickness of any such material should be controlled in order to prevent "floating" of any "submerged" structure.
8. Suitable fill soils should be moisture conditioned to at least optimum moisture content and be uniformly compacted to at least 90% of maximum dry density as determined by ASTM D 1557 test procedures using mechanical compaction equipment. To aid in the compaction operation, fill should be placed in maximum six-inch compacted lifts. **Compaction should be verified by testing.**
9. Shrinkage because of excavation and compaction of the upper site soils is expected to be 13 to 18 percent of any excavated or scarified site soils. This estimate is based upon compactive effort needed to produce an average degree of compaction of approximately 92 percent and may vary depending on contractor methods. During compaction, an additional 0.1-foot subsidence of the underlying soils is estimated. Losses from site clearing and grubbing operations may affect quantity calculations and should also be taken into account. The grading contractor should verify shrinkage and earthwork yardage estimates.
10. Final site grades should be designed and constructed so that all water is diverted away from all structures and not allowed to pond on or near pavement. Drainage devices should be constructed to divert drainage from the project site.
11. It is recommended that Earth Systems Southern California (ESSC) be retained to provide engineering services during the grading, excavation, and foundation phases of development. This continuity of services will allow for the geotechnical review of the design concepts and specifications relative to the recommendations of this report and will more readily allow for design changes in the event that subsurface conditions differ from those currently anticipated.

B. Excavations

1. All excavations should be made in accordance with applicable regulations (including CAL/OSHA). Based upon the results of the site exploration, subsurface caving sands will be encountered. Therefore, there is a potential for construction problems involving caving of relatively deep site excavations (i.e. utility lines, dry wells,

swimming pools, etc.). Where such situations are encountered, lateral bracing or appropriate cut slopes should be provided. Project safety is the responsibility of the contractor and the owner. ESSC will not be responsible for project safety.

2. Open excavations may be cut vertically to a maximum depth of no more than four feet. Excavations extending between four and ten feet deep should be shored or sloped back from the base of the excavation to at least a 1.5:1 (horizontal to vertical) slope or flatter. If excavations dry out, sloughing will occur.
3. During the time excavations are open, no heavy grading equipment or other surcharge loads (i.e. excavation spoils) should be allowed within a horizontal distance from the top of any slope equal to the depth of the excavation (both distances measured from the top of the excavation slope).
4. Adequate measures should be taken to protect any structural foundations, pavements, or utilities adjacent to any excavations.

C. Utility Trenches

Standard construction techniques should be sufficient for site utility trench excavations. The surface of utility trench excavation backfill frequently settles even when backfill is placed under optimum conditions. Structural units or pavement placed over such backfill should be designed to accommodate such movements. Jetting of utility trench backfill is not recommended. There is a potential for construction problems involving caving of relatively deep site excavations.

1. Backfill of utility trench excavations within rights-of-way should be placed in strict conformance with the requirements of the governing agency. However, as a minimum it is recommended that utility trench excavation backfill should be moisture conditioned and be uniformly compacted to at least 90% of maximum dry density using mechanical compaction equipment. To aid in the compaction operation, utility trench excavation backfill should be placed in maximum six-inch compacted lifts. **Compaction should be verified by testing.**
2. The provisions of this report relative to minimum compaction standards should govern utility trench excavation backfill within the project boundary. In general, service trench line excavations extending inside the site should be backfilled with native soils that have been moisture conditioned and uniformly compacted to at least 90% of maximum dry density using mechanical compaction equipment. To aid in the compaction operation, utility trench excavation backfill should be placed in maximum six-inch compacted lifts. **Compaction should be verified by testing.**
3. Backfill operations should be reviewed and tested by the geotechnical engineer's representative to verify conformance with these recommendations.

D. Foundations

1. It is recommended that any building or structure constructed on this site be designed to at least the minimum standards for Seismic Zone 4 as designated by the latest edition of the governing Building Code. The following Table is a summary of the estimated seismic parameters typically required for structural design per the 2001 California Building Code (CBC).

TABLE III
Summary of Seismic Parameters

Seismic Zone	4
Seismic Source Type (2001 CBC Table 16-U)	A*
*San Andreas Fault (≈ 5 km)	
Subgrade Classification (2001 CBC Table 16-J)	S_C
Seismic Zone Factor "Z" (2001 CBC Table 16-I)	0.4
Seismic Coefficient - C_a (2001 CBC Table 16-Q)	$0.40N_a$
Seismic Coefficient - C_v (2001 CBC Table 16-R)	$0.56N_v$
Near Source Factor - N_a (2001 CBC Table 16-S)	1.2
Near Source Factor - N_v (2001 CBC Table 16-T)	1.6

2. Foundations for the proposed structures should be supported by compacted soils prepared as recommended in Section A. of this report.
3. Excavations for foundations should be cleaned of all loose or unsuitable soils and debris prior to placement of concrete. **Soil generated from the foundation excavations should not be placed below the floor slab unless properly moisture conditioned and compacted.**
4. Continuous (wall, strip or perimeter) foundations for the proposed project structures may be proportioned for the following values:
 - a. Design Values: An allowable "net" bearing capacity of 2,000 p.s.f. can be utilized for dead and sustained live loads. This value includes a minimum safety factor of three, and may be increased by 1/3 for total loads, including seismic forces.
 - b. Continuous foundations should be embedded a minimum of 12 inches below the lowest adjacent soil grade for single-story structures, 18 inches for two-story structures, and be a minimum of one foot in width. Actual depth, width, and reinforcement requirements for continuous foundations will be dependent on the Expansion Index of the bearing soils (Refer to Section G of Recommendations), applicable sections of the governing building code, and requirements of the structural engineer.
 - c. The allowable bearing capacity for continuous foundations may be increased by 200 psf for each additional six inches of foundation depth and 200 psf for

each additional one foot of foundation width. The allowable bearing capacity should not exceed 3,000 p.s.f. for continuous foundations to keep estimated settlements within allowable limits.

5. Isolated pad (column or pier) foundations for the proposed project structures may be proportioned for the following values:
 - a. Design Values: An allowable "net" bearing capacity of 2,500 p.s.f. can be utilized for dead and sustained live loads. This value includes a minimum safety factor of three, and may be increased by 1/3 for total loads, including seismic forces.
 - b. Isolated pad foundations should be embedded a minimum of 12 inches below the lowest adjacent soil grade for single-story structures, 18 inches for two-story structures, and be a minimum two feet in width. Actual depth, width, and reinforcement requirements for isolated pad foundations will be dependent on the Expansion Index of the bearing soils (Refer to Section G of Recommendations), applicable sections of the governing building code, and requirements of the structural engineer.
 - c. The allowable bearing capacity for isolated pad foundations may be increased by 200 psf for each additional six inches of foundation depth and 200 psf for each additional one foot of foundation width. The allowable bearing capacity should not exceed 3,500 p.s.f. for continuous foundations to keep estimated settlements within allowable limits.
6. Friction acting along the foundation base may provide resistance to lateral loading. The coefficient of friction was estimated to be 0.38 for site soils recompacted to approximately 90% of maximum dry density as determined by ASTM D 1557 test methods, and may be used with dead loads. This value includes a reduction factor of 1/3. This value may be increased by 1/3 for total loads, including seismic forces.
7. Additional resistance to lateral loading may be provided by passive earth pressure acting against the sides of foundations or grade beams. This pressure was estimated to be 370 Z PSF, where Z = Depth (in feet) below the finished ground elevation. In passive pressure calculations, the upper one-foot of soil should be subtracted from the depth, Z, unless confined by pavement or slab. The resisting pressure provided is an ultimate value. An appropriate factor of safety should be used for design calculations (minimum of 1.5 recommended). Passive and frictional resistance can be combined without reduction.

E. Slab-on-Grade Construction

1. Interior building concrete slab-on-grade construction should be supported by a minimum 48-inch uniform thickness of compacted soils prepared as recommended in Section A. 4. a. of this report (42 inches of excavated and recompacted soils and

6 inches of scarified and recompacted soils). Prior to placement of any slab reinforcement, moisture retarder, or sand material, all slab-on-grade subgrades (both interior and exterior) should be reviewed and tested for the required compaction and uniformity of conditions. **Compaction should be verified by testing.**

2. Exterior concrete slab-on-grade construction should be supported by at least 12 inches of compacted soils, uniform in thickness, prepared as recommended in Section A. 5. of this report (6 inches of excavated and recompacted soils and 6 inches of scarified and recompacted soils). Where slabs will extend over utility trench excavations, observation and testing of the trench backfill should be performed to confirm the compaction and uniformity of conditions of the utility trench excavation backfill. **Compaction should be verified by testing.**
3. In areas of moisture sensitive floor coverings, an appropriate vapor retarder should be installed in order to minimize vapor transmission from the subgrade soil to the slab. The vapor retarder should be evaluated for holes and/or punctures, and the edges overlapped and taped, prior to placement of concrete. Any holes or punctures observed should be properly repaired. The retarder should be covered with two inches of sand to help protect it during construction. The sand should be lightly moistened just prior to placing the concrete.
4. Reinforcement of slab-on-grade construction is contingent upon the structural engineer's recommendations and the Expansion Index of the supporting soils. Since the mixing of fill soils with native soils could change the Expansion Index, additional tests should be conducted during rough grading to determine the expansion characteristics of the new subgrade soils. It is recommended that all interior and exterior concrete slab-on-grade be reinforced with at least #3 bars on 18-inch centers. **Reinforcement should be placed at mid-depth of the slab.** Additional reinforcement may be required once the final expansion potential of the subgrade soils is known. The structural engineer may also require additional slab-on-grade reinforcement.
5. It should be realized that as a field manufactured project, concrete will crack even under ideal conditions. It is ESSC's experience that concrete shrinkage is more pronounced in the Antelope Valley area due to environmental conditions (high winds, low humidity, and large daily temperature differentials). The use of high slump concrete for foundations and slabs on this project will increase the occurrence and magnitude of shrinkage cracks. It is recommended that the project developers consult with project concrete contractors and concrete suppliers to formulate appropriate mix designs, placement procedures, and concrete curing procedures in an attempt to reduce the occurrence and magnitude of concrete shrinkage cracking.
6. Cracks that develop in concrete slab-on-grade should be filled and sealed prior to placing floor coverings. Frequent control joints should be incorporated into the slab construction, particularly in the areas of re-entrant corners, to help control cracking.

7. Relatively impervious floor coverings (i.e. vinyl, linoleum, etc.) that cover concrete slab-on-grade may block the passage of moisture vapor through the slab, which could result in damage to the floor covering. It is suggested that after the concrete has sufficiently cured, the slab surface be sealed with a commercial sealant prior to placing the floor covering. The compatibility and recommendations for placing of the concrete sealer, mastic, and floor covering should be verified by the floor covering manufacturer prior to sealing the concrete or placing of the floor covering.
8. It is recommended that the proposed exterior perimeter slabs (sidewalks, patios, walkways, etc.) be designed to be relatively independent of foundation stems (free-floating) to help mitigate cracking due to foundation settlement and/or expansion. Frequent joint spacing should be incorporated into concrete slab-on-grade construction, particularly in the areas of re-entrant corners, to help control cracking.
9. Subgrade soils for all concrete slab-on-grade construction should be moisture conditioned to at least optimum moisture content to a depth of at least six inches below the lowest adjacent soil grade within 24-hours prior to placement of concrete. Measures should be taken to maintain optimum moisture until concrete is placed. Actual depths of pre-moistening will be dependent upon the actual Expansion Index of the subgrade soils.

F. Lateral Earth Pressures

1. Based upon analyses, the following lateral earth pressures may be used in the design of any proposed retaining walls or similar structures:

	<u>Driving Earth Pressure*</u>	<u>Resisting Earth Pressure*</u>
Well drained level soil	40	370***
Well drained 2:1 backfill soil	63	
At-rest (restrained wall)	61**	

*Equivalent fluid pressure (PSF) per foot of soil height.

**For purposes of design, a wall is considered restrained if it is prevented from movement greater than $0.002H$ (H = height of wall in feet) at the top of the wall.

***The upper one-foot of soil should be subtracted from the depth, Z , unless confined by pavement or slab.

NOTE: The pressures recommended above were based on the assumption that the on site soils will be compacted to approximately 90% of maximum dry density. The use

of select granular fill may reduce the recommended driving earth pressure. The resisting pressure provided is an ultimate value. An appropriate factor of safety should be used for design calculations (minimum of 1.5 recommended). Frictional and passive resistance may be combined without reduction.

2. Friction acting along the foundation base may provide resistance to lateral loading. The coefficient of friction was estimated to be 0.38 for site soils recompacted to approximately 90% of maximum dry density as determined by ASTM D 1557 test procedures, and may be used with dead loads. This value includes a reduction factor of one-third. This value may be increased by 1/3 for total loads, including seismic forces. Frictional and passive resistance may be combined without reduction.
3. The lateral earth pressure to be resisted by retaining walls should be increased to allow for surcharge loads. The surcharge considered should include the loads from any structures or vehicle traffic within a distance approximately equal to the height of the retaining wall.
4. Backfill immediately behind any retaining structure should be a free-draining granular material. Comments on the characteristics of import soils will be given by the geotechnical consultant after the material is on the project, either in place, or stockpiled in adequate quantities to complete the project.
5. Backfill behind retaining walls should be with soils that have been properly moisture conditioned to approximately optimum moisture content and uniformly compacted to at least 90% of maximum dry density as determined by ASTM D 1557 test procedures using mechanical compaction equipment. **Compaction should be verified by testing.** To aid in the compaction operation, retaining wall backfill should be placed in maximum six-inch compacted lifts.
6. Compaction within the area of a 1:1 slope from the bottom of wall excavations should be performed by hand operated compaction equipment. This is intended to reduce potential "locked-in" lateral pressures caused by compaction with heavy grading equipment.
7. Weepholes, backdrains, or an equivalent system of backfill drainage should be incorporated into the retaining wall design (see Plate C-I, Appendix C, for backdrain details). Waterproofing of retaining walls should be provided to help reduce the potential for efflorescent formation.
8. The final grade should be such that all water is diverted away from the retaining wall's foundation or backfill.

G. Expansive Soil

The Expansion Index (ASTM D 4829) of the subgrade soils should be considered when designing foundations. As stated in the Soil Conditions section, the preliminary Expansion Index

determination of the on-site soils is in the "very low" (0-20) classification. The foundation and slab-on-grade design recommendations provided in Sections D and E of this report include generally used guidelines in the Quartz Hill area for foundation design for soils with the indicated degree of expansiveness. These recommendations are minimum and comply with normally accepted geotechnical engineering practices. **However, actual foundation and slab-on-grade construction reinforcement should be determined by the structural engineer based upon site specific conditions such as foundation loading and engineering characteristics of the subgrade soils.**

If the site soils are thoroughly mixed and/or additional fill is added during site preparation, the expansion potential may change. The expansion potential of the new subgrade soils should be determined after the site preparation has been completed, and the final foundation design adjusted accordingly.

H. Preliminary Pavement Sections

No "R"-Value tests were conducted for this report. During site grading, sample(s) should be secured from the exposed pavement subgrade areas, tested, and evaluated for review or revision of the following preliminary pavement sections. Based upon "R"-Value test results obtained from development of adjacent sites (design "R"-Value = 45), the following sections may be used for developing preliminary earth quantities and paving cost estimates:

Asphalt Concrete Pavement Sections

Traffic Index 5.0 (Automobile and Light Truck Parking and Drive Lanes)

3.5" Asphalt Concrete on
4.0" Crushed Aggregate Base or equivalent

Traffic Index 7.0 (Avenue M-2)

4.0" Asphalt Concrete on
6.0" Crushed Aggregate Base or equivalent

Asphalt concrete pavement section recommendations are based on the assumption that the pavement section is placed on a minimum 12 inch thick layer of subgrade compacted as recommended in Section A. 5. of the Recommendations of this report. Aggregate base material should be properly moisture conditioned and compacted to at least 95% of the maximum dry density as determined by ASTM D 1557 test procedures using mechanical compaction equipment. Pavement sections should be verified with the jurisdictional authority prior to the time of construction.

Portland Cement Concrete Pavement Sections

1. It is recommended that no less than a six-inch (6") thick Portland Cement Concrete (P.C.C) section should be considered for design of the proposed traffic bearing pavement sections for this project (Portland Cement Association - Pacific Southwest Region, "Portland Cement Concrete Pavement Design For Light, Medium & Heavy Traffic", Third Printing, 1981). The concrete should have a minimum 28-day Modulus of Rupture of 500 psi (approximately 3,000 psi compressive strength). It is recommended that air entrainment of the concrete be provided.
2. The use of distributed steel in the pavement section is not required by the above structural pavement design, however, steel reinforcement, a minimum of #4 bars on 24 inch centers, is recommended to help control the effects of shrinkage and temperature cracking. **Reinforcement should be placed at mid-depth of the slab.** Steel reinforcement should not be carried across longitudinal or transverse joints.
3. Transverse contraction joints should be spaced no further than 12 feet apart. Transverse joints should be cut to a depth of 1/4 of the thickness of the concrete slab plus 1/4-inch by sawing or impressed plastic ribbons.
4. Longitudinal joints should be spaced no further than 12 feet apart. Longitudinal joints should be constructed full depth, or by weakening the concrete to a depth described above with a concrete saw or an impressed plastic ribbon.
5. All Portland Cement Concrete pavement sections should be placed on a minimum 12-inch thick subgrade compacted to at least 95% of maximum dry density as determined by ASTM D 1557 test procedures as recommended in Section A 5 of the Recommendations of this report.

I. Soil Chemical Testing

1. The results of soil chemistry tests performed on a sample of the near surface soils are included in Appendix B of this report. This information should be utilized by the design engineers for their interpretation pertaining to the reactivity of various construction materials (such as concrete and piping) with the soils.
2. It is recommended that Type II Portland Cement be used in the concrete for the proposed foundations, slab-on-grade, and drainage structures of this project.
3. Tests should be conducted during grading operations to verify the soil chemistry of the subgrade soils, especially if the soils are thoroughly mixed and additional fill is added during site preparation.

J. Slope Stability

Slope stability calculations were not performed because of anticipated minimal slope heights. If slope heights exceed five feet, engineering calculations should be performed to substantiate the stability of cut or fill slopes. Fill slopes should be constructed to a gradient not exceeding 2 horizontal to 1 vertical and should be overfilled and trimmed back to compacted material.

CLIENT OPTIONAL SERVICES

This report was based on the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to check conformance with the recommendations of this report. Maintaining ESSC as the geotechnical engineering consultant from beginning to end of this project will help provide continuity of services. The recommended services include, but are not necessarily limited to, the following:

- a. Consultation as required during the final design stages of the project.
- b. Review of grading and/or building plans.
- c. Observation and testing during site preparation, grading, placement of engineered fill, and backfill of utility trenches.
- d. Consultation as required during construction.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

The conclusions and recommendations submitted in this report relative to the proposed development are based, in part, upon the data obtained from two (2) exploratory soil borings, site observations during the field exploration operations, and past experience. The nature and extent of variations between subsurface soil conditions may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

In the event of any change in the assumed nature or design of the proposed project as planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing. This report is issued with the understanding that it is the responsibility of Yabito Corporation, or of their representatives, to insure that the information and recommendations contained in this report are called to the attention of the architects and engineers for the project and incorporated into the plan. It is also the responsibility of Yabito Corporation, or of their representatives, to insure that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

As the geotechnical engineers for this project ESSC strives to provide our services in accordance with generally accepted geotechnical engineering practices in this community at this time. No

warranty or guarantee is expressed or implied. This report was prepared for the exclusive use of Yabito Corporation, or of their authorized agents.

It is recommended that ESSC be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design specifications. If ESSC is not accorded the privilege of making this recommended review, ESSC can assume no responsibility for misinterpretation of the recommendations contained in this report.

The scope of ESSC's current services for this report did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around the site.

The statements contained in this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or the broadening of knowledge. Accordingly, the conclusions of this report may be invalidated, wholly or partially, by changes outside of ESSC's control, and should therefore be reviewed after one year.

CLOSURE

Earth Systems Southern California trusts this report is sufficient at this time and meets your current needs and appreciates this opportunity to provide professional geotechnical engineering services for this project. If you have any questions regarding the information contained in this report, or if you require additional geotechnical engineering services, please contact us.


Respectfully submitted,

**Earth Systems
Southern California**


Tim Thomson
Project Engineer
C.E. # 65661



Reviewed by:


Bruce A. Hick
Geotechnical Engineer
R. G. E. #2284



APPENDIX A

Site Plan & Vicinity Map

Boring Logs

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT <u>LESS</u> THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT <u>GREATER</u> THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

Proposed Warehouse/Auto Repair Facility
Quartz Hill, California



Earth Systems
Southern California

12/28/06

PL-06948-01

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE GRAINED SOILS

(Major Portion Retained on Number 200 Sieve)

Includes clean gravels and sands described as fine, medium or coarse, depending on distribution of grain sizes, and silty or clayey gravels and sands, condition is rated according to laboratory tests or estimated from resistance to sampler penetration.

Penetration Resistance* California Split Spoon (CSS) Blows/Ft		Penetration Resistance* Standard Pentrometer (SPT) Blows/Ft
0-5	Very Loose	0-4
5-15	Loose	5-10
15-40	Medium Dense	11-30
40-70	Dense	31-50
>70	Very Dense	>50

Fine Grained Soils

(Major Portion Passing the Number 200 Sieve)

Includes inorganic and organic silts and clays, gravelly, sandy or silty clays, and clayey silts. Consistency is rated according to laboratory tests or estimated from resistance to sampler penetration.

Penetration Resistance* California Split Spoon (CSS) Blows/Ft		Penetration Resistance* Standard Pentrometer (SPT) Blows/Ft
0-2	Very Soft	0-2
2-5	Soft	2-4
6-10	Medium Stiff	5-8
11-18	Stiff	9-15
19-36	Very Stiff	16-30
>36		>30

* Penetration resistance based on a 140 pound hammer falling approximately 30 inches.

Apparent Density/Consistency of Soil

Proposed Warehouse/Auto Repair Facility

Quartz Hill, California












**Earth Systems
Southern California**

12/28/06

PL-06948-01

SYMBOLS COMMONLY USED ON BORING LOGS

-  Modified California Split Barrel Sampler
-  Modified California Split Barrel Sampler - No Recovery
-  Standard Penetration Test (SPT) Sampler
-  Standard Penetration Test (SPT) Sampler - No Recovery
-  Perched Water Level
-  Water Level First Encountered
-  Water Level After Drilling
-  Pocket Penetrometer (tsf)
-  Vane Shear (ksf)

1. The location of borings were approximately determined by pacing and/or siting from visible features. Elevations of borings are approximately determined by interpolating between plan contours. The location and elevation of the borings should be considered

2. The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. This data has been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, tides, temperature, and other factors at the time measurements were made.

BORING LOG SYMBOLS	
Proposed Warehouse/Auto Repair Facility Quartz Hill, California	
 Earth Systems Southern California	
11/28/06	PL-06948-01



Boring No: B-1 Project Name: Proposed Warehouse/Auto Repair Facility Project Number: PL-06948-01 Boring Location: Per Plan	Drilling Date: October 31, 2006 Drilling Method: 8" Hollow Stem Drill Type: Mobil B-51 Logged By: Rob Ferguson
---	---

Depth (Ft.)	Sample Type		Penetration Resistance (Blows/6")	Symbol	USCS	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION OF UNITS
	Bulk	MOD Calif.						
			3,8		SM	102	2.5	Moderate Brown Silty Fine to Coarse Sand with Gravel, Dry, Loose.
			7,9		SM	111	4.8	Moderate Brown Silty Fine to Medium Sand, Slightly Moist, Medium Dense.
5			20,29		SM	115	6.4	Light Moderate Brown Silty Fine to Coarse Sand with Slight Gravel to 1/2", Slightly Moist, Dense.
			14,18		SM	123	4.5	Light Moderate Brown Silty Fine to Coarse Sand with Slight Gravel to 3/8", Slightly Moist, Medium Dense.
10			6,10		SM	117	5.6	Moderate Brown Silty Fine to Coarse Sand with Slight Gravel to 3/4", Slightly Moist, Medium Dense.
15			16,32		SM	125	11.9	Moderate Brown Silty Fine to Coarse Sand with Slight Clay, Moist, Dense.
20			50 for 6"		BX	120	3.5	Moderate Brown Schist Bedrock, Severly to Completely Weathered.
30			50 for 4"			****	1.5	
35	<p>Total Depth = 30.5 feet.</p> <p>No free groundwater was encountered at time of drilling.</p> <p>Bedrock encountered at a depth of approximately 18.6 feet.</p> <p>Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradational.</p>							

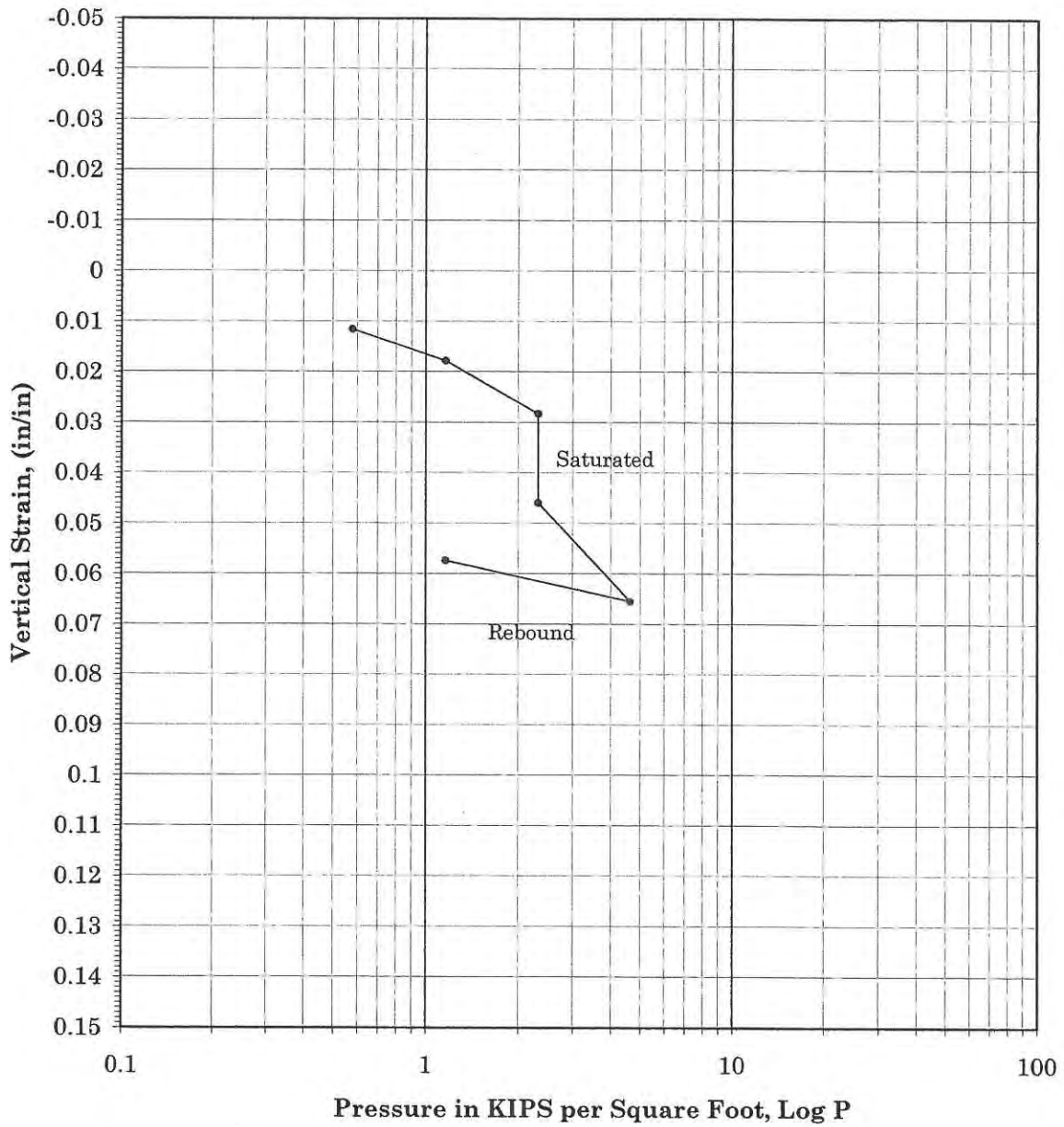


Boring No: B-2	Drilling Date: October 31, 2006
Project Name: Proposed Warehouse/Auto Repair Facility	Drilling Method: 8" Hollow Stem
Project Number: PL-06948-01	Drill Type: Mobil B-51
Boring Location: Per Plan	Logged By: Rob Ferguson

Depth (Ft.)	Sample Type			Penetration Resistance (Blows/6")	Symbol	USCS	Dry Density (pcf)	Moisture Content (%)	DESCRIPTION OF UNITS
	Bulk	SPT	MOD Calif.						
0						SM			Moderate Brown Silty Fine to Coarse Sand with Gravel to 3/4", Slightly Moist, Loose.
4.9						SM	105	4.1	
8.23						SM	108	6.2	Moderate Brown Silty Fine to Coarse Sand, Slightly Moist, Medium Dense.
28.31						SM	122	8.4	Light Moderate Brown Silty Fine to Coarse Sand with Slight Gravel to 1/2", Moist, Dense.
6.11						SM	109	3.7	Light Moderate Brown Silty Fine to Coarse Sand with Slight Gravel to 1", Slightly Moist, Medium Dense.
50 for 2"						BX			Moderate Brown Schist Bedrock, Severly to Completely Weathered.
<p>Total Depth = 15.3 feet.</p> <p>No free groundwater was encountered at time of drilling.</p> <p>Bedrock encountered at a depth of approximately 13.5 feet.</p> <p>Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradational.</p>									

APPENDIX B

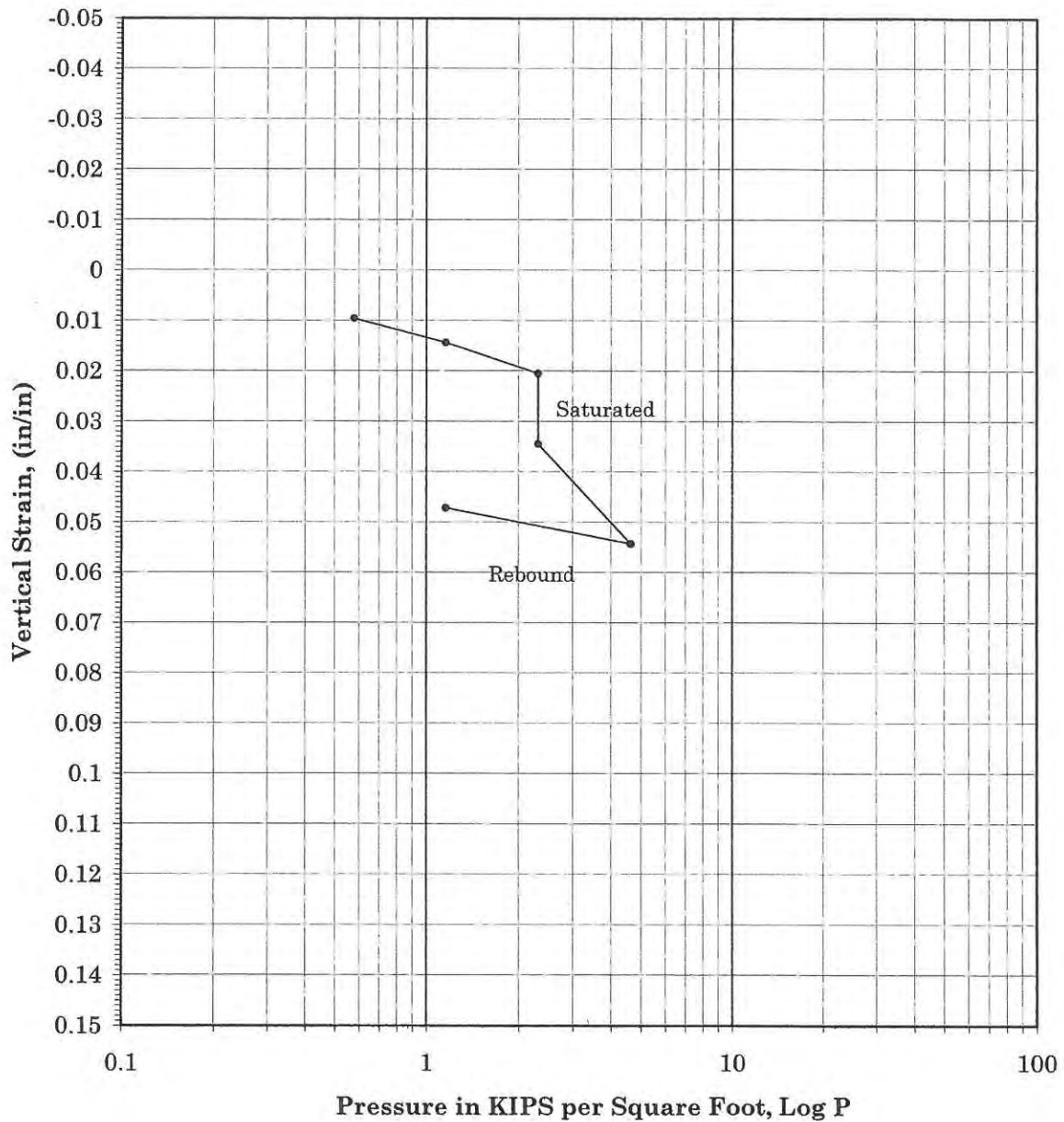
Summary of Laboratory Test Results



Sample Location: Boring 2@4'
 Material: Silty Fine to Coarse Sand (SM)
 Initial Dry Density: 108.0 PCF
 Moisture Content: 6.2%
 Percent Hydroconsolidation: 1.8%

Consolidation Test	
Proposed Warehouse/Auto Repair Facility	
Quartz Hill, California	
 Earth Systems Southern California	
12/28/2006	PL-06948-01

* Test Method: ASTM D-2435



Sample Location: Boring 1@5'
 Material: Silty Fine to Coarse Sand with Gravel (SM)
 Initial Dry Density: 115.0 PCF
 Moisture Content: 6.4%
 Percent Hydroconsolidation: 1.4%

Consolidation Test

Proposed Warehouse/Auto Repair Facility

Quartz Hill, California

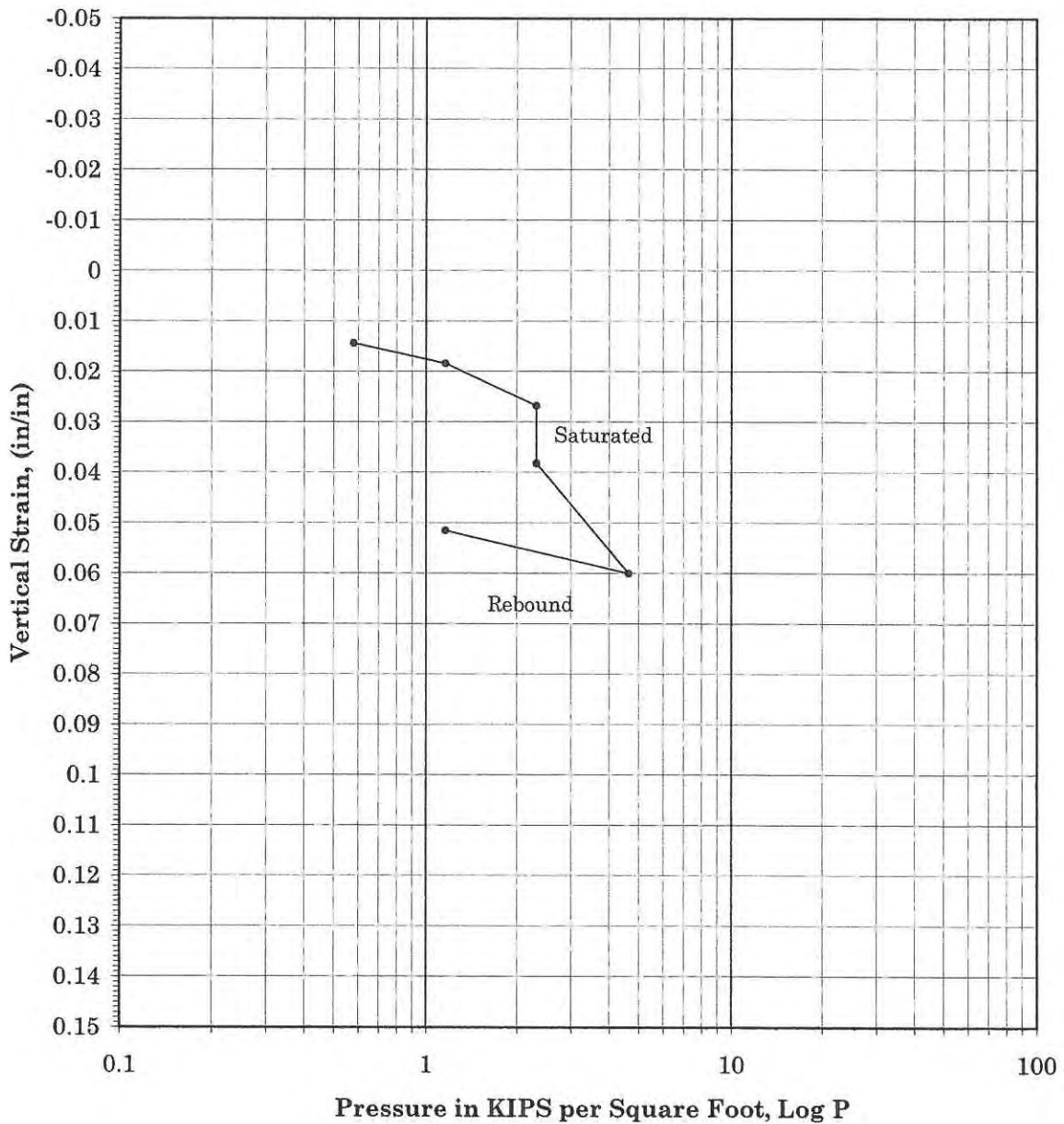


**Earth Systems
Southern California**

* Test Method: ASTM D-2435

12/28/2006

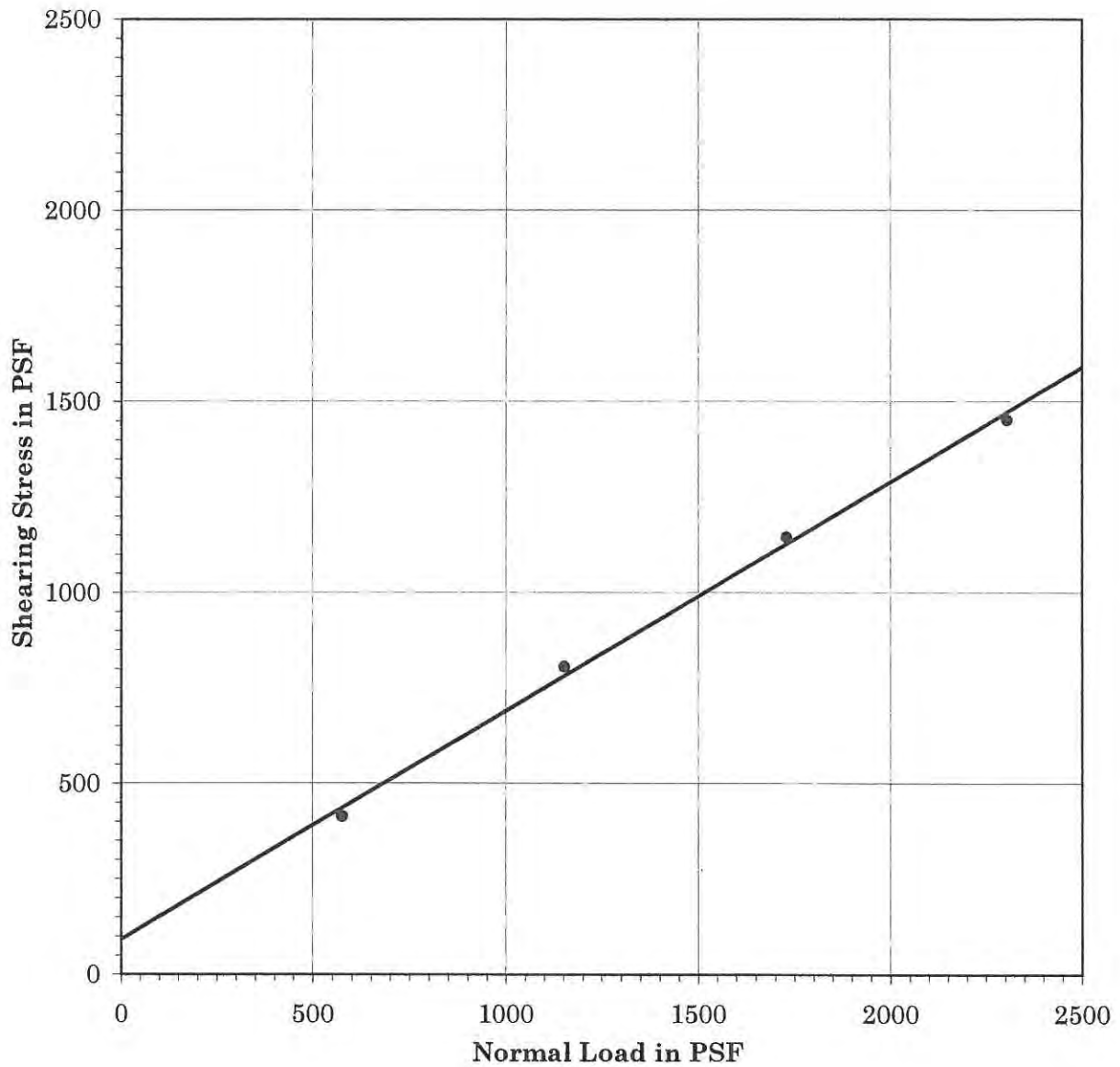
PL-06948-01



Sample Location: Boring 1@10'
 Material: Silty Fine to Coarse Sand with Gravel (SM)
 Initial Dry Density: 117.0 PCF
 Moisture Content: 5.6%
 Percent Hydroconsolidation: 1.1%

Consolidation Test	
Proposed Warehouse/Auto Repair Facility	
Quartz Hill, California	
 Earth Systems Southern California	
12/28/2006	PL-06948-01

* Test Method: ASTM D-2435



DIRECT SHEAR DATA*

Sample Location: Boring 1 @ 0-5', Remolded
 Material: Silty Fine to Coarse Sand with Gravel (SM)
 Dry Density (pcf): 117
 ϕ Angle of Friction (degrees): 31
 c Cohesive Strength (psf): 90
 Test Type: Residual

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

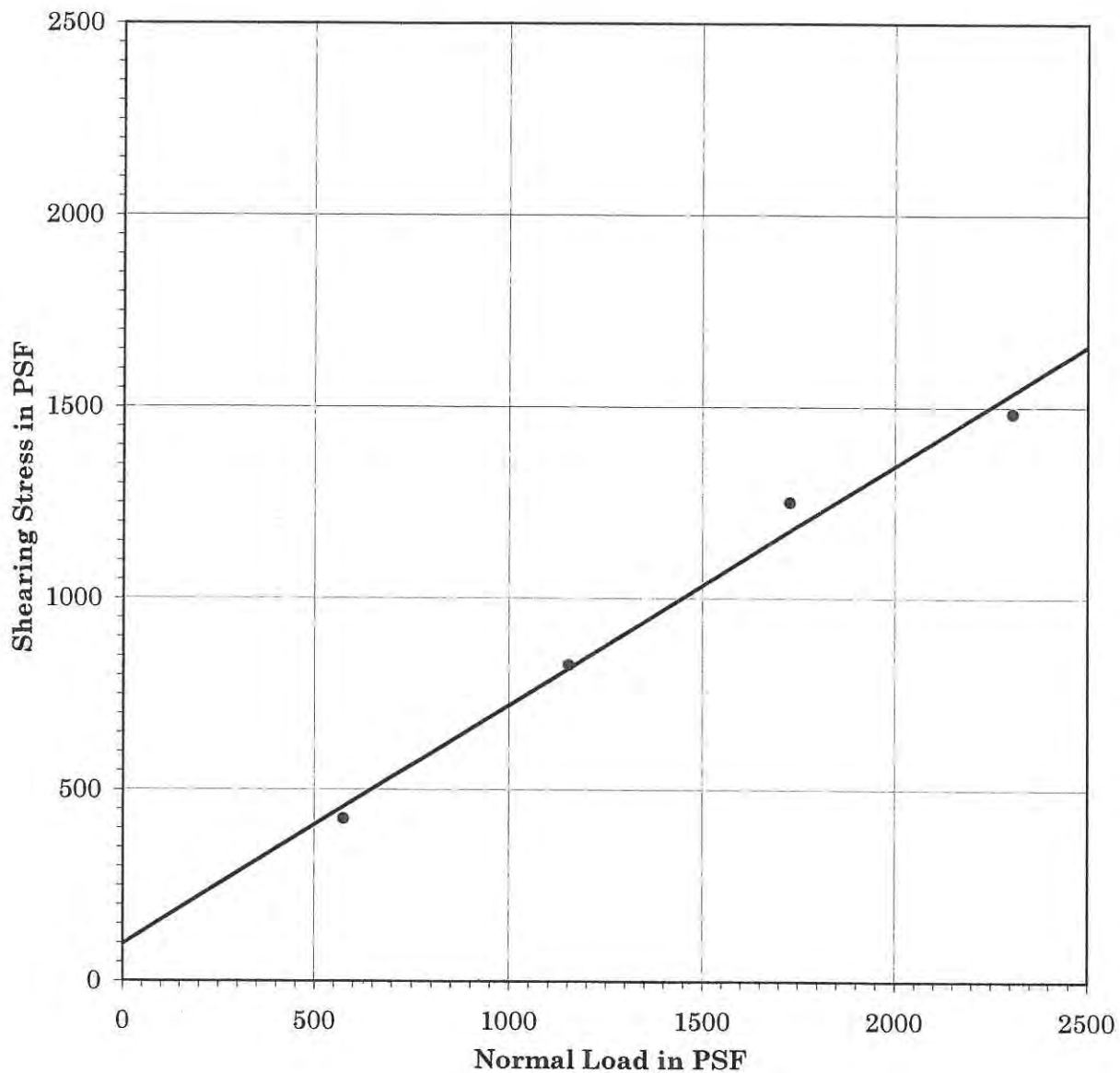
**Proposed Warehouse/Auto Repair Facility
 Quartz Hill, California**



**Earth Systems
 Southern California**

12/28/2006

PL-06948-01

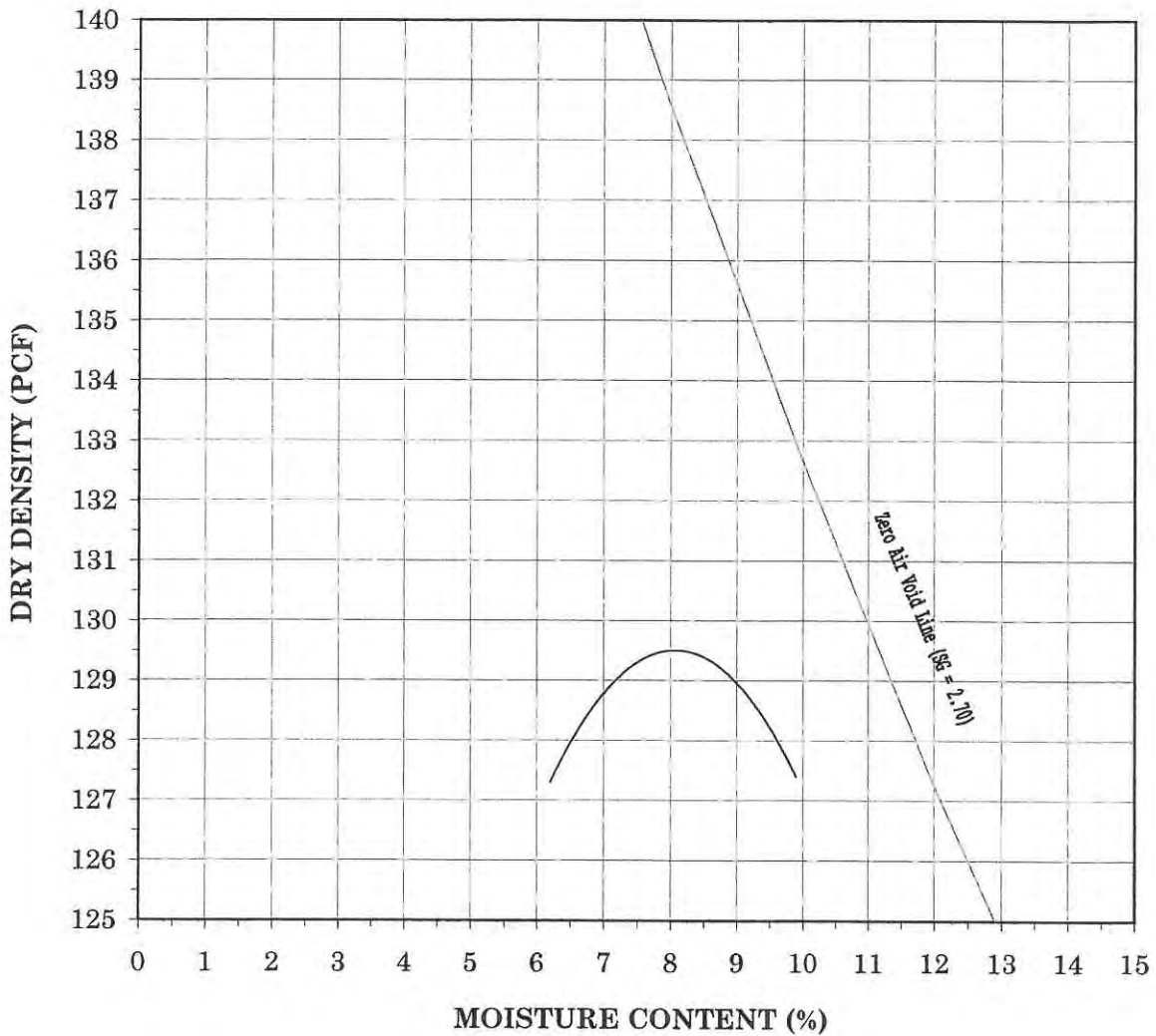


DIRECT SHEAR DATA*

Sample Location: Boring 1 @ 3', in-situ
 Material: Silty Fine to Medium Sand (SM)
 Dry Density (pcf): 111
 ϕ Angle of Friction (degrees): 32
 c Cohesive Strength (psf): 100
 Test Type: Residual

* Test Method: ASTM D-3080

DIRECT SHEAR TEST	
Proposed Warehouse/Auto Repair Facility Quartz Hill, California	
 Earth Systems Southern California	
12/28/2006	PL-06948-01



Maximum Density - Optimum Moisture Characteristics*

Sample Location: Boring 1 @ 0-5'

Material: Silty Fine to Coarse Sand with Gravel (SM)

Maximum Density (pcf): 129.5

Optimum Moisture: 8.0%

* Test Method: ASTM D-1557

MAXIMUM DENSITY - OPTIMUM MOISTURE	
Proposed Warehouse/Auto Repair Facility	
Quartz Hill, California	
 Earth Systems Southern California	
12/28/2006	PL-06948-01

TABLE B-I

SUMMARY OF EXPANSION INDEX* TESTING

<u>Sample Location</u>	<u>Material Description</u>	<u>Expansion Index</u>	<u>Expansion Potential</u>
Boring #1 @ 0-5 feet	Silty Sand (SM)	0	Very Low

*ASTM D 4829 Test Method



Table 1 - Laboratory Tests on Soil Samples

Earth Systems, So. Ca.
Auto Shop / Warehouse, Quartz Hill, CA
Your #PL-06-948-01, SA #06-1887LAB
3-Nov-06

Sample ID B2
@ 0-5'
SM

Resistivity Units
as-received ohm-cm 1,120,000
saturated ohm-cm 10,000

pH 7.4

Electrical

Conductivity mS/cm 0.08

Chemical Analyses

Cations

calcium Ca2+ mg/kg 45
magnesium Mg2+ mg/kg 7.2
sodium Na1+ mg/kg 21
potassium K1+ mg/kg 18

Anions

carbonate CO3 2- mg/kg ND
bicarbonate HCO3 1- mg/kg 58
flouride F1- mg/kg 0.7
chloride Cl1- mg/kg 3.4
sulfate SO4 2- mg/kg 41
phosphate PO4 3- mg/kg 7.2

Other Tests

ammonium NH4 1+ mg/kg 4.0
nitrate NO3 1- mg/kg ND
sulfide S2- qual na
Redox mV na

Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.
mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

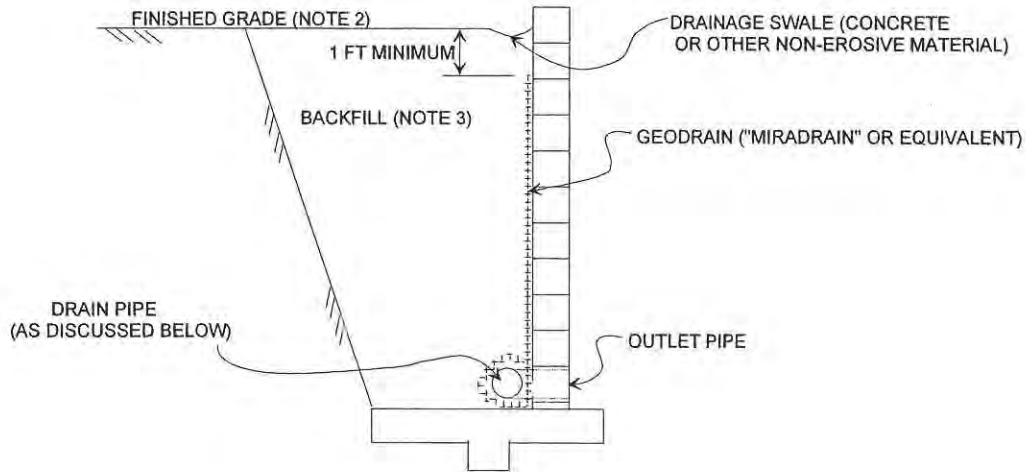
ND = not detected

na = not analyzed

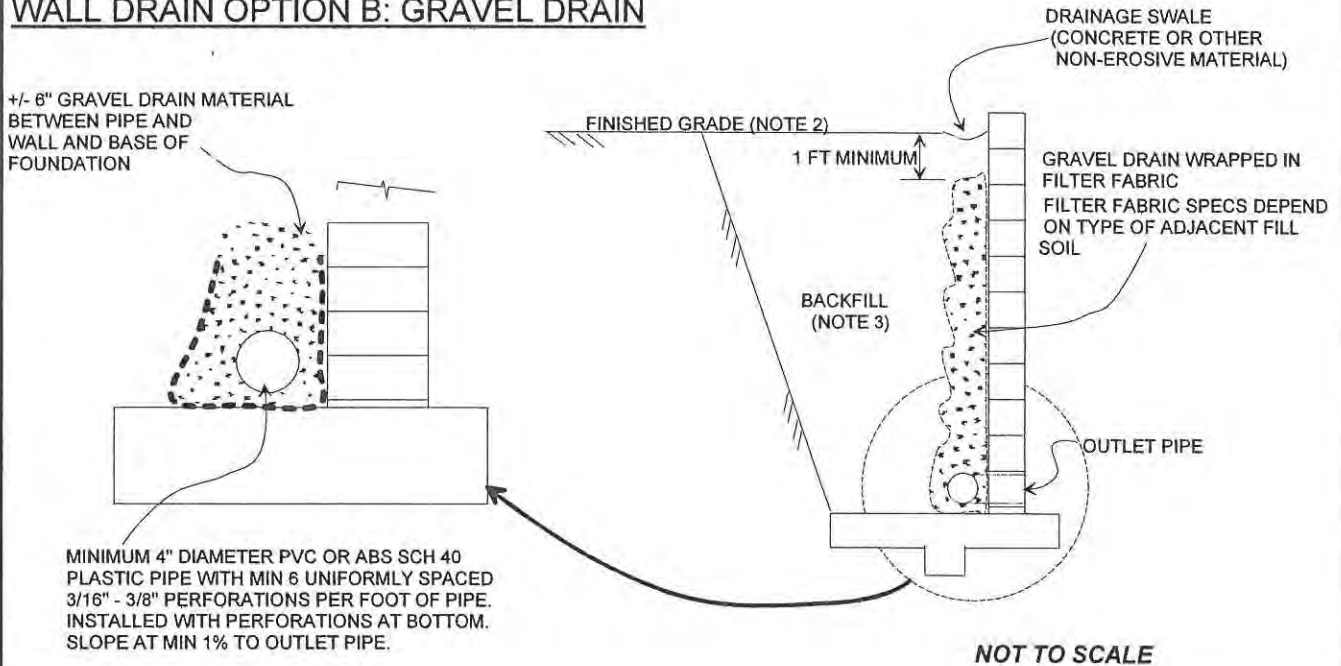
APPENDIX C

Design Plates

WALL DRAIN OPTION A: SYNTHETIC GEODRAIN



WALL DRAIN OPTION B: GRAVEL DRAIN



NOTE 1)

GRAVEL DRAIN MATERIAL SHALL CONSIST OF CLEAN PEA GRAVEL OR 3/8" GRAVEL WRAPPED IN APPROPRIATE FILTER FABRIC* OR CALIFORNIA CLASS II PERMEABLE MATERIAL.

NOTE 2)

USE DRAINAGE SWALE OR GRADE TO DRAIN AWAY FROM WALL.

NOTE 3)

ENGINEERED BACKFILL COMPACTED AS RECOMMENDED IN GEOTECHNICAL REPORT. SPECIAL PROVISIONS WILL APPLY TO MODERATELY OR HIGHLY EXPANSIVE BACKFILL.

NOTE 4)

WEEP HOLES IN BASE BLOCK COURSE ARE RECOMMENDED. CARE SHOULD BE TAKEN THAT WEEPHOLES ARE NOT COVERED BY EXTERIOR GRADE OR PAVING.

BACKDRAIN DETAILS - EXTERIOR WALLS

Proposed Warehouse/Auto Repair Facility
Quartz Hill, California



Earth Systems
Southern California

12/28/06

PL-06948-01

Appendix D

Phase I Environmental Site Assessment

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California
PL-06948-02

Prepared For
GRIFFIN/SWINERTON VENTURE

July 29, 2014

Prepared by
Earth Systems
Southern California
1024 West Avenue M-4
Palmdale, California 93551

(661) 948-7538
FAX (661) 948-7963



**Earth Systems
Southern California**

1024 West Avenue M-4
Palmdale, CA 93551
(661) 948-7538
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July 29, 2014

PL-06948-02

Griffin/Swinerton Venture
c/o Griffin Structures, Inc.
385 Second Street
Laguna Beach, California 92651

Attention: Mr. Steve Mickle

Subject: **Phase I Environmental Site Assessment**
APN 3101-013-058
Avenue M-2, West of 50th Street West
Quartz Hill, Los Angeles County, California

Presented herewith is Earth Systems Southern California's Phase I Environmental Site Assessment Report prepared, as authorized, for Assessor's Parcel Number 3101-013-058, located along the south side of Avenue M-2, west of 50th Street West in Quartz Hill, Los Angeles County, California. The property currently consists of vacant undeveloped land. Earth Systems Southern California appreciates this opportunity to be of service. If you need clarification of the information contained in this report, or if we can be of additional service, please contact the undersigned.

Respectfully submitted,

**Earth Systems
Southern California**

A handwritten signature in blue ink, appearing to read 'T. Thomson'.

Tim Thomson
Project Manager

Distribution: 3 – Griffin/Swinerton Venture

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- Plate II Site Sketch
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- Appendix B User Provided Information Questionnaire
- Appendix C Qualifications Statement

**PHASE I
ENVIRONMENTAL SITE ASSESSMENT
APN 3101-013-058
AVENUE M-2, WEST OF 50TH STREET WEST
QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA**

SUMMARY

Historical research conducted for this assessment indicates that the property consisted of vacant undeveloped land in 1917. The property consisted of an orchard in 1928. From 1936 to 2014 the property consisted of vacant undeveloped land. According to Ms. Alleguez, counsel for Yabito Corp, when Yabito Corp. purchased the property there was an old house located on the property. However, no evidence of this structure was observed on historic topographic maps or aerial photographs reviewed for this assessment. No significant data gaps or data failures were encountered during the course of this assessment.

The property currently consists of vacant undeveloped land. Regulated quantities of hazardous materials including aboveground storage tanks (ASTs), underground storage tanks (USTs), and 55-gallon drums of chemicals were not observed to be used, stored, or disposed of on the property. No current or past uses likely to involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products were identified during the site reconnaissance. No obvious recognized environmental conditions (RECs) were observed for the property during the recent site reconnaissance.

The subject property and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release site on any of the 109 databases reviewed for this assessment. Institutional controls and engineering controls were not identified for the subject property. Oil and gas wells were not identified on the subject property. The search of regulatory lists for hazardous materials sites in the vicinity of the property did not identify any obvious potential off-site sources of contamination within the ASTM-specified approximate minimum search distance of the subject property. No obvious RECs for the property were noted from the 109 databases reviewed.

Based on the research conducted for this assessment, it is Earth Systems Southern California's (Earth Systems') opinion that one REC was identified for the subject property:

1. Historical research conducted for this study indicates that the property consisted of an orchard in 1928. It is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during this time period. It is not known if any residual chemicals remain in the soil. These compounds tend to biodegrade over time, and it is Earth Systems' experience that residual concentrations of these chemicals found at similar sites are rarely discovered at levels requiring regulatory action. The subject property has consisted of vacant undeveloped land for approximately 78 years. If this is a concern, soil sampling and laboratory analysis can be conducted to determine the actual presence or absence of agricultural chemicals in the soils on the property. Some counties and/or cities require soil testing on current and/or former agricultural properties prior to approving development.

No historical RECs or controlled RECs were identified during the course of this assessment. Aside from the past agricultural use of the property, no obvious conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products on, at, in, or to the subject property were identified during the course of this assessment. This opinion is based on the information provided to Earth Systems during the course of this assessment. Any data that is missing or was withheld from Earth Systems could alter our opinion.

INTRODUCTION

This report presents the findings of Earth Systems' Phase I Environmental Site Assessment (ESA) conducted for the above referenced approximate 1.75-acre site located along the south side of Avenue M-2, west of 50th Street West in Quartz Hill, Los Angeles County, California. The property is identified as Assessor's Parcel Number (APN) 3101-013-058, and currently consists of vacant undeveloped land.

The purpose of this assessment is to permit the client to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability. This assessment is intended to constitute "all appropriate inquiry (AAI) into the previous ownership and uses of the property consistent with good commercial or customary practice as defined in CERCLA, 42 U.S.C. §9601(35)(B)". AAI is only the first step to establishing the ability to qualify for CERCLA liability protection – "continuing obligations" apply after purchase.

This evaluation has been performed at your request to identify, to the extent feasible pursuant to the processes prescribed in ASTM E 1527-13, RECs in connection with the subject property. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. Hazardous substances are defined pursuant to CERCLA 42 U.S.C. §9601(14), as interpreted by EPA regulations and the courts. A controlled REC is defined as "a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls". A historical REC is defined as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls".

Earth Systems performed this Phase I ESA for Griffin/Swinerton Venture, in accordance with ASTM Standard E 1527-13, *Standard Practice for Environmental Site Assessments*. This report is prepared for the sole use and benefit of Griffin/Swinerton Venture, and is based in part upon data provided by Griffin/Swinerton Venture and their representatives. Neither this report, nor

any of the information contained herein, shall be used or relied upon for any other purpose by any person or entity other than Griffin/Swinerton Venture.

Scope of Services

Earth Systems' services were performed in accordance with the proposal dated July 11, 2014 and in general conformance to the guidelines presented in ASTM Standard E 1527-13, *Standard Practice for Environmental Site Assessments*. Earth Systems performed the following tasks in order to identify RECs on and in the immediate vicinity of the subject site:

- Conducted a visual survey of the property to evaluate on-site hazardous materials use, storage, and disposal activities.
- Performed a visual reconnaissance of the immediately adjacent sites.
- Interviewed an owner representative "user" regarding specialized knowledge, purchase price, and commonly known information via a User Provided Information Questionnaire. The property currently consists of vacant undeveloped land, and therefore operators and occupants of the property were not interviewed during the site reconnaissance.
- Reviewed readily available literature and historic documentation for the property to determine historic site usage from the time of the property's first developed use. Historical documents prior to 1940 were reviewed when available. Documents reviewed include historic U.S.G.S. topographic maps, historic city directories, local building department records, Sanborn fire insurance maps, and historic aerial photographs.
- Reviewed 109 reasonably ascertainable regulatory agency databases concerning chemical use, storage, and disposal for the subject property and surrounding sites.
- Searched for environmental cleanup liens and activity and use limitations (AULs).
- Prepared this report presenting the findings, conclusions and recommendations.

SITE DESCRIPTION

The subject property is identified as APN 3101-013-058, and is located along the south side of Avenue M-2, west of 50th Street West in Quartz Hill, Los Angeles County, California. The approximate 1.75-acre property currently consists of vacant undeveloped land. The owner of the property is identified as Yabito Corporation. Access to the property is made from Avenue M-2. The surrounding land uses in the immediate vicinity of the property are a mix of residential, commercial, and vacant land (see Plates I, II, and III: Vicinity Map, Site Sketch, and Aerial Photograph, respectively).

The property is identified as a portion of the northeast quarter of Section 2, Township 6 North, Range 13 West, San Bernardino Base Meridian. The elevation of the property is approximately 2,510 feet above sea level. The property is relatively flat, with an overall downward gradient towards the north (U.S.G.S. Topographic Map, Lancaster West Quadrangle, 1974).

Hydrology

Specific depth to groundwater information was not available for the property. Wells were not observed on the property during the recent site reconnaissance. Depth to groundwater was measured at 194.8 feet below the ground surface (bgs) on March 1, 2005 in a well located approximately 2.5-miles north-northeast of the property (Los Angeles County Hydrologic Records). The regional groundwater aquifer in the Quartz Hill area, which supplies water to the Antelope Valley, is estimated to be between 200 and 300 feet bgs. In the absence of reported groundwater flow direction information, it is assumed that groundwater follows surface topography, and flows towards the north.

The property is not located within the bounds of a 100- or 500-year flood zone. The property is not identified as a wetland area on the National Wetland Inventory (EDR Inquiry Number 4004674.2s).

SITE RECONNAISSANCE

A field reconnaissance of the site was conducted by Robert Ferguson, Staff Geologist, on July 23, 2014. Mr. Ferguson is an Environmental Professional with a Bachelor of Science degree in geology, who has over fourteen (14) years experience conducting site reconnaissances for Phase I ESAs. The property was visually and/or physically observed by driving along the perimeter and walking through the property. Photographs of the subject property are included in Appendix A. The following observations were made:

The subject site consists of the approximately 1.75 acres of vacant undeveloped land located along the south side of Avenue M-2, west of 50th Street West. The property is identified as APN 3101-013-058. Access to the property is made from Avenue M-2. The surrounding land uses in the vicinity of the property are a mix of residential, commercial, and vacant land.

Regulated quantities of hazardous materials including ASTs, USTs, and 55-gallon drums were not observed to be used, stored, or disposed of on the property. Waste management and solid waste disposal activities were not observed on the property. A pile of trash and debris including brush and wood pallets was observed on the southwest portion of the property.

The property consists of vacant undeveloped land, and therefore electric, gas, water, sewage disposal, and refuse collection services are not provided to the property. No buildings, improved roads, floor drains, storm drains, wells, basements, elevators, sumps, hoists, or hydraulic lifts were observed on the property. Pole-mounted utility lines and a pole-mounted transformer are located along the northern property boundary.

Neither discolored water, stained soils, stained pavement, distressed vegetation, nor the presence of an obvious wastewater discharge were noticeable on the subject property. Strong, pungent, or noxious odors were not noticeable during the site reconnaissance. Standing surface waters including pits, ponds, and lagoons were not observed on the property. Storm water flows onto adjacent parcels and streets.

No current or past uses likely to involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products were identified during the site reconnaissance. No obvious RECs were observed for the property during the site reconnaissance.

SURROUNDING PROPERTIES

The following current uses of adjoining properties were visually and/or physically observed during the recent site reconnaissance:

Adjacent to the north – Avenue M-2, followed by an equipment storage yard and vacant land.

Adjacent to the south – Residences.

Adjacent to the west – Westside Body and Paint, located at 5054 West Avenue M-2.

Adjacent to the east – Quartz Hill Grange Hall, located at 41843 50th Street West, and residences.

INTERVIEWS AND USER PROVIDED INFORMATION

All interviews were conducted by Amy E. Lee, a Registered Environmental Property Assessor with over nineteen (19) years experience conducting Phase I ESAs.

Earth Systems conducted an interview with a representative of the property owner, Ms. Tina M. Alleguez, counsel for Yabito Corp., via a User Provided Information Questionnaire. A copy of the completed questionnaire is included in Appendix B. Ms. Alleguez is not aware of any RECs for the property, including environmental cleanup liens, activity and land use limitations, engineering controls, or institutional controls. According to Ms. Alleguez, when Yabito Corp. purchased the property, there was an old house on the land. However, no evidence of this structure was observed on historic topographic maps or aerial photographs reviewed for this assessment. Earth Systems conducted a geotechnical study of the property in 2006. Ms. Alleguez is not aware of any obvious indicators that point to the presence or likely presence of contamination at the property. The purchase price being paid for this property

reasonably reflects the fair market value of the property. This Phase I ESA is being conducted for a sales transaction.

A preliminary title report prepared for the property by Fidelity National Title Company dated April 16, 2014 was provided to Earth Systems for review. The owner of the property is listed as Yabito Corporation. No obvious RECs were identified for the property from the title report review. The property currently consists of vacant undeveloped land, and therefore operators and occupants of the property were not interviewed during the recent site reconnaissance.

Local Environmental Health Department

Earth Systems personnel contacted the Los Angeles County Department of Public Works, Environmental Programs Division to determine if any permits for installation and/or removal of underground storage tanks (USTs) exist for the subject property. No records are on file for the subject property.

RECORDS REVIEW

In order to obtain information regarding current and past RECs at the site, reasonably ascertainable information from several sources was researched. The results of this research are outlined below.

Aerial Photographs

In an attempt to identify the likelihood of past property uses having led to RECs in connection with the property or surrounding area, select aerial photographs of the subject property and surrounding areas were reviewed. Photographs taken in 1928, 1948, 1953, 1968, 1974, 1989, 1994, 2005, 2009, 2010, and 2012 were available for review.

The property consisted of an orchard in 1928. From 1948 to 2012 the property consisted of vacant undeveloped land that was not used for agricultural purposes. No buildings or improved roads were observed on the property from 1928 to 2012.

Orchards adjoined the property to the north, south, west, and east in 1928. Vacant lands adjoined the property to the south, west, and east from 1948 to 1953. Residences adjoined the property to the west and east by 1968, and to the south by 1974. The adjoining parcel to the west changed from residential to commercial use by 1989. The adjoining parcels to the south and east remained residential until 2012, and the adjoining parcel to the west remained commercial until 2012.

Avenue M-2 was unpaved along the northern property boundary from 1948 to 2005, followed by vacant land. Avenue M-2 was paved by 2009, followed by an equipment storage yard and vacant land until 2012.

One REC was identified for the property and adjoining parcels, which were occupied by orchards in 1928. It is possible that agricultural chemicals were applied to the orchards during this time period. These compounds tend to biodegrade over time, and it is Earth Systems' experience that residual concentrations of these chemicals found at similar sites are rarely discovered at levels requiring regulatory action.

Historical Topographic Maps

In an attempt to assess past property uses which may have had an environmental impact on the property or surrounding area, select historical topographic maps depicting the subject property and surrounding areas were reviewed. Maps dated 1917, 1936, 1951, 1958, and 1974 were available for review.

The property consisted of vacant land from 1917 to 1974. No roads, buildings, wells, or orchards were shown on the subject property. The property was surrounded by vacant land from 1917 to 1936. Residences were located to the south of the property by 1951, and residences were located to the west and east of the property by 1958. Avenue M-2 adjoined the property to the north in 1958, followed by vacant land.

No obvious RECs were identified for the property or surrounding areas from the historic topographic maps reviewed.

Sanborn Fire Insurance Maps

Sanborn fire insurance maps for Quartz Hill were reviewed. Coverage of the property was not available (EDR Inquiry Number 4004674.3).

City Directories

Business directories including city, cross reference, and telephone directories were reviewed, if available, at approximate five-year intervals for the years spanning from 1975 through 2013. During the course of this study, Earth Systems utilized Environmental Data Resources, Inc. (EDR) as an information source for historic city directories. No listings were found for buildings located on the subject property from 1975 to 2013.

Building Permits

During the course of this study, Earth Systems utilized EDR as an information source for local building department records. No building permits were found for the subject property.

Munger Oil and Gas Maps

Locations of oil and gas wells were reviewed in the Munger Map Book of California and Alaska Oil and Gas Fields. According to pages W-59 and W-60, no oil or gas wells have been drilled on the subject property.

Environmental Liens and AULs

During the course of this assessment, Earth Systems utilized EDR as an information source for environmental cleanup liens and AULs. A search was made for the existence of environmental cleanup liens and AULs against the subject property that are filed or recorded under federal,

tribal, state, or local law. No environmental liens or AULs were identified for the property. The owner of the property was identified as Yabito Corporation.

REGULATORY AGENCY DATABASE REVIEW

To ascertain reported areas of possible environmental impairment on or in the vicinity of the subject property, one hundred and nine (109) federal, state, local, tribal, and proprietary records databases were reviewed. During the course of this study, Earth Systems utilized EDR as an information source for environmental records. Records were also reviewed on the California Regional Water Quality Control Board's GeoTracker website. A complete copy of the EDR Radius Map with GeoCheck Report is available upon request within 30 days of the completion of this report.

The subject property and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites on any of the 109 databases reviewed. Institutional controls and engineering controls were not identified for the subject property. Oil and gas wells were not identified on the subject property. Although it was not identified on any of the databases reviewed, it is assumed that the adjoining property to the west, Westside Body and Paint located at 5054 West Avenue M-2, uses and stores hazardous materials. Based on the fact that this site was not identified as having had a reported spill or release of hazardous materials, it is not considered a REC for the subject property.

Fifteen (15) hazardous materials use, storage, disposal, or release sites were identified within the approximate minimum search distance of the subject property. Three (3) of the 15 sites have been identified as having had a reported spill or release of hazardous materials. However, two (2) of the three identified hazardous materials release sites have received regulatory agency closure, and they are therefore not considered a REC for the subject property. The twelve (12) identified hazardous materials use, storage, or disposal sites that have not had a reported spill or release of hazardous materials are not considered a REC for

the subject property. The following one (1) identified hazardous materials release site has not received regulatory agency closure:

1. Minute Serve Dairy, located approximately 500-feet northeast of the property at 41940 50th Street West, is identified on the Leaking Underground Storage Tank (LUST) database. Soil samples were collected from this site following UST removal activities in 1997, and soil contaminated with gasoline was reported. The status of this case is listed as "leak being confirmed". It does not appear that any work has been done at this site since 1997. Based on the location of this site and the fact that groundwater contamination has not been reported at this site, it is not considered a REC for the subject property.

No obvious RECs for the property or adjoining parcels were noted from the 109 government databases reviewed. No obvious potential off-site sources of contamination were identified within the ASTM-specified approximate minimum search distance of the subject property.

FINDINGS AND OPINION

Historical research conducted for this assessment indicates that the property consisted of vacant undeveloped land in 1917. The property consisted of an orchard in 1928. From 1936 to 2014 the property consisted of vacant undeveloped land. According to Ms. Alleguez, counsel for Yabito Corp, when Yabito Corp. purchased the property there was an old house located on the property. However, no evidence of this structure was observed on historic topographic maps or aerial photographs reviewed for this assessment. No significant data gaps or data failures were encountered during the course of this assessment.

The property currently consists of vacant undeveloped land. Regulated quantities of hazardous materials including ASTs, USTs, and 55-gallon drums of chemicals were not observed to be used, stored, or disposed of on the property. No current or past uses likely to involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products

were identified during the site reconnaissance. No obvious RECs were observed for the property during the recent site reconnaissance.

The subject property and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release site on any of the 109 databases reviewed for this assessment. Institutional controls and engineering controls were not identified for the subject property. Oil and gas wells were not identified on the subject property. The search of regulatory lists for hazardous materials sites in the vicinity of the property did not identify any obvious potential off-site sources of contamination within the ASTM-specified approximate minimum search distance of the subject property. No obvious RECs for the property were noted from the 109 databases reviewed.

Based on the research conducted for this assessment, it is Earth Systems' opinion that one REC was identified for the subject property:

1. Historical research conducted for this study indicates that the property consisted of an orchard in 1928. It is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during this time period. It is not known if any residual chemicals remain in the soil. These compounds tend to biodegrade over time, and it is Earth Systems' experience that residual concentrations of these chemicals found at similar sites are rarely discovered at levels requiring regulatory action. The subject property has consisted of vacant undeveloped land for approximately 78 years. If this is a concern, soil sampling and laboratory analysis can be conducted to determine the actual presence or absence of agricultural chemicals in the soils on the property. Some counties and/or cities require soil testing on current and/or former agricultural properties prior to approving development.

No historical RECs or controlled RECs were identified during the course of this assessment. Aside from the past agricultural use of the property, no obvious conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum

and petroleum products on, at, in, or to the subject property were identified during the course of this assessment. This opinion is based on the information provided to Earth Systems during the course of this assessment. Any data that is missing or was withheld from Earth Systems could alter our opinion.

CONCLUSIONS

Earth Systems has performed a Phase I ESA in general conformance with the scope and limitations of ASTM Practice E 1527-13 of APN 3101-013-058, located along the south side of Avenue M-2, west of 50th Street West in Quartz Hill, Los Angeles County, California. The property currently consists of vacant undeveloped land. Any exceptions to, or deletions from, this practice are described under the Scope of Services on page 4 of this report.

This assessment has revealed one REC in connection with the subject property.

1. Historical research conducted for this study indicates that the property consisted of an orchard in 1928. It is possible that agricultural chemicals (insecticides, pesticides, and/or herbicides) were applied to the property during this time period. It is not known if any residual chemicals remain in the soil. These compounds tend to biodegrade over time, and it is Earth Systems' experience that residual concentrations of these chemicals found at similar sites are rarely discovered at levels requiring regulatory action. The subject property has consisted of vacant undeveloped land for approximately 78 years. If this is a concern, soil sampling and laboratory analysis can be conducted to determine the actual presence or absence of agricultural chemicals in the soils on the property. Some counties and/or cities require soil testing on current and/or former agricultural properties prior to approving development.

No historical RECs or controlled RECs were identified during the course of this assessment. Aside from the past agricultural use of the property, no obvious conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum

and petroleum products on, at, in, or to the subject property were identified during the course of this assessment. This opinion is based on the information provided to Earth Systems during the course of this assessment. Any data that is missing or was withheld from Earth Systems could alter our opinion.

CERTIFICATION

This Phase I ESA Report has been prepared by Earth Systems at the request of Griffin/Swinerton Venture, and has been reviewed and approved by the undersigned. The research, interviews, and field work conducted for this assessment were completed by Amy E. Lee, Registered Environmental Property Assessor, and Robert Ferguson, Staff Geologist. Mrs. Lee is an Environmental Professional with over nineteen (19) years experience conducting Phase I ESAs. Mr. Ferguson is an Environmental Professional with a Bachelor of Science degree in geology, who has over fourteen (14) years experience conducting site reconnaissances for Phase I ESAs.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR §312.10(b). We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the "all appropriate inquiries" in conformance with the standards and practices set forth in 40 CFR Part 312.

The scope of effort upon which this report is based is intended to provide a reasonable assessment of environmental risk for the client. This effort was not absolutely exhaustive and the quality of the assessment is necessarily dependent on the quality of the information supplied to Earth Systems by all sources cited. Inspection and data collection were carried out by Earth Systems staff according to accepted standards. However, inspection was mainly surficial and the identification of possible environmental risks or contamination was limited accordingly. No ESA can wholly eliminate uncertainty regarding the potential for RECs in

connection with a property. Performance of this assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property. Therefore, this report does not carry with it any express or implied warranty that environmental risks associated with the subject site have been totally excluded or precisely characterized.


Earth Systems trusts this report is sufficient at this time and meets your current needs. Earth Systems appreciates the opportunity to provide professional environmental services for this project. If you have any questions regarding this information or require additional studies, please contact this office at your convenience.

Reviewed and Approved by:

Earth Systems
Southern California



Amy E. Lee, REPA #157732
Environmental Assessor



Tim Thomson, C.E. #65661
Project Manager

7-29-14

LIMITATIONS

This report has been prepared for the exclusive use of Griffin/Swinerton Venture, as it pertains to the property described herein. The conclusions in this report are opinions, based on readily available information obtained to date, within the scope of work authorized by Griffin/Swinerton Venture. Use of, or reliance on the information and opinions contained in this report by other parties without first consulting this office is at those parties' own risk.

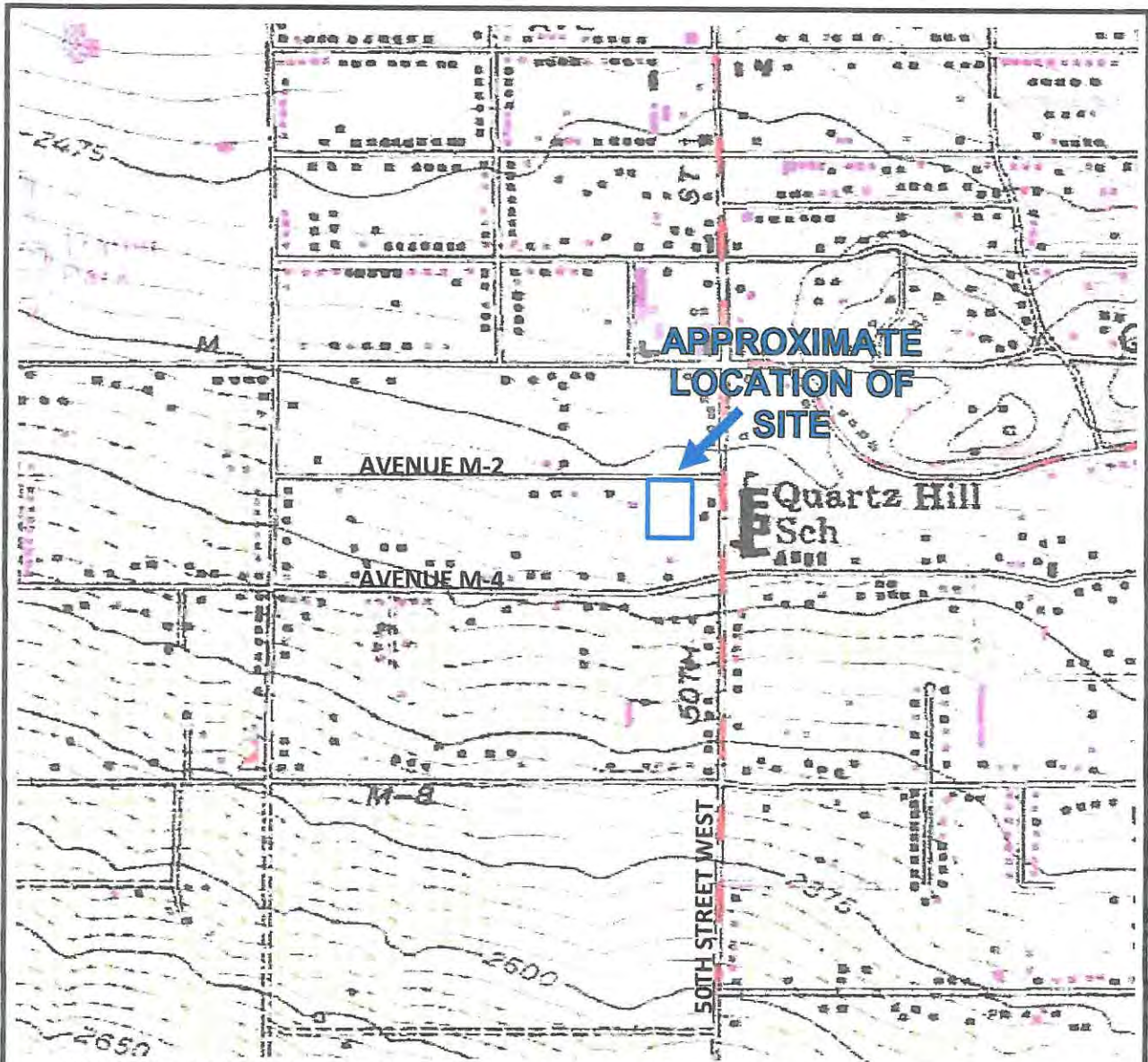
The results contained in this report are based upon the information acquired during this assessment. It is possible that variations could exist beyond or between points observed during the course of this assessment. Also, changes in observed conditions could occur at some time in the future due to contamination migration, variations in rainfall, temperature, and/or other factors not apparent at the time of the field evaluation.

It should be noted that any level of environmental assessment cannot ascertain that a property is completely free of chemical or toxic substances; therefore, Earth Systems cannot offer the certification of a "clean" site. Earth Systems believes that the scope of work performed has been appropriate to allow the client to make informed business decisions.

Earth Systems has strived to prepare this report in accordance with generally accepted geologic/environmental practices in this community, as well as good commercial and customary practice for ESAs. No warranty or guarantee is expressed or implied.

REFERENCES

- Averill H. Munger, 1994, Munger Map Book of California and Alaska Oil and Gas Fields.
- Environmental Data Resources, Inc., The EDR Radius Map Report with GeoCheck, Inquiry Number: 4004674.2s, July 14, 2014.
- Environmental Data Resources, Inc., The EDR Certified Sanborn Map Report, Inquiry Number: 4004674.3, July 14, 2014.
- Environmental Data Resources, Inc., The EDR-City Directory Image Report, Inquiry Number: 4004674.5, July 15, 2014.
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- Fidelity National Title Company, Preliminary Report, April 16, 2014.
- Los Angeles County Department of Public Works, Environmental Programs Division, Personal Communication, July 23, 2014.
- Los Angeles County Department of Public Works, Hydrologic Records Department, Personal Communication, July 23, 2014.
- Regional Water Quality Control Board, GeoTracker website, July 25, 2014.
- U.S.G.S. Topographic Map, 30-minute Elizabeth Lake Quadrangle, 1917.
- U.S.G.S. Topographic Maps, 6-minute Del Sur Quadrangle, 1936 and 1951.
- U.S.G.S. Topographic Maps, 7.5-minute Lancaster West Quadrangle, 1958 and 1974.



SOURCE: USGS Topographic Map, 7.5-Minute Lancaster West, California Quadrangle, 1958, Photorevised 1974

PLATE I



APPROXIMATE SCALE: 1" = 1,000'

VICINITY MAP	
APN 3101-013-058 AVENUE M-2, WEST OF 50TH STREET WEST QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA	
EARTH SYSTEMS SOUTHERN CALIFORNIA	
JULY 29, 2014	PL-06948-02

EQUIPMENT STORAGE
YARD

VACANT
LAND

WEST AVENUE M-2

WESTSIDE BODY
AND PAINT
5054 WEST AVENUE M-2

VACANT
LAND

QUARTZ HILL
GRANGE HALL
41843 50TH ST. WEST

RESIDENCES

RESIDENCES

PLATE II



NOT TO SCALE

SITE SKETCH

APN 3101-013-058
AVENUE M-2, WEST OF 50TH STREET WEST
QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA

EARTH SYSTEMS
SOUTHERN CALIFORNIA

JULY 29, 2014

PL-06948-02



**APPROXIMATE
LOCATION OF
SITE**

SOURCE: Microsoft Bing Maps 2014

PLATE III



APPROXIMATE SCALE: 1" = 80'

AERIAL PHOTOGRAPH	
APN 3101-013-058 AVENUE M-2, WEST OF 50TH STREET WEST QUARTZ HILL, LOS ANGELES COUNTY, CALIFORNIA	
EARTH SYSTEMS	
SOUTHERN CALIFORNIA	
JULY 29, 2014	PL-06948-02

Appendix A

Site Photographs



Photo 1. Southeast-facing view from the northwest corner of the property.



Photo 2. View facing northeast from the southwest corner of the property.



Photo 3. View facing northwest from the southeast portion of the property.



Photo 4. Southwest-facing view from the northeast portion of the property.

Appendix B

User Provided Information Questionnaire

USER PROVIDED INFORMATION QUESTIONNAIRE

DATE: July 15, 2014

CLIENT: Griffin/Swinerton Venture

PROPERTY: APN 3101-013-058

THE FOLLOWING INFORMATION MUST BE PROVIDED TO EARTH SYSTEMS SOUTHERN CALIFORNIA (ESSC) IN ORDER TO MEET ASTM STANDARD 1527-05. OUR REPORT CANNOT BE COMPLETED UNTIL WE RECEIVE THE FOLLOWING INFORMATION. PLEASE COMPLETE THIS FORM AND FAX IT TO ESSC AT 861-848-7963 AT YOUR EARLIEST CONVENIENCE. THANK YOU.

1. TITLE REPORT - PLEASE PROVIDE ESSC WITH A COPY
2. ARE YOU AWARE OF ANY PENDING, THREATENED, OR PAST LITIGATION OR ADMINISTRATIVE PROCEEDINGS RELEVANT TO HAZARDOUS SUBSTANCES OR PETROLEUM PRODUCTS IN, ON, OR FROM THE PROPERTY?
 YES NO
3. ARE YOU AWARE OF ANY NOTICES FROM ANY GOVERNMENTAL ENTITY REGARDING ANY POSSIBLE VIOLATION OR ENVIRONMENTAL LAWS OR POSSIBLE LIABILITY RELATING TO HAZARDOUS SUBSTANCES OR PETROLEUM PRODUCTS?
 YES NO
4. ARE YOU AWARE OF ANY ENVIRONMENTAL CLEANUP LIENS AGAINST THE PROPERTY THAT ARE FILED OR RECORDED UNDER FEDERAL, TRIBAL, STATE, OR LOCAL LAW?
 YES NO
5. ARE YOU AWARE OF ANY ACTIVITY AND LAND USE LIMITATIONS, SUCH AS ENGINEERING CONTROLS, LAND USE RESTRICTIONS, OR INSTITUTIONAL CONTROLS THAT ARE IN PLACE AT THE SITE AND/OR HAVE BEEN FILED OR RECORDED IN A REGISTRY UNDER FEDERAL, TRIBAL, STATE, OR LOCAL LAW?
 YES NO

6. DO YOU HAVE ANY SPECIALIZED KNOWLEDGE OR EXPERIENCE RELATED TO THE PROPERTY OR NEARBY PROPERTIES?

YES NO

7. ARE YOU AWARE OF ANY COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION ABOUT THE PROPERTY OR NEARBY PROPERTIES THAT WOULD HELP IDENTIFY CONDITIONS INDICATIVE OF RELEASES OR THREATENED RELEASES?

YES NO

8. DO YOU KNOW THE PAST USES OF THE PROPERTY?

YES (PLEASE LIST) NO

Only that when purchased by Yabito, there was an old house on the land. Yabito Corp is not aware of any other uses.

9. DO YOU KNOW OF SPECIFIC CHEMICALS THAT ARE PRESENT OR ONCE WERE PRESENT AT THE PROPERTY?

YES (PLEASE LIST) NO

10. DO YOU KNOW OF SPILLS OR OTHER CHEMICAL RELEASES THAT HAVE TAKEN PLACE AT THE PROPERTY?

YES (PLEASE LIST) NO

11. DO YOU KNOW OF ANY ENVIRONMENTAL CLEANUPS THAT HAVE TAKEN PLACE AT THE PROPERTY?

YES (PLEASE LIST) NO

12. DOES THE PURCHASE PRICE BEING PAID FOR THIS PROPERTY REASONABLY REFLECT THE FAIR MARKET VALUE OF THE PROPERTY?

YES NO

- D. REGISTRATIONS FOR UNDERGROUND AND ABOVEGROUND STORAGE TANKS
_____ YES NO
- E. REGISTRATIONS FOR UNDERGROUND INJECTION SYSTEMS
_____ YES NO
- F. MATERIAL SAFETY DATA SHEETS _____ YES NO
- G. COMMUNITY RIGHT-TO-KNOW PLAN _____ YES NO
- H. SAFETY PLANS; PREPAREDNESS AND PREVENTION PLANS; SPILL
PREVENTION, COUNTERMEASURE, AND CONTROL PLANS
_____ YES NO
- I. REPORTS REGARDING HYDROGEOLOGIC CONDITIONS ON THE PROPERTY OR
SURROUNDING AREA _____ YES NO
- J. NOTICES OR OTHER CORRESPONDENCE FROM ANY GOVERNMENT AGENCY
RELATING TO PAST OR CURRENT VIOLATIONS OF ENVIRONMENTAL LAWS
WITH RESPECT TO THE PROPERTY OR RELATING TO ENVIRONMENTAL LIENS
ENCUMBERING THE PROPERTY _____ YES NO
- K. HAZARDOUS WASTE GENERATOR NOTICES OR REPORTS
_____ YES NO
- L. GEOTECHNICAL STUDIES YES _____ NO (prepared by ESSC in 2006)
- M. RISK ASSESSMENTS _____ YES NO
- N. RECORDED ACTIVITY AND USE LIMITATIONS _____ YES NO

IF YES ON (A-N) ABOVE, WILL COPIES BE PROVIDED TO ESSC FOR REVIEW?
 YES _____ NO

COMPLETED BY:

SIGNATURE: Tina M. Alleguez

PRINT NAME: Tina M. Alleguez

Counsel for Yabito Corp

DATE: 7/18/14

QUALIFICATIONS STATEMENTS

Earth Systems' multi-disciplinary professional staff has extensive experience with and education in chemistry, geology, geophysics, hydrogeology, mechanical engineering, civil engineering, mapping, soil science, drafting, and surveying. Earth Systems' senior project and staff professionals include Certified Engineering Geologists, Certified Hydrogeologists, Registered Geologists, Registered Environmental Property Assessors, and Professional Engineers. These professionals generally hold an average of two registrations and/or certifications in their area of expertise. To continue to meet Earth Systems' commitment to technical expertise, Earth Systems considers it essential to train personnel in the latest scientific advancements in assessment and mitigation techniques. This involves continuing education in the form of training seminars, literature reviews, and pertinent conferences to remain abreast of recent developments in this complex and rapidly changing field.

The following information states the credentials of the professionals who performed field, research and/or report preparation on the project.

AMY E. LEE
Environmental Assessor

Years in Field: 19
Years with Earth Systems: 19

EDUCATION:

B.S., Forestry and Natural Resources Management
California Polytechnic State University, San Luis Obispo, CA, GPA 3.5

REGISTRATIONS:

REPA – Registered Environmental Property Assessor #157732
REA - Registered Environmental Assessor I-07387 from 1999 through 2012 (program terminated on July 1, 2012)
OSHA/EPA 40-Hour Health and Safety Training for Hazardous Waste Operations and Yearly 8-Hour Refresher Course

PROFESSIONAL EXPERIENCE:

Amy Lee has more than nineteen years experience in performing all aspects of environmental site assessments, site characterizations, and remediation plans in conformance with ASTM Standards. Ms. Lee has performed Phase I and Phase II Assessments on commercial, industrial, and residential properties throughout California. Her work includes conducting site reconnaissances, evaluating historical research, reviewing regulatory agency records and government databases, interpreting aerial photographs, sampling soil and groundwater, interpreting laboratory data, and preparing final reports that include recommendations for remediation. Ms. Lee has authored numerous Closure Reports, Work Plans, and Health and Safety Plans for regulatory agency submittal.

Representative Experience:

- *Phase I Environmental Site Assessments.* As an Environmental Assessor, Ms. Lee specializes in performing Phase I Environmental Site Assessments in conformance with ASTM Standard E 1527-13. Phase I Environmental Site Assessments are conducted to identify recognized environmental conditions in connection with a property. The term “recognized environmental conditions” means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.
- *Environmental Audits.* Ms. Lee has conducted Site Closure Environmental Audits for properties in southern California. Services performed include an initial site reconnaissance to identify areas of potential environmental concern; soil and

Robert T. Ferguson
Staff Geologist

Years in Field: 14
Years with Earth Systems: 14

EDUCATION:

B.S., Geology, California State University, Sonoma, 1998

REGISTRATION AND CERTIFICATIONS:

ACI Certified Concrete Technician, Level 1
Licensed Nuclear Gauge Operator

PROFESSIONAL AFFILIATIONS:

Geological Society of America

PROFESSIONAL EXPERIENCE:

Employed with Earth Systems in the Palmdale office since 1999, Mr. Ferguson helps to plan and conduct subsurface exploration programs related to geologic hazards analysis, geotechnical investigations, and environmental assessments.

- Conducts field exploration programs related to soils engineering investigations and geologic hazards analysis.
- Designs on-site sewage disposal systems based on field data and conforming to the design requirements of relevant regulating agencies.
- Performs preliminary environmental site assessments and environmental sampling programs.
- Prepares detailed geologic maps and cross-sections based on data gathered during field exploration programs.

SELECTED MAJOR PROJECT EXPERIENCE:

- *DeButts Terrace Landslide Repair, Malibu, California.* A landslide occurred in a canyon area adjacent to two nearby homes during a period of heavy rainfall. Mr. Ferguson conducted the initial site exploration program and the collected data was used to define the limits of the landslide mass and to provide repair recommendations. During the repair phase of the project Mr. Ferguson served as geotechnical technician performing compaction testing, grading observation, and accurately mapping the critical design components such as: keyway, sub-drains, and benching.
- *Proposed Acton Library, Acton California.* Designed the on-site sewage disposal system for the proposed library facility. Mr. Ferguson creatively designed the system taking into account limitations posed by drainage setbacks, building setbacks, and placement limitations posed by the project architect. This design incorporates the modern denitrification technology required by Los Angeles County for this type of system.

Appendix E
Noise

Fundamental Concepts of Environmental Noise

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound. Noise is commonly defined as unwanted sound or sound that is objectionable because it is disturbing or annoying.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors that affect the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hz. The audible frequency range for humans is generally between 20 and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micropascals (μPa). One μPa is approximately one-hundred billionth (0.0000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 μPa . Because of this huge range of values, sound is rarely expressed in terms of μPa . Instead, a logarithmic scale is used to describe the sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa .

Addition of Decibels

Because dBs are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the dB scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB—rather, they would combine to produce 73 dB. Under the dB scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

A-Weighted Decibels

The dB scale alone does not adequately characterize how humans perceive sound. The dominant frequencies of a sound have a substantial effect on human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in its range of audible frequencies as well as the way in which it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000 to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people judge the relative loudness or annoyance of a sound, their judgments correlate well with A-weighted sound levels of those sounds. Other weighting networks (e.g., B, C, and D scales) have been devised to address high noise levels or other special problems, but these scales are rarely used in conjunction with transit- or highway-related noise. Noise levels for technical reports related to transit or traffic noise are typically reported in terms of A-weighted decibels, or dBA. Table A-1 describes typical A-weighted noise levels for various noise sources.

Table A-1. Typical A-Weighted Noise Levels

Common Outdoor Activities or Conditions	Noise Level (dBA)	Common Indoor Activities or Locations
	— 110 —	Rock band
Jet flying at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 2009.

Human Response to Changes in Noise Levels

As discussed above, a doubling of sound energy results in a 3 dB increase in sound. However, when the sound level change is measured with precise instrumentation, the subjective human perception of the doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000 to 8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound-level increases of 3 dB in typical noisy environments. Further, a 5 dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3 dB increase in sound would generally be perceived as barely detectable.

Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following noise descriptors are commonly used to describe environmental noise levels.

- **Equivalent Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level, or $L_{eq}(h)$, is the energy average of A-weighted sound levels occurring during a 1-hour period.
- **Percentile-Exceeded Sound Level (L_{xx}):** L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time).
- **Maximum Sound Level (L_{max}):** L_{max} is the maximum sound level measured during a specified period.
- **Minimum Sound Level (L_{min}):** L_{min} is the minimum sound level measured during a specified period.
- **Day/Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.
- **Community Noise Equivalent Level (CNEL):** Similar to L_{dn} , CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the factors described below.

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roadways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a source to a receiver is often very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, excess attenuation has been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees between the source and the receiver), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance.

Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lower noise levels. Sound levels can increase at large distances (e.g., more than 500 feet) from a source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors, such as air temperature, humidity, and turbulence, can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and ridges) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver for the specific purpose of reducing noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction. Vegetation between a source and receiver is rarely effective in reducing noise because it does not create a solid barrier.

Fundamental Concepts of Groundborne Vibration

This section describes basic concepts related to groundborne vibration. In contrast to airborne sound, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually much lower than the threshold of

human perception. Most perceptible indoor vibration is caused by sources within buildings, such as mechanical equipment while in operation, people moving, or doors slamming. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads.

Construction activity can result in varying degrees of ground vibration, depending on the equipment and method used. Equipment such as air compressors, light trucks, and hydraulic loaders generate little or no ground vibration. Pile drivers, vibratory compactors, and demolition equipment have the potential to generate substantial vibration, which may present a concern if close to buildings (Federal Transit Administration 2006).

Dynamic construction equipment, such as pile drivers, can create vibrations that radiate along the surface and downward into the earth. These surface waves can be felt as groundborne vibration. Vibration can result in effects that range from annoyance to structural damage. Variations in geology and distance result in different vibration levels with different frequencies and displacements. In all cases, vibration amplitudes decrease with increased distance from the vibration source.

As vibration waves travel outward from a source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity, in inches per second (in/s), at which these particles move is the commonly accepted descriptor of vibration amplitude and is commonly quantified in terms of peak particle velocity (PPV). PPV is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. For transient vibration sources (single isolated vibration events such as blasting), the human response to vibration varies from barely perceptible at a PPV of 0.04 in/s, to distinctly perceptible at a PPV of 0.25 in/s, and severe at a PPV of 2.0 in/s. For continuous or frequent intermittent vibration sources (such as impact pile driving or vibratory compaction equipment), the human response to vibration varies from barely perceptible at a PPV of 0.01 in/s, to distinctly perceptible at a PPV of 0.04 in/s, and severe at a PPV of 0.4 in/s (Caltrans, 2013). If a person is engaged in any type of physical activity, vibration tolerance increases considerably.

Groundborne vibration can also be expressed in terms of root-mean-square (RMS) vibration velocity to evaluate human response to vibration levels. RMS is defined as the average of the squared amplitude of the vibration signal. The vibration amplitude is expressed in terms of vibration decibels (VdB), which use a reference level of 1 micro-inch per second. Typical background vibration levels are between 50 and 60 VdB. The threshold of perception for most people is around 65 VdB. Vibration levels in the 70 to 80 VdB range are often noticeable but acceptable. Typically, vibration levels must exceed 100 VdB before building damage occurs. Historic structures, however, may have a damage threshold as low as 90 VdB.

At higher frequencies, groundborne vibration can be perceived as a noise source. At sufficiently high amplitudes, the propagation of vibration waves through the ground can cause building elements to vibrate at a frequency that is audible to the human ear. Groundborne noise can rattle windows, walls, or other items that are coupled to building surfaces. Groundborne vibration levels that result in groundborne noise are often experienced as a combination of perceptible vibration and low-frequency noise.

Land uses that are sensitive to groundborne vibration include places where people reside, schools, libraries, and places of worship. Hospital operating rooms and certain types of industries that use vibration-sensitive equipment are considered highly sensitive to groundborne noise and vibration.

Outdoor park facilities, such as picnic areas or athletic fields, are not considered sensitive to groundborne noise or vibration.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: Grading, foundations, & slab-on-grade

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Noise Level at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Scraper	No	40	40	83.6	50	0
Compactor (ground)	No	20	20	83.2	50	0
Grader	No	40	85	85	50	0
Concrete Pump Truck	No	20	20	81.4	50	0
Flat Bed Truck	No	40	40	74.3	50	0

Results

Equipment	Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Scraper	83.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	83.2	79.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	81.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85	87.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 30'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Scraper	No	40	40	83.6	30	0
Compactor (ground)	No	20	20	83.2	30	0
Grader	No	40	85	85	30	0
Concrete Pump Truck	No	20	20	81.4	30	0
Flat Bed Truck	No	40	40	74.3	30	0

Results

Equipment	Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Scraper	88	87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	87.7	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	89.4	88.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	85.8	81.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	78.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.4	92.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 40'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Scraper	No	40			83.6	40	0
Compactor (ground)	No	20			83.2	40	0
Grader	No	40	85			40	0
Concrete Pump Truck	No	20			81.4	40	0
Flat Bed Truck	No	40			74.3	40	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Scraper	85.5	84.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	85.2	81.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	86.9	86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	83.3	79.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	76.2	75.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	86.9	89.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 130'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Scraper	No	40			83.6	130	0
Compactor (ground)	No	20			83.2	130	0
Grader	No	40	85			130	0
Concrete Pump Truck	No	20			81.4	130	0
Flat Bed Truck	No	40			74.3	130	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Scraper	75.3	74.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	74.9	70.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	76.7	75.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	66	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.7	79.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 150'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Scraper	No	40			83.6	150	0
Compactor (ground)	No	20			83.2	150	0
Grader	No	40	85			150	0
Concrete Pump Truck	No	20			81.4	150	0
Flat Bed Truck	No	40			74.3	150	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Scraper	74	73.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	73.7	69.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	75.5	74.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	71.9	67.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	64.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.5	78.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: On-site and off-site utilities and improvements

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Noise Level at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Backhoe	No		40	77.6	50	0
Compactor (ground)	No		20	83.2	50	0
Grader	No		40	85	50	0
Concrete Pump Truck	No		20	81.4	50	0
Paver	No		50	77.2	50	0

Results

Equipment	Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Backhoe	77.6	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	83.2	79.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	81.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	77.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85	86.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Backhoe	No		40	77.6	50	0
Compactor (ground)	No		20	83.2	50	0
Grader	No		40	85	50	0
Concrete Pump Truck	No		20	81.4	50	0
Paver	No		50	77.2	50	0

Results

Equipment	Calculated (dBA)				Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Backhoe	77.6	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	83.2	79.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	81.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	77.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85	86.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 90'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Backhoe	No	40			77.6	90	0
Compactor (ground)	No	20			83.2	90	0
Grader	No	40	85			90	0
Concrete Pump Truck	No	20			81.4	90	0
Paver	No	50			77.2	90	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Backhoe	72.5	71.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	78.1	74.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	79.9	78.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	76.3	72.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	72.1	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.9	81.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 200'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Backhoe	No	40			77.6	200	0
Compactor (ground)	No	20			83.2	200	0
Grader	No	40	85			200	0
Concrete Pump Truck	No	20			81.4	200	0
Paver	No	50			77.2	200	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Backhoe	65.5	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	73	72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	65.2	65.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	73	74.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 220'	Residential	45	45	45

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Backhoe	No	40			77.6	220	0
Compactor (ground)	No	20			83.2	220	0
Grader	No	40	85			220	0
Concrete Pump Truck	No	20			81.4	220	0
Paver	No	50			77.2	220	0

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Lmax	Day		Evening		Night		Day		Evening		Night	
				L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax
Backhoe	64.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	70.4	66.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	72.1	71.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	68.5	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	64.4	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.1	74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: Structure and framing

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receiver at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40		74.3	50	0
Crane	No	16		80.6	50	0
Welder / Torch	No	40		74	50	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	75.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74	73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	78.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 140'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40		74.3	140	0
Crane	No	16		80.6	140	0
Welder / Torch	No	40		74	140	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Flat Bed Truck	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	71.6	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	65.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.6	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 180'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40		74.3	180	0
Crane	No	16		80.6	180	0
Welder / Torch	No	40		74	180	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day		Evening		Night		Day Lmax	Evening		Night		
			Lmax	L10	Lmax	L10	Lmax	L10		Lmax	L10	Lmax	L10	
Flat Bed Truck	63.1	62.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	69.4	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	62.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.4	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40		74.3	220	0
Crane	No	16		80.6	220	0
Welder / Torch	No	40		74	220	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
	*Lmax	L10	Day		Evening		Night		Day Lmax	Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10		Lmax	L10		
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	67.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	61.1	60.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.7	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40		74.3	220	0
Crane	No	16		80.6	220	0
Welder / Torch	No	40		74	220	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
	*Lmax	L10	Day		Evening		Night		Day Lmax	Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10		Lmax	L10		
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	67.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	61.1	60.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.7	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/29/2014

Case Description: Rough-ins, exterior skin, and roofing

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receiver at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	50	0
Flat Bed Truck	No	40		74.3	50	0
Dump Truck	No	40		76.5	50	0
Compressor (air)	No	40		77.7	50	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Front End Loader	79.1	78.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	76.5	75.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.1	82.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 140'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	140	0
Flat Bed Truck	No	40		74.3	140	0
Dump Truck	No	40		76.5	140	0
Compressor (air)	No	40		77.7	140	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Front End Loader	70.2	69.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	67.5	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	68.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 180'	Residential	45	45	45

Description	Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Front End Loader	No	40	79.1	180	0	
Flat Bed Truck	No	40	74.3	180	0	
Dump Truck	No	40	76.5	180	0	
Compressor (air)	No	40	77.7	180	0	

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Front End Loader	68	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	63.1	62.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	66.5	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68	71.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 220'	Residential	45	45	45

Description	Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Front End Loader	No	40	79.1	220	0	
Flat Bed Truck	No	40	74.3	220	0	
Dump Truck	No	40	76.5	220	0	
Compressor (air)	No	40	77.7	220	0	

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Front End Loader	66.2	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	63.6	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	64.8	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.2	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 220'	Residential	45	45	45

Description	Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Front End Loader	No	40	79.1	220	0	
Flat Bed Truck	No	40	74.3	220	0	
Dump Truck	No	40	76.5	220	0	
Compressor (air)	No	40	77.7	220	0	

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Front End Loader	66.2	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	63.6	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	64.8	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.2	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: Interior finishes

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40	40	74.3	50	0
Dump Truck	No	40	40	76.5	50	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	76.5	75.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.5	77.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 140'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40	40	74.3	140	0
Dump Truck	No	40	40	76.5	140	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Flat Bed Truck	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	67.5	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.5	68.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 180'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	180	180	0
Dump Truck	No	40	76.5	180	180	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	L10	Day		Evening		Night		Day	Evening	Night	Day	Evening	Night	L10
			Lmax	L10	Lmax	L10	Lmax	L10							
Flat Bed Truck	63.1	N/A	62.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	65.3	N/A	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.3	66.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	220	220	0
Dump Truck	No	40	76.5	220	220	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	L10	Day		Evening		Night		Day	Evening	Night	Day	Evening	Night	L10
			Lmax	L10	Lmax	L10	Lmax	L10							
Flat Bed Truck	61.4	N/A	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	63.6	N/A	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	63.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	220	220	0
Dump Truck	No	40	76.5	220	220	0

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
	*Lmax	L10	Day		Evening		Night		Day	Evening	Night	Day	Evening	Night	L10
			Lmax	L10	Lmax	L10	Lmax	L10							
Flat Bed Truck	61.4	N/A	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	63.6	N/A	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	63.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: Exterior hardscape & landscape

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receiver at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Concrete Pump Truck	No	20	20	81.4	50	0
Flat Bed Truck	No	40	40	74.3	50	0
Excavator	No	40	40	80.7	50	0
Backhoe	No	40	40	77.6	50	0

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Pump Truck	81.4	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	79.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.4	83.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 30'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Concrete Pump Truck	No	20	20	81.4	30	0
Flat Bed Truck	No	40	40	74.3	30	0
Excavator	No	40	40	80.7	30	0
Backhoe	No	40	40	77.6	30	0

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Day		Evening		Night		Day		Evening		Night	
			Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Pump Truck	85.8	81.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	78.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	85.1	84.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	82	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.8	87.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 40'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	40	0
Flat Bed Truck	No	40		74.3	40	0
Excavator	No	40		80.7	40	0
Backhoe	No	40		77.6	40	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Concrete Pump Truck	83.3	79.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	76.2	75.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	82.6	81.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	79.5	78.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	83.3	85.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 130'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	130	0
Flat Bed Truck	No	40		74.3	130	0
Excavator	No	40		80.7	130	0
Backhoe	No	40		77.6	130	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Concrete Pump Truck	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	66	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	72.4	71.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	69.3	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	73.1	75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 150'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	150	0
Flat Bed Truck	No	40		74.3	150	0
Excavator	No	40		80.7	150	0
Backhoe	No	40		77.6	150	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Concrete Pump Truck	71.9	67.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	64.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	70.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.9	73.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2014
 Case Description: Fixtures, Furnishings, & Equipment

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receiver at 50'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40		74.3	50	0

Equipment	Calculated (dBA)	Results								Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
		L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax		
Flat Bed Truck	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	74.3	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 1 at 140'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Flat Bed Truck	No	40		74.3	140	0

Equipment	Calculated (dBA)	Results								Noise Limit Exceedance (dBA)					
		Day		Evening		Night		Day		Evening		Night			
		L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax		
Flat Bed Truck	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Total	65.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 2 at 180'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	180	0	

Equipment	Calculated (dBA)	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
		Day		Evening		Night		Day		Evening		Night		
		*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	
Flat Bed Truck	63.1	62.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	63.1	62.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 3 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	220	0	

Equipment	Calculated (dBA)	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
		Day		Evening		Night		Day		Evening		Night		
		*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

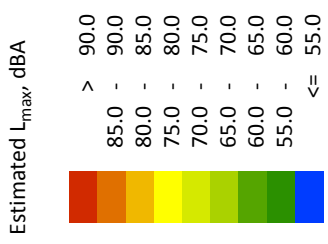
Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor 4 at 220'	Residential	45	45	45

Description	Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Flat Bed Truck	No	40	74.3	220	0	

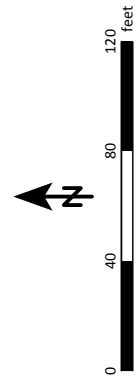
Equipment	Calculated (dBA)	Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
		Day		Evening		Night		Day		Evening		Night		
		*Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	
Flat Bed Truck	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.4	60.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

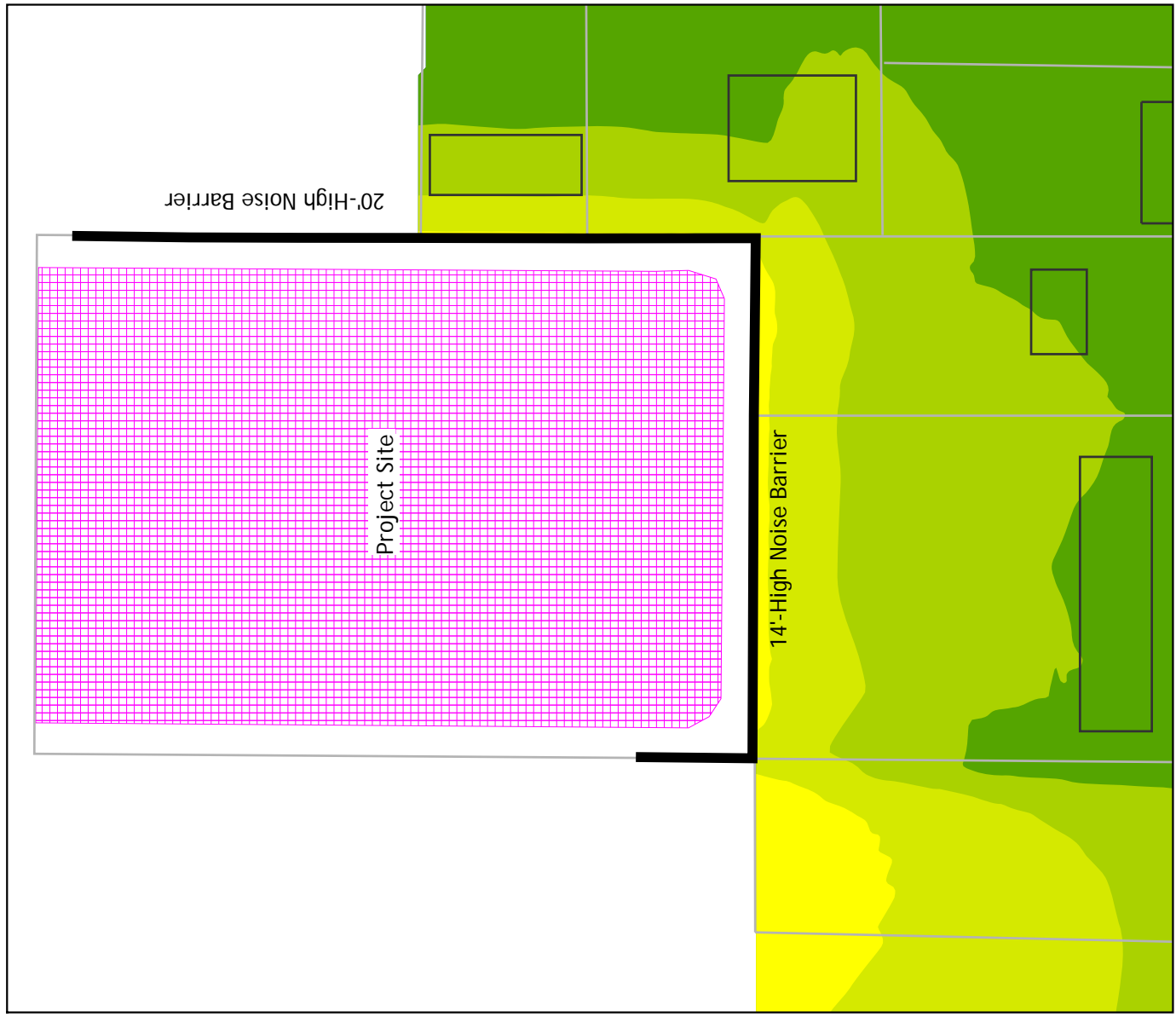
Estimated Mitigated Noise Levels at Nearby Sensitive Receptors Due to Project Construction



- Signs and symbols
- Property line
 - ▭ Residential Building
 - ▨ Construction Zone
 - ▬ Noise Barrier



Calculation Date: August 28, 2014



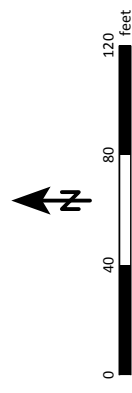
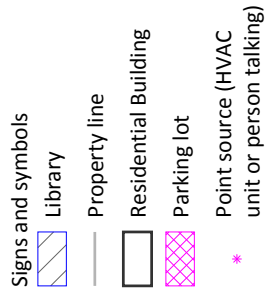
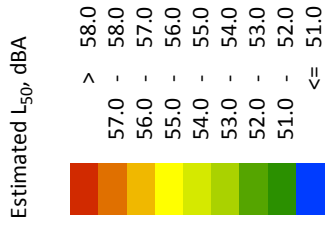
Assumptions used in the Analysis of Project Operational Noise Levels

The primary on-site noise sources at the project site would be parking lot activities, mechanical equipment, and activities at the proposed outdoor learning spaces. To analyze the noise levels from these sources, a three-dimensional computer noise model was developed using SoundPLAN software. The geometry for the model was based on the project plans and publicly available aerial photography. The modeling takes into account many important variables, including the sound power of each source, the heights of the noise sources and receptors, the distance to noise-sensitive receptors, site topography, and barrier effects provided by walls and buildings. It is noted that, per the Los Angeles County Code, a “sensitive receptor” is considered to be any location on a residential property.

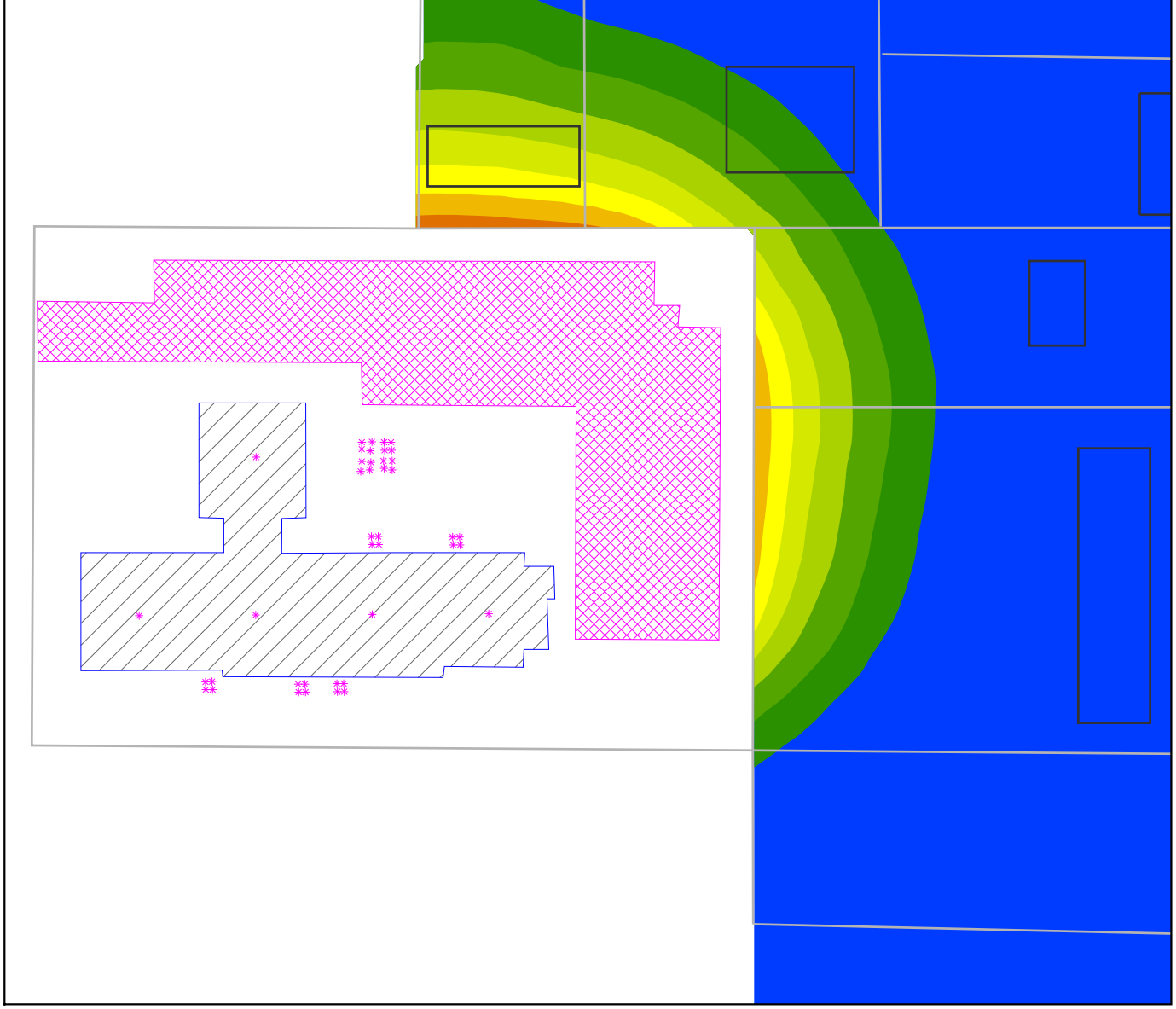
The following data and assumptions were used in the noise model:

- There would be a total of 92 vehicle movements (44 inbound vehicles and 48 outbound) at the library parking lot in a 1-hour period. This number is based on the weekday peak-hour trip generation data provided by the project traffic engineer. Noise from the parking lot was estimated using the parking lot modeling capabilities of the SoundPLAN software, which predicts noise levels according to the size of the parking lot, the number of parking spaces, and the number of hourly vehicle movements.
- It was assumed there would be five rooftop heating, air-conditioning, and ventilation (HVAC) units operating on the library building. Based on manufacturer’s published noise data for these types of equipment (Trane, 2004), it was estimated that each unit would have a sound power level of 85 dBA.
- It was assumed that a total of 36 people would be distributed throughout the various exterior Learning Courtyard areas of the library (this corresponds to the number of outdoor seats in these areas, as indicated on the project plans). It was assumed that each person would generate an average sound power of 71 dBA. This noise level was selected from the built-in noise source library within SoundPLAN and represents a raised voice, which is considered appropriate for an individual speaking outdoors.

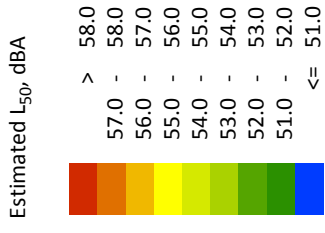
Estimated Unmitigated Noise Levels at Nearby Sensitive Receptors Due to On Site Operations



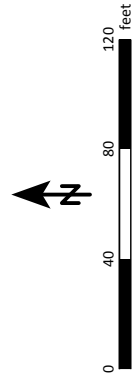
Calculation Date: August 28, 2014



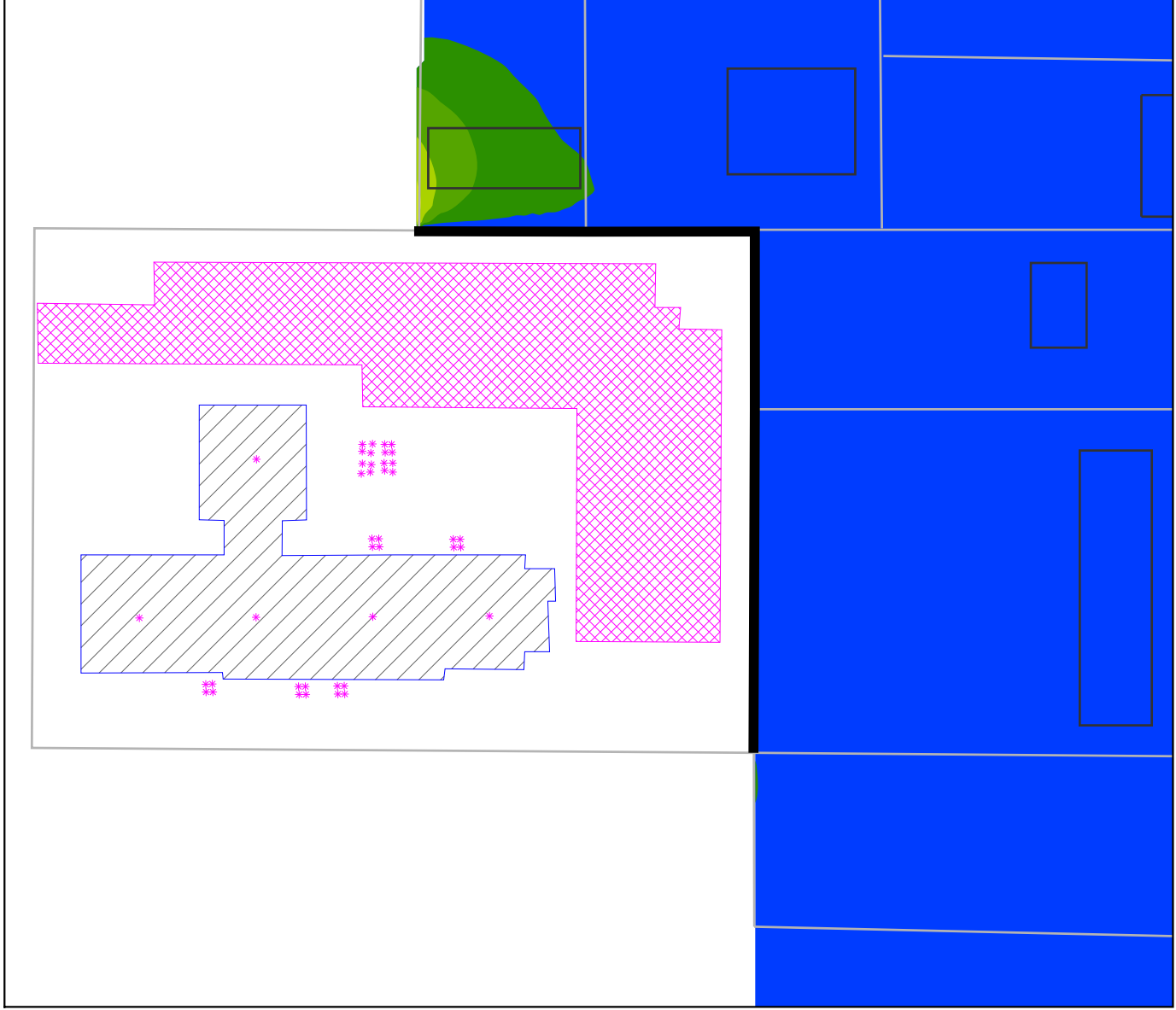
Estimated Mitigated Noise Levels at Nearby Sensitive Receptors Due to On Site Operations



- Signs and symbols
- Library
 - Property line
 - Residential building
 - Parking lot
 - Point source (HVAC unit or person talking)
 - 6'-High noise barrier



Calculation Date: August 28, 2014



Appendix F
Traffic Study

Los Angeles County Quartz Hill Library

**Draft Transportation Impact Study
In Support of the
Initial Study/Mitigated Negative Declaration (IS/MND)**

**Prepared for:
ICF Jones & Stokes**

**Prepared by:
Intueor Consulting, Inc.**



September 2014

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Chapter 1 – Introduction

This report, which focuses on potential transportation impacts, is one of a series of technical reports prepared in support of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Los Angeles County Quartz Hill Library. The report identifies the base assumptions, describes the methodologies, and summarizes the findings of the study. The methodology and base assumptions used in this analysis were prepared in close coordination with the County of Los Angeles staff.

1.1 PROJECT DESCRIPTION

The Quartz Hill library project proposes construction and operation of a new public library in the Business District of Quartz Hill, an unincorporated community in the Antelope Valley region of northern Los Angeles County. The County of Los Angeles (County) is the lead agency under the California Environmental Quality Act (CEQA). The new 12,500-square-foot library would be built on an undeveloped 1.75-acre parcel, which is located approximately 150 feet west of 50th Street West on Avenue M-2, a private street. **Figure 1-1** shows the regional vicinity, and **Figure 1-2** provides a project location map.

The one-story library would include a community meeting room, public lobby, customer service desk, and outdoor learning courtyards. On-site parking would be provided in the form of a 55-space surface parking lot, and the site would be improved with landscape and hardscape features. Vehicular access to the library would be from Avenue M-2. The new library would replace the existing 3,530-square-foot Quartz Hill library, which is located in a leased building approximately 0.2 mile north of the project site. The leased building would be surrendered to the landlord upon completion of the proposed project. The establishment of a new library in Quartz Hill to meet the service needs of the anticipated local population is consistent with the County's long-range facility planning. **Figure 1-3** shows the site plan.

Construction is anticipated to begin in July 2015 and be completed within 13 months, including 2 months for installing fixtures, furnishings, and equipment, thus finishing around August 2016.

1.2 PROJECT SCOPE

This traffic analysis evaluates the operation of fifteen (15) study area intersections as potentially being impacted by the proposed project. These study intersections are located within a one-mile radius of the project site and were selected in conjunction with Los Angeles County. These intersection locations are deemed most likely to be impacted due to the proposed project. The fifteen study intersections are presented in the following list.

1. 55th Street W and W Avenue L-8
2. 50th Street W and W Avenue L-8
3. 60th Street W and Columbia Way
4. 55th Street W and Columbia Way
5. 50th Street W and Columbia Way

Figure 1-1: Regional Vicinity Map



Figure 1-2: Project Location Map

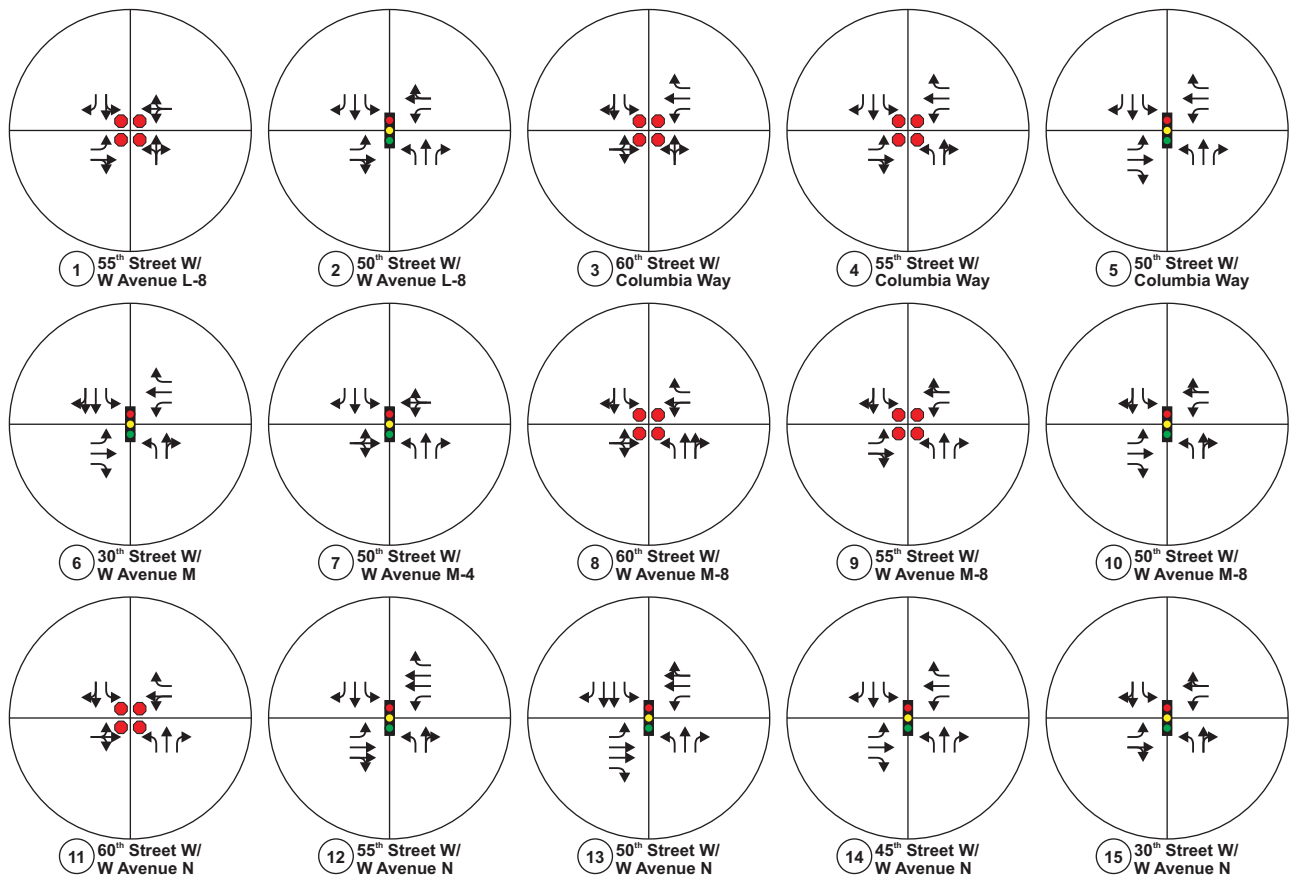
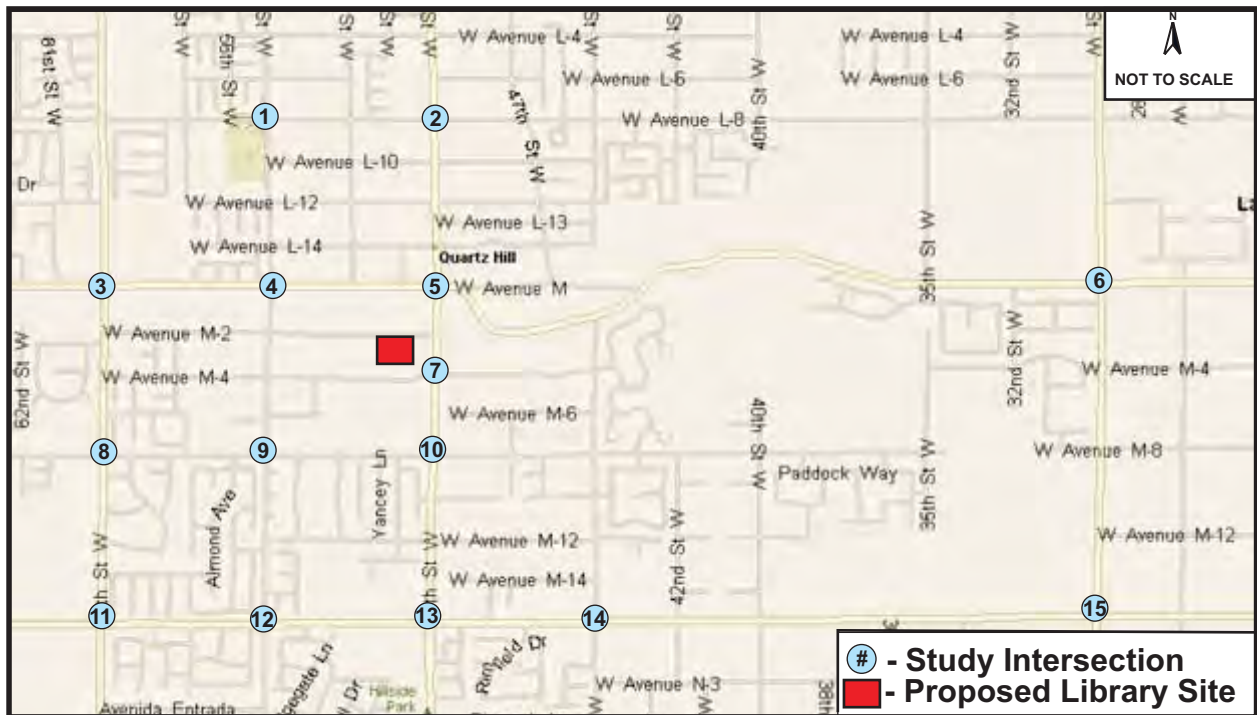


Figure 1-3: Site Plan



6. 30th Street W and W Avenue M
7. 50th Street W and W Avenue M-4
8. 60th Street W and W Avenue M-8
9. 55th Street W and W Avenue M-8
10. 50th Street W and W Avenue M-8
11. 60th Street W and W Avenue N
12. 55th Street W and W Avenue N
13. 50th Street W and W Avenue N
14. 45th Street W and W Avenue N
15. 45th Street W and W Avenue N

The study intersection locations are presented in **Figure 1-4**.



1.3 ENVIRONMENTAL SETTING

A field inventory was conducted at the fifteen area intersection locations. The inventory included review of intersection geometric layout, type of traffic control, intersection approach lane configuration, posted speed limits, and on-street parking restrictions. Existing lane configurations and traffic control for the fifteen study intersections are provided in **Figure 1-4**. This information is required for the subsequent traffic analysis.

1.3.1 Analytical Tools and Data Sources

To determine the existing traffic operating conditions in the study area and perform the traffic operations analysis for the opening year of 2016, manual AM and PM peak period turning movement counts were conducted at the intersection locations. The study area is within the County of Los Angeles and adjacent to the City of Lancaster. The intersection turning movement counts were conducted on a representative weekday (Tuesday, Wednesday, or Thursday), with schools in session, in May 2014. As noted earlier, the traffic data was collected at the locations shown in **Figure 1-4**. The peak period intersection turning movement traffic volume count data are presented in **Appendix A**.

1.3.2 Approach to Estimating Transportation Effects

Traffic operating conditions for the study intersections were analyzed according to the transportation impact analysis report guidelines for the County of Los Angeles. Study intersections were analyzed using the Intersection Capacity Utilization (ICU) method of intersection analysis. Volume-to-capacity (V/C) ratios and the corresponding level of service (LOS) were calculated at the study intersections during the AM and PM peak hours. Level of service is a qualitative measure that describes traffic operating and flow conditions. **Table 1-1** presents the LOS definitions for intersections (per the County guidelines).

The CEQA Guidelines define “significant effect” as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project. The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. Under CEQA, every agency in the state “is encouraged to develop and publish thresholds of significance” against which to compare the environmental impacts of projects. Such thresholds are to be published for public review and supported by substantial evidence before their adoption. A lead agency will normally consider the environmental impacts of a project to be significant if, and only if, they exceed established thresholds of significance.

Per the transportation impact analysis report guidelines for the County of Los Angeles, an intersection is considered to be adversely or significantly impacted, due to the proposed project, if the change in V/C from the pre-project condition is equal to or greater than the criteria set forth in **Table 1-2**.

Level of Service	V/C Range	Definition
A	0.000 – 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase are fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the peak hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Pre-project		Project V/C Increase
LOS	V/C	
LOS C	0.71 to 0.80	≥ 0.04
LOS D	0.81 to 0.90	≥ 0.02
LOS E/F	0.91 or more	≥ 0.01

Chapter 2 – Existing Conditions

A data collection effort was undertaken to develop a detailed description of existing conditions in the study area. The existing conditions analysis relevant to this traffic study contains an assessment of the existing roadway network, the existing public transit, and the intersection level of service analysis for the existing with and without project scenarios

2.1 EXISTING ROADWAY NETWORK

The discussion presented here is limited to roadways that are approaches to the study intersections or provide regional access. The following list describes the major arterials within the project study area.

- **W Avenue M/Columbia Way** – This is a two-lane undivided major arterial oriented in the east and west directions. Currently it carries about 6,600 vehicles per day.
- **W Avenue M-8** – This is a two-lane undivided secondary arterial oriented in the east and west directions. Currently it carries about 2,500 vehicles per day.
- **W Avenue N** – This is a two- to four-lane divided secondary arterial oriented in the east and west directions. Currently it carries about 11,000 vehicles per day.
- **60th Street W**– This is a two- to three-lane divided secondary arterial oriented in the north and south directions. Currently it carries about 6,900 vehicles per day.
- **50th Street W**– This is a two- to three-lane divided major arterial oriented in the north and south directions. Currently it carries about 11,400 vehicles per day.
- **30th Street W**– This is a two- to three-lane divided major arterial oriented in the north and south directions. Currently it carries about 12,400 vehicles per day.

2.2 EXISTING PUBLIC TRANSIT

The Antelope Valley Transit Authority (AVTA) operates fixed-route bus and dial-a-ride service throughout the high desert area. The following provides a brief description of the bus lines providing service within the study area near the proposed project.

- **Route 5 (Avenue L – Quartz Hill)** – This route serves W Avenue M and 50th Street W with connections to Lancaster City Park.
- **Route 7 (Quartz Hill – West Lancaster / West Palmdale)** – This route serves 50th Street W, 60th Street W, Quartz Hill High with connections at Palmdale Transportation Center and Lancaster Metrolink.

2.3 EXISTING WITHOUT PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

The turning movement counts that were collected at the fifteen intersections in the study area were used to evaluate existing without project peak hour traffic conditions. The AM and PM peak hours were

identified as the critical time periods for an assessment of existing conditions. Detailed vehicle turning movement count data are presented in **Appendix A** and illustrated in **Figure 2-1**.

Table 2-1 presents the results of the existing without project AM and PM traffic operating conditions and the corresponding LOS at each of the study intersections. The results indicate that only one intersection would operate at LOS F in both the AM and PM peak hours (shaded cells). All the remaining study intersections would operate at LOS D or better. The detailed existing conditions LOS worksheets are presented in **Appendix B**.

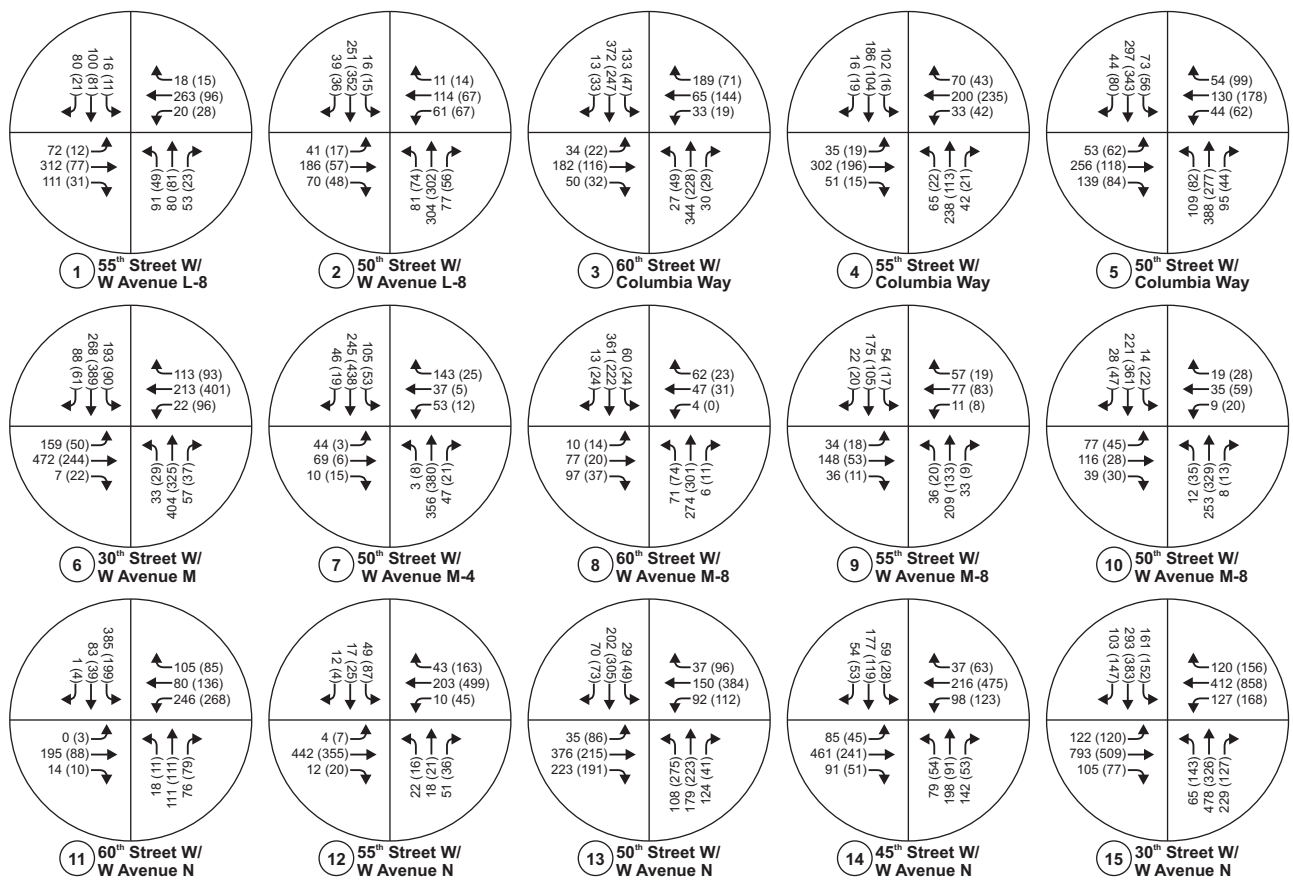
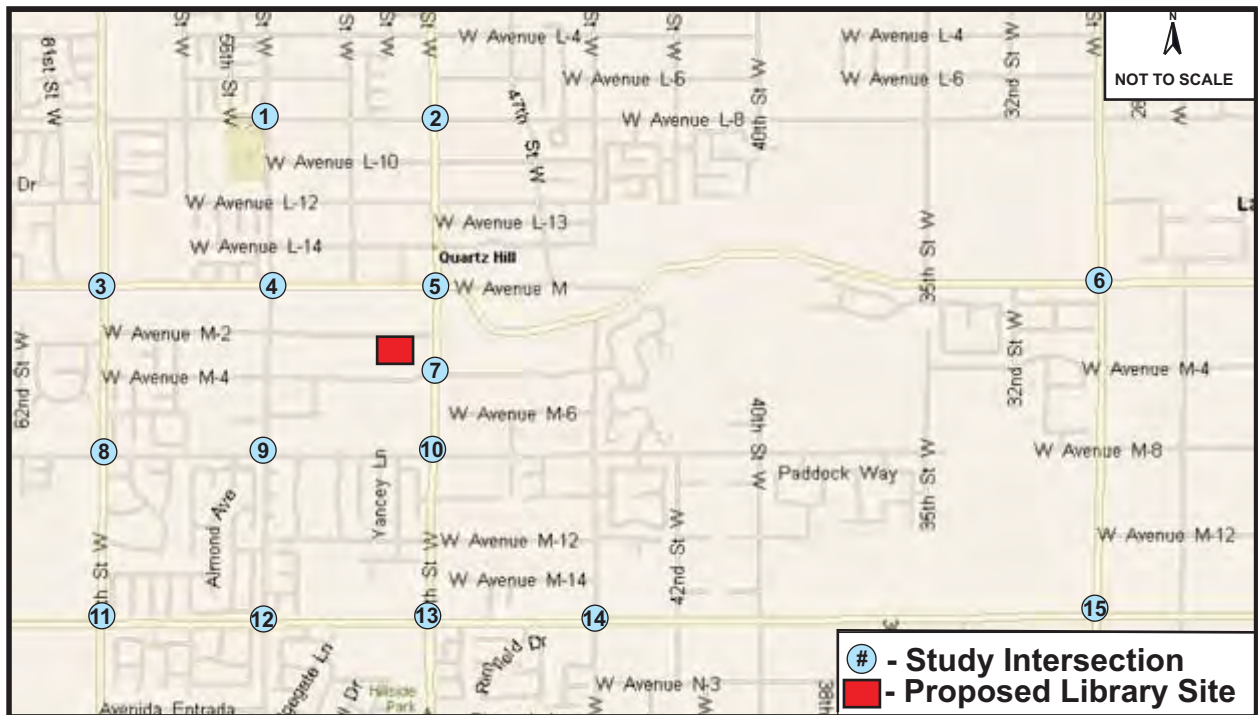
#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	55 th Street W and W Avenue L-8	All-Way Stop	0.510	A	0.296	A
2	50 th Street W and W Avenue L-8	Signalized	0.506	A	0.474	A
3	60 th Street W and Columbia Way	All-Way Stop	0.660	B	0.483	A
4	55 th Street W and Columbia Way	All-Way Stop	0.580	A	0.352	A
5	50 th Street W and Columbia Way	Signalized	0.576	A	0.516	A
6	30 th Street W and W Avenue M	Signalized	0.817	D	0.664	B
7	50 th Street W and W Avenue M-4	Signalized	0.537	A	0.406	A
8	60 th Street W and W Avenue M-8	All-Way Stop	0.494	A	0.345	A
9	55 th Street W and W Avenue M-8	All-Way Stop	0.386	A	0.269	A
10	50 th Street W and W Avenue M-8	Signalized	0.354	A	0.459	A
11	60 th Street W and W Avenue N	All-Way Stop	0.768	C	0.563	A
12	55 th Street W and W Avenue N	Signalized	0.322	A	0.351	A
13	50 th Street W and W Avenue N	Signalized	0.405	A	0.571	A
14	45 th Street W and W Avenue N	Signalized	0.610	B	0.533	A
15	30 th Street W and W Avenue N	Signalized	1.283	F	1.229	F

2.4 EXISTING WITH PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

The existing with project conditions were analyzed based on an estimate of the number of new trips generated by the proposed Quartz Hill Library project. Trip generation estimates for the proposed project were calculated using the trip rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition for a "Library" land use code.

2.4.1 Project Trip Generation

The first step in analyzing the "with project" traffic conditions is to estimate the number of new trips expected to be generated by the proposed library project. This section of the report describes the estimation of the future traffic generated by the proposed project.



The proposed project consists of a 12,500-square-foot public library (ITE Code 590 for the Library land use). The proposed library is projected to generate approximately 14 AM peak hour trips (10 in and 4 out) and 92 PM peak hour trips (44 in and 48 out). In addition, the library would generate approximately 703 daily trips. The number of trips generated by the proposed development is shown in **Table 2-2**.

ITE Land Use Code	Size	Daily Trips	Weekday					
			AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Library (590)	12,500 sq. ft.	703	10	4	14	44	48	92

2.4.2 Trip Distribution and Assignment

Trip distribution assumptions are used to determine the origin and destination of new vehicle trips associated with the proposed project. The directional distribution of trips to and from the project site was developed and approved by Los Angeles County and is based on the project access, the local roadway system, and the location of other adjacent land uses that would generate and attract trips to and from the library during the AM and PM peak hours.

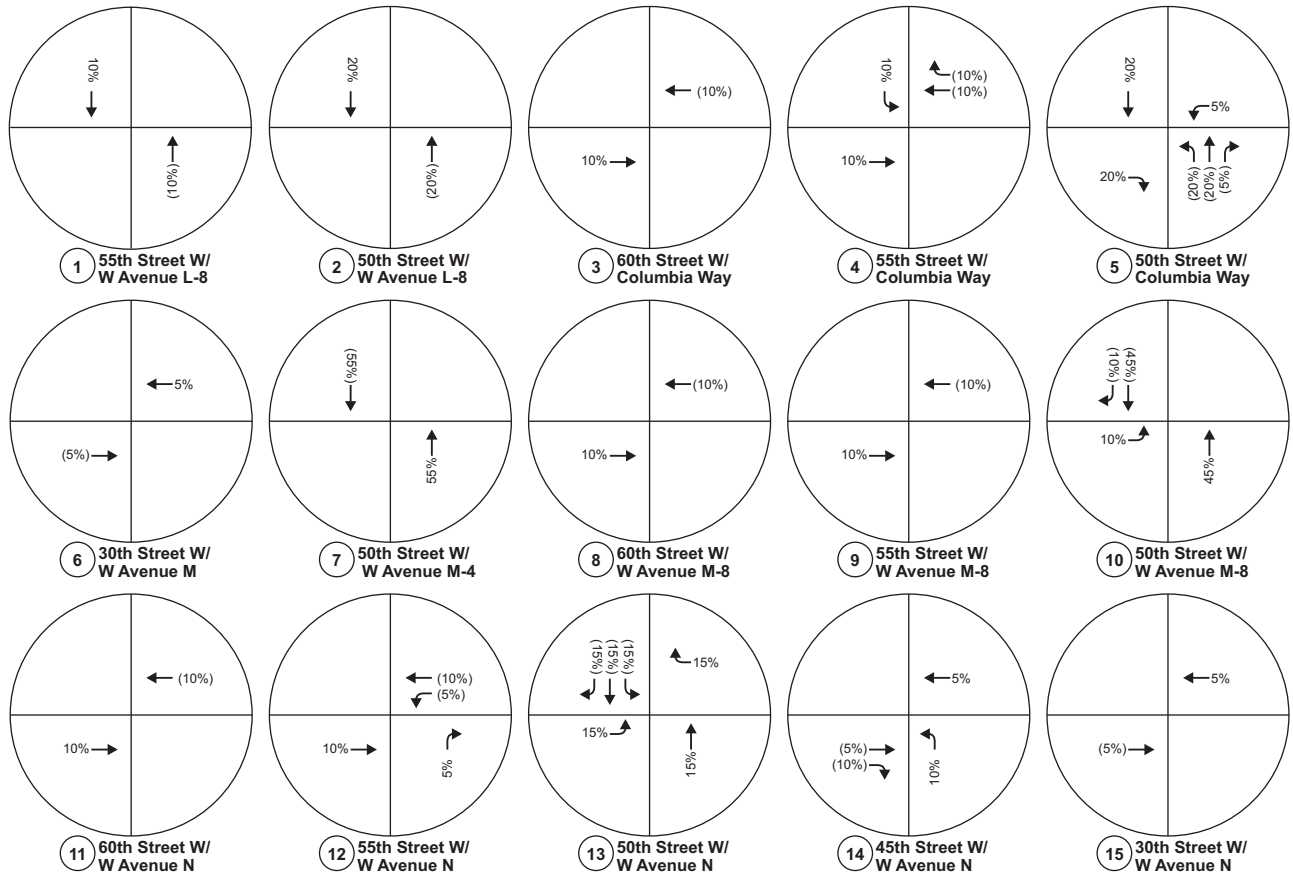
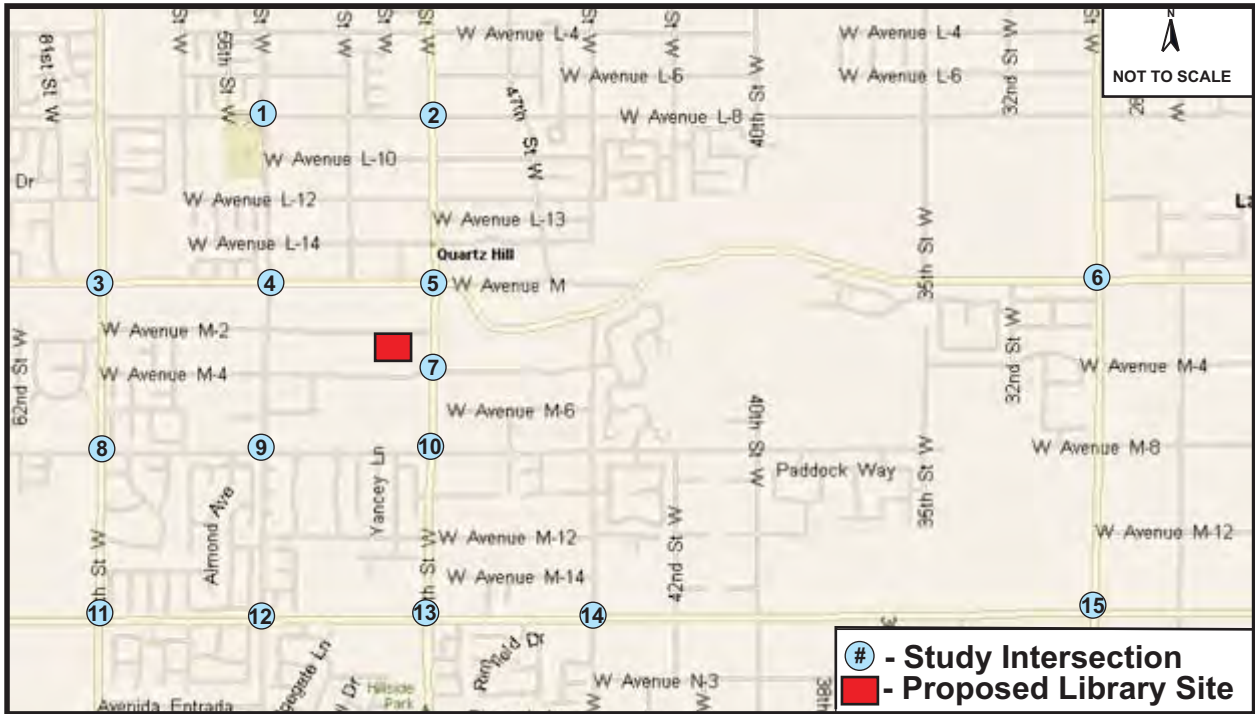
The new trips generated by the project are then assigned to the surrounding roadway and intersection network, based on the trip distribution patterns that were identified and approved by Los Angeles County, resulting in an estimate of the peak hour project traffic at each of the fifteen study intersections. **Figure 2-2** and **Figure 2-3** illustrate the "project only" trip assignment percentages and the "project only" traffic volumes onto the surrounding roadway network during the AM and PM peak hours, respectively. **Figure 2-4** illustrates the combined existing with project traffic volumes during the AM and PM peak hours.

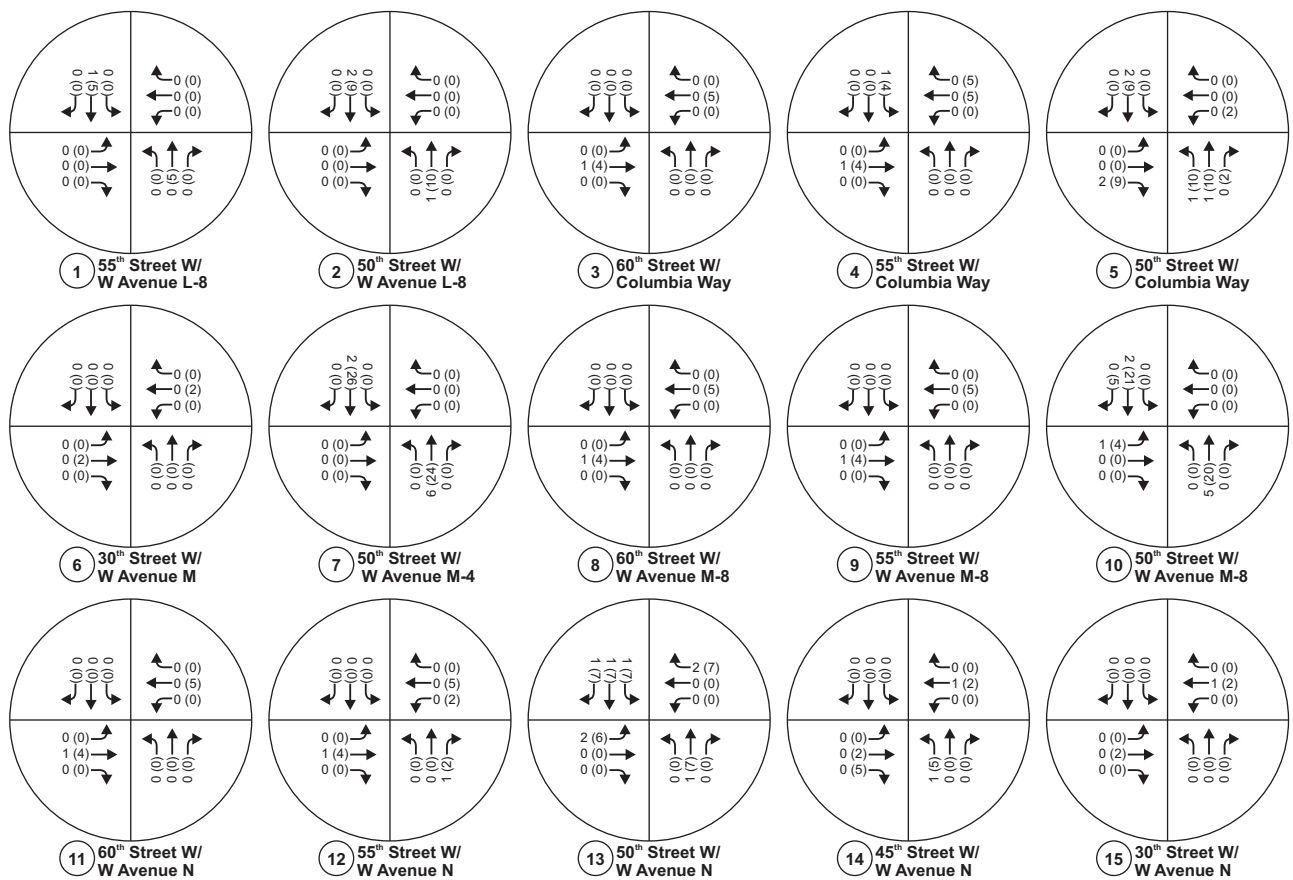
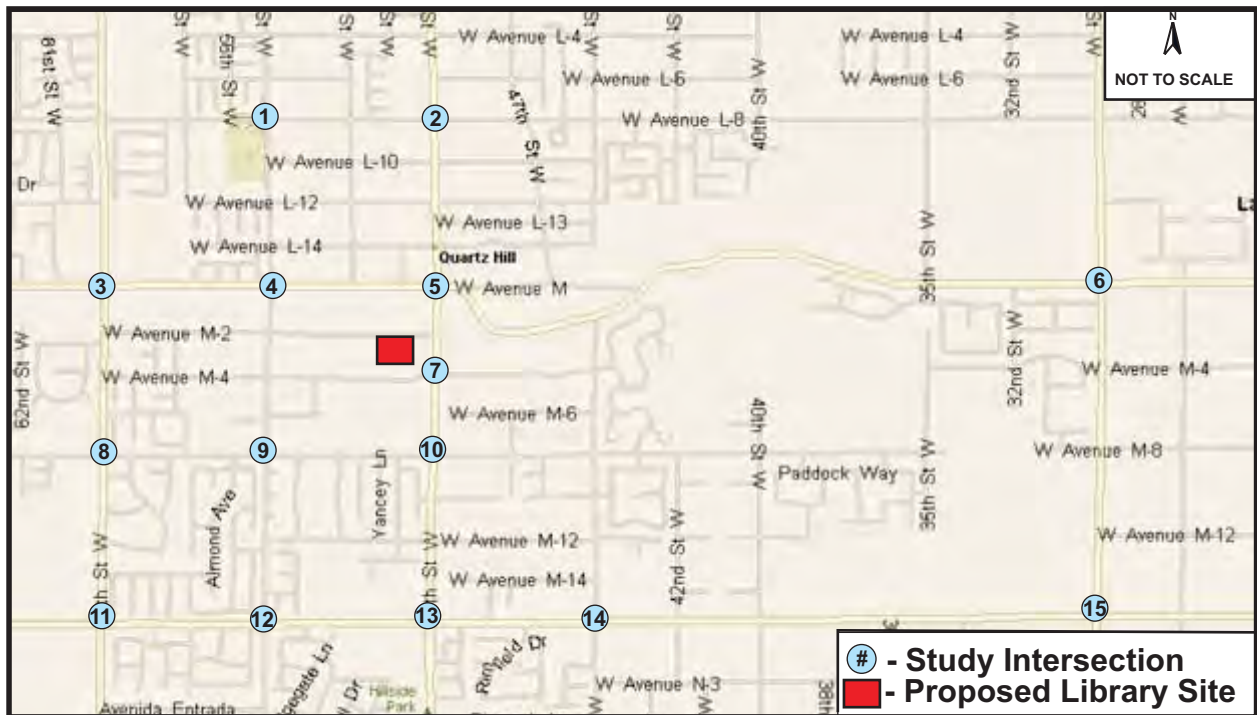
2.4.3 Intersection Level of Service

Table 2-3 presents the results of the AM and PM peak hour traffic operating conditions and corresponding LOS at each of the fifteen study intersections. The results indicate that only one intersection would operate at LOS F in the AM and PM peak hours (shaded cells). The remaining intersections would continue to operate at LOS D or better. The detailed existing conditions LOS worksheets are presented in **Appendix C**.

2.5 SUMMARY OF IMPACTS

Using the threshold criteria presented in **Table 1-2**, the "with project" intersection operating conditions were compared with the "no project" scenario to identify significantly (CEQA) affected locations. **Table 2-4** summarizes the intersection impacts at each of the study locations. As seen in **Table 2-4**, all fifteen study intersections are not anticipated to be significantly impacted as a result of the proposed Quartz Hill Library project.





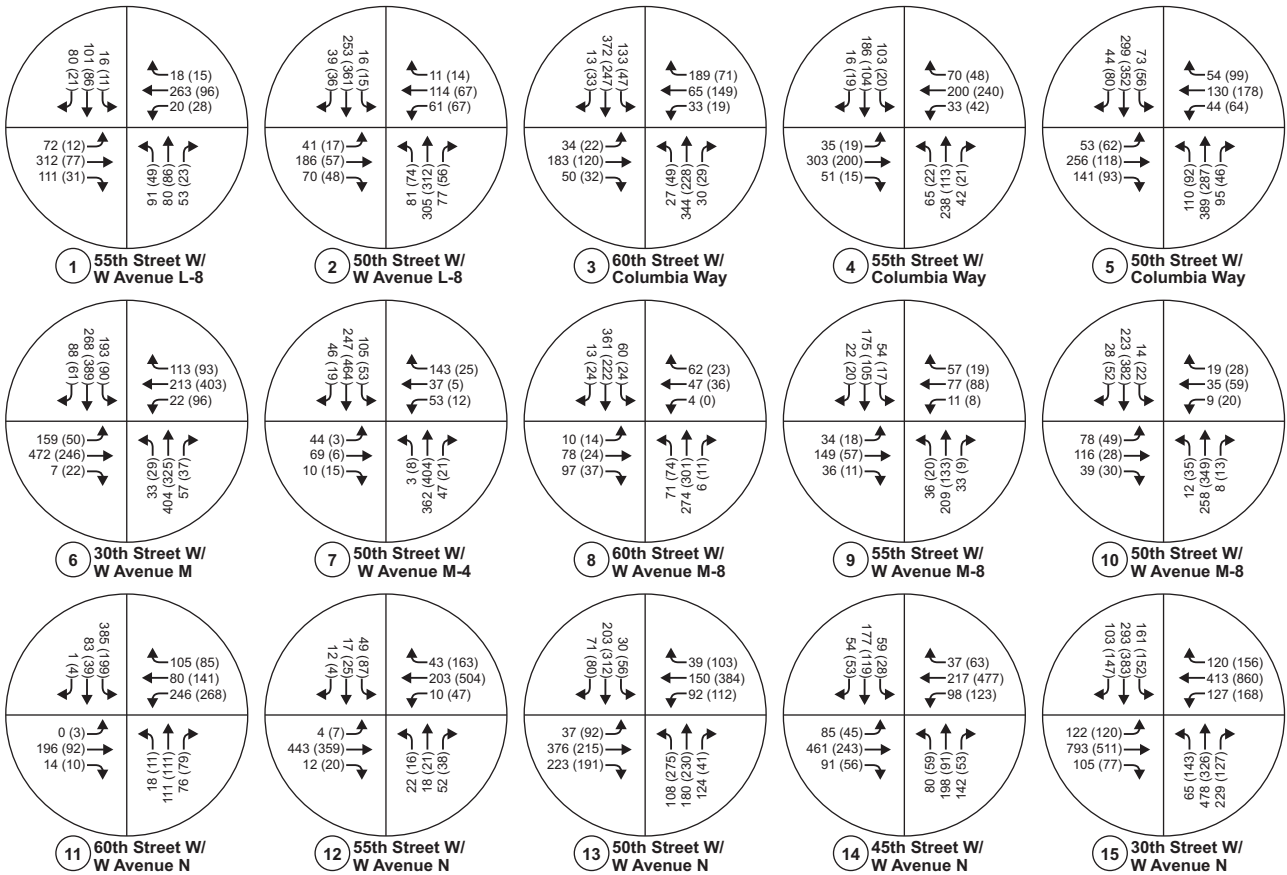


Table 2-3: Existing With Project Intersection LOS Analysis

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	55 th Street W and W Avenue L-8	All-Way Stop	0.510	A	0.299	A
2	50 th Street W and W Avenue L-8	Signalized	0.507	A	0.480	A
3	60 th Street W and Columbia Way	All-Way Stop	0.660	B	0.486	A
4	55 th Street W and Columbia Way	All-Way Stop	0.581	A	0.357	A
5	50 th Street W and Columbia Way	Signalized	0.576	A	0.528	A
6	30 th Street W and W Avenue M	Signalized	0.817	D	0.665	B
7	50 th Street W and W Avenue M-4	Signalized	0.541	A	0.422	A
8	60 th Street W and W Avenue M-8	All-Way Stop	0.494	A	0.348	A
9	55 th Street W and W Avenue M-8	All-Way Stop	0.387	A	0.272	A
10	50 th Street W and W Avenue M-8	Signalized	0.358	A	0.478	A
11	60 th Street W and W Avenue N	All-Way Stop	0.768	C	0.566	A
12	55 th Street W and W Avenue N	Signalized	0.323	A	0.353	A
13	50 th Street W and W Avenue N	Signalized	0.406	A	0.579	A
14	45 th Street W and W Avenue N	Signalized	0.610	B	0.538	A
15	30 th Street W and W Avenue N	Signalized	1.283	F	1.230	F

Table 2-4: Intersection Impacts Comparison - Existing With and Without Project

#	Intersection	Control Type	Peak Hour Analysis	Existing Without Project		Existing With Project		Existing With Project Change in V/C	Significant Impact
				LOS	V/C	LOS	V/C		
1	55 th Street W and W Avenue L-8	All-Way Stop	AM	0.510	A	0.510	A	0.000	NO
			PM	0.296	A	0.299	A	0.003	NO
2	50 th Street W and W Avenue L-8	Signalized	AM	0.506	A	0.507	A	0.001	NO
			PM	0.474	A	0.480	A	0.006	NO
3	60 th Street W and Columbia Way	All-Way Stop	AM	0.660	B	0.660	B	0.000	NO
			PM	0.483	A	0.486	A	0.003	NO
4	55 th Street W and Columbia Way	All-Way Stop	AM	0.580	A	0.581	A	0.001	NO
			PM	0.352	A	0.357	A	0.005	NO
5	50 th Street W and Columbia Way	Signalized	AM	0.576	A	0.576	A	0.000	NO
			PM	0.516	A	0.528	A	0.012	NO
6	30 th Street W and W Avenue M	Signalized	AM	0.817	D	0.817	D	0.000	NO
			PM	0.664	B	0.665	B	0.001	NO
7	50 th Street W and W Avenue M-4	Signalized	AM	0.537	A	0.541	A	0.004	NO
			PM	0.406	A	0.422	A	0.016	NO
8	60 th Street W and W Avenue M-8	All-Way Stop	AM	0.494	A	0.494	A	0.000	NO
			PM	0.345	A	0.348	A	0.003	NO
9	55 th Street W and W Avenue M-8	All-Way Stop	AM	0.386	A	0.387	A	0.001	NO
			PM	0.269	A	0.272	A	0.003	NO
10	50 th Street W and W Avenue M-8	Signalized	AM	0.354	A	0.358	A	0.004	NO
			PM	0.459	A	0.478	A	0.019	NO

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11	60 th Street W and W Avenue N	All-Way Stop	AM	0.768	C	0.768	C	0.000	NO
			PM	0.563	A	0.566	A	0.003	NO
12	55 th Street W and W Avenue N	Signalized	AM	0.322	A	0.323	A	0.001	NO
			PM	0.351	A	0.353	A	0.002	NO
13	50 th Street W and W Avenue N	Signalized	AM	0.405	A	0.406	A	0.001	NO
			PM	0.571	A	0.579	A	0.008	NO
14	45 th Street W and W Avenue N	Signalized	AM	0.610	B	0.610	B	0.000	NO
			PM	0.533	A	0.538	A	0.005	NO
15	30 th Street W and W Avenue N	Signalized	AM	1.283	F	1.283	F	0.000	NO
			PM	1.229	F	1.230	F	0.001	NO

Chapter 3 – Opening Year (2016) Conditions

The opening year (2016) conditions scenario consists of an evaluation of the opening year (2016) with and without project condition at the fifteen study intersections.

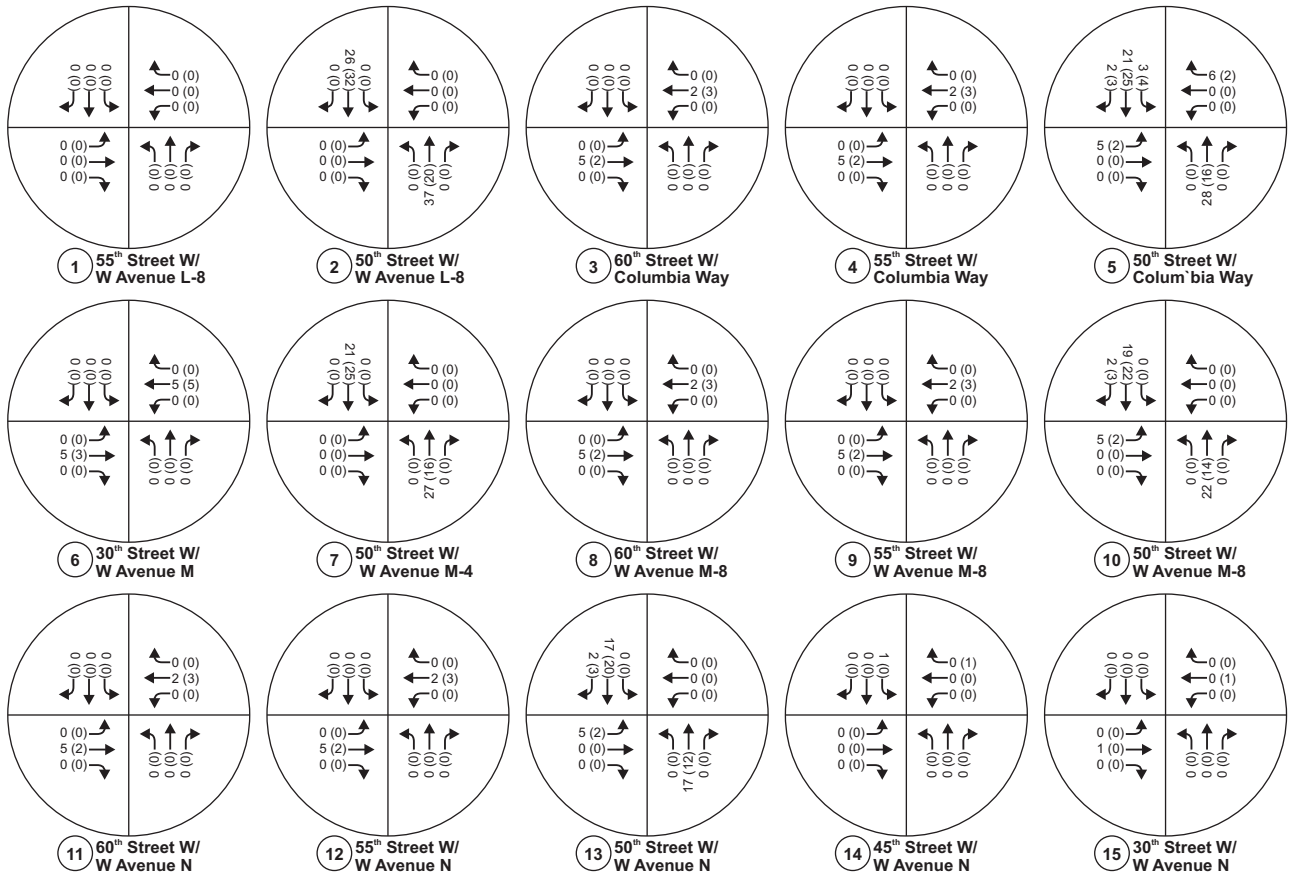
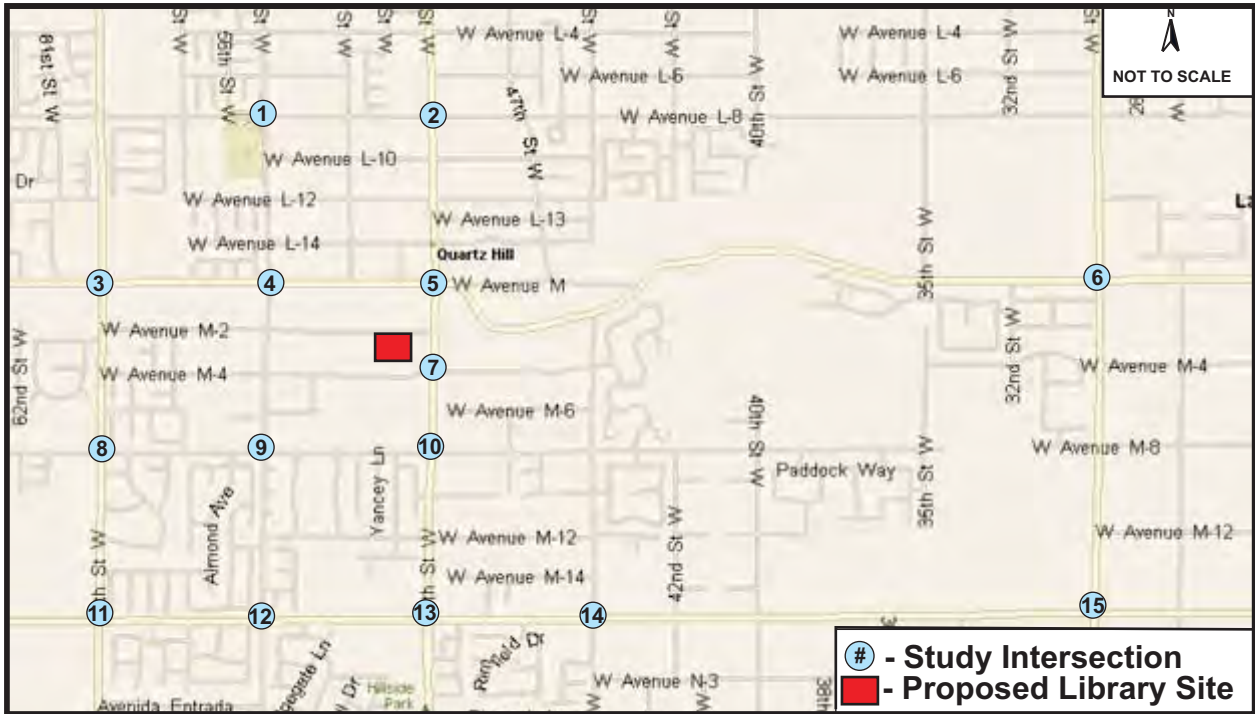
3.1 OPENING YEAR (2016) WITHOUT PROJECT CONDITIONS

Future background traffic is defined as expected non-project traffic on the roadway network in the future year at buildout of the proposed project. For the purposes of this analysis, it was determined that 2016 would be the opening year of the project, and therefore, 2016 conditions were evaluated as the “future” year scenario.

As directed by Los Angeles County staff, opening year (2016) background traffic forecasts were determined using traffic due to other known or related future development projects. Per the traffic study guidelines for Los Angeles County, this growth in traffic is expected to occur from other future development projects that are within a 1.5-mile radius of the proposed project site. These “cumulative” or related projects are those developments that are planned, programmed and/or funded and are expected to be in place within the same timeframe as the proposed project. A list of the related projects information was provided by the County of Los Angeles and the peak hour trips generated by these related projects were included in the determination of the future background volumes. The resulting AM and PM peak hour trips generated by the related projects are shown in **Table 3-1**. **Figure 3-1** shows the distribution of the opening year (2016) related projects peak hour traffic volumes during the AM and PM peak hours.

Project	Location	Land Use	Weekday					
			AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
1	4748 W Ave M-12	Single-Family Detached	0	1	1	1	0	1
2	NE corner of 50 th St W/W Ave L-2	Retail/Service Station/Carwash	49	44	93	34	41	75
3	SW corner of 50 th St W/W Ave N	General Office	11	1	12	2	10	12
4	South of 47 th St between Ave M & Quartz Hill Rd	Single-Family Detached	2	5	7	6	3	9
Total			62	51	113	43	54	97

¹ Provided by Los Angeles County

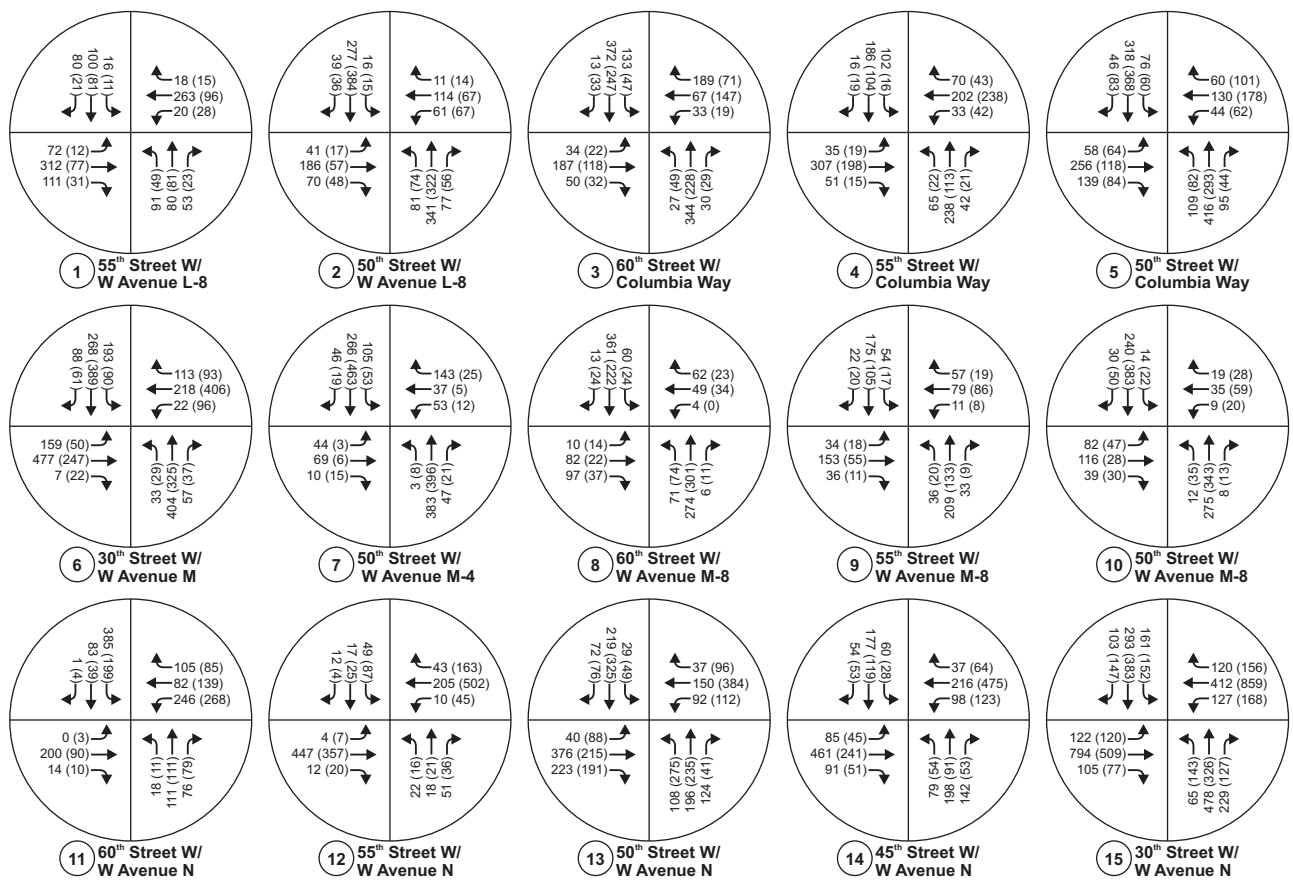
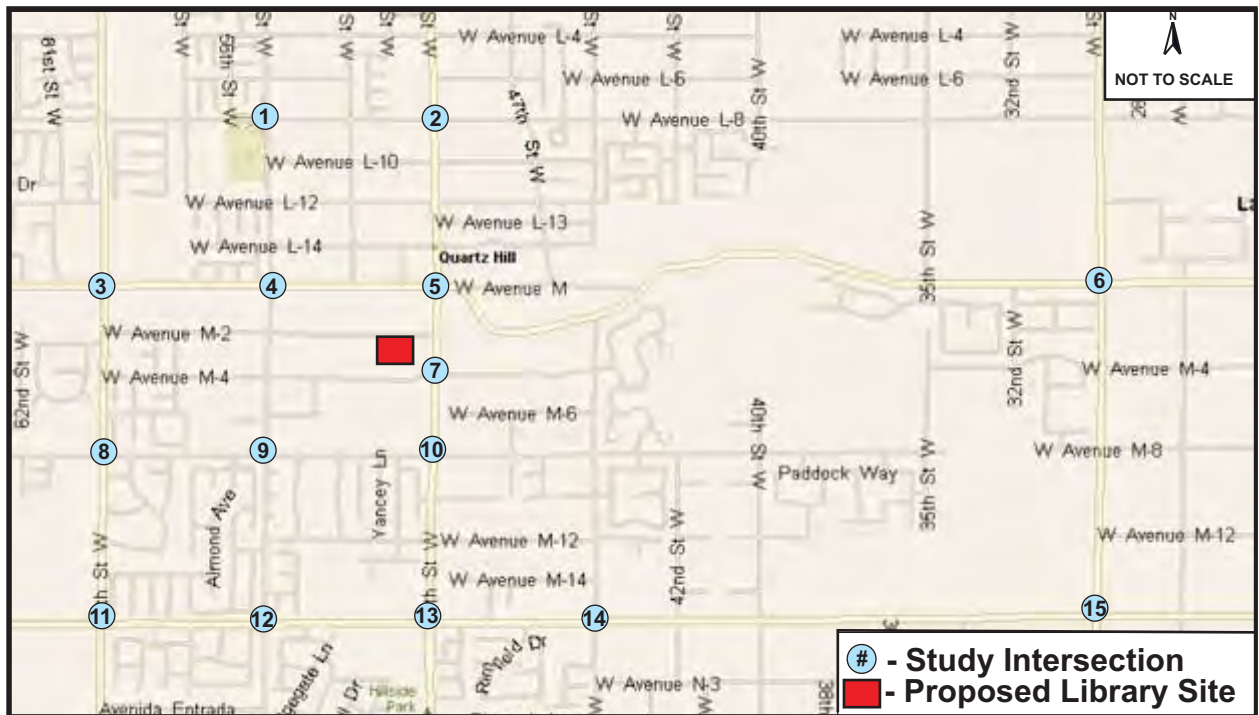


Trips generated by the related projects were added to the existing traffic volumes. **Figure 3-2** shows the opening year (2016) without project peak hour traffic volumes during the AM and PM peak hours.

3.1.1 Intersection Level of Service Analysis

Table 3-2 presents the results of the AM and PM peak hour traffic operating conditions and corresponding LOS at each of the fifteen study intersections. The results indicate that only one intersection would operate at LOS F in the AM and PM peak hours (shaded cells). The remaining study intersections would operate at LOS D or better. The detailed opening year without project LOS worksheets are presented in **Appendix D**.

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	55 th Street W and W Avenue L-8	All-Way Stop	0.510	A	0.296	A
2	50 th Street W and W Avenue L-8	Signalized	0.522	A	0.494	A
3	60 th Street W and Columbia Way	All-Way Stop	0.663	B	0.484	A
4	55 th Street W and Columbia Way	All-Way Stop	0.583	A	0.353	A
5	50 th Street W and Columbia Way	Signalized	0.595	A	0.533	A
6	30 th Street W and W Avenue M	Signalized	0.821	D	0.667	B
7	50 th Street W and W Avenue M-4	Signalized	0.554	A	0.421	A
8	60 th Street W and W Avenue M-8	All-Way Stop	0.497	A	0.347	A
9	55 th Street W and W Avenue M-8	All-Way Stop	0.389	A	0.271	A
10	50 th Street W and W Avenue M-8	Signalized	0.371	A	0.476	A
11	60 th Street W and W Avenue N	All-Way Stop	0.769	C	0.565	A
12	55 th Street W and W Avenue N	Signalized	0.323	A	0.352	A
13	50 th Street W and W Avenue N	Signalized	0.416	A	0.578	A
14	45 th Street W and W Avenue N	Signalized	0.611	B	0.533	A
15	30 th Street W and W Avenue N	Signalized	1.284	F	1.229	F



3.2 OPENING YEAR (2016) WITH PROJECT CONDITIONS

The future opening year (2016) with project conditions were analyzed based on an estimate of the number of new trips generated by the proposed Quartz Hill Library project and the list of related projects. The trips generated by the proposed project were presented earlier in Section 2.4.1.

3.2.1 Intersection Level of Service Analysis

Table 3-3 presents the results of the AM and PM peak hour traffic operating conditions and corresponding LOS at each of the fifteen study intersections. The results indicate that only one intersection would operate at LOS F in the AM and PM peak hours (shaded cells). The remaining intersections would operate at LOS D or better. The detailed opening year without project LOS worksheets are presented in **Appendix E**.

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	55 th Street W and W Avenue L-8	All-Way Stop	0.510	A	0.299	A
2	50 th Street W and W Avenue L-8	Signalized	0.523	A	0.500	A
3	60 th Street W and Columbia Way	All-Way Stop	0.663	B	0.487	A
4	55 th Street W and Columbia Way	All-Way Stop	0.584	A	0.359	A
5	50 th Street W and Columbia Way	Signalized	0.596	A	0.544	A
6	30 th Street W and W Avenue M	Signalized	0.821	D	0.669	B
7	50 th Street W and W Avenue M-4	Signalized	0.558	A	0.438	A
8	60 th Street W and W Avenue M-8	All-Way Stop	0.497	A	0.349	A
9	55 th Street W and W Avenue M-8	All-Way Stop	0.390	A	0.274	A
10	50 th Street W and W Avenue M-8	Signalized	0.375	A	0.495	A
11	60 th Street W and W Avenue N	All-Way Stop	0.769	C	0.568	A
12	55 th Street W and W Avenue N	Signalized	0.325	A	0.354	A
13	50 th Street W and W Avenue N	Signalized	0.417	A	0.586	A
14	45 th Street W and W Avenue N	Signalized	0.611	B	0.538	A
15	30 th Street W and W Avenue N	Signalized	1.284	F	1.231	F

3.3 SUMMARY OF IMPACTS

Using the threshold criteria presented in **Table 1-2**, the "with project" intersection operating conditions were compared with the "no project" scenario to identify significantly (CEQA) affected locations. **Table 3-4** summarizes the intersection impacts at each of the study locations. As shown in **Table 3-4**, all fifteen study intersections are not anticipated to be significantly impacted as a result of the proposed Quartz Hill Library project.

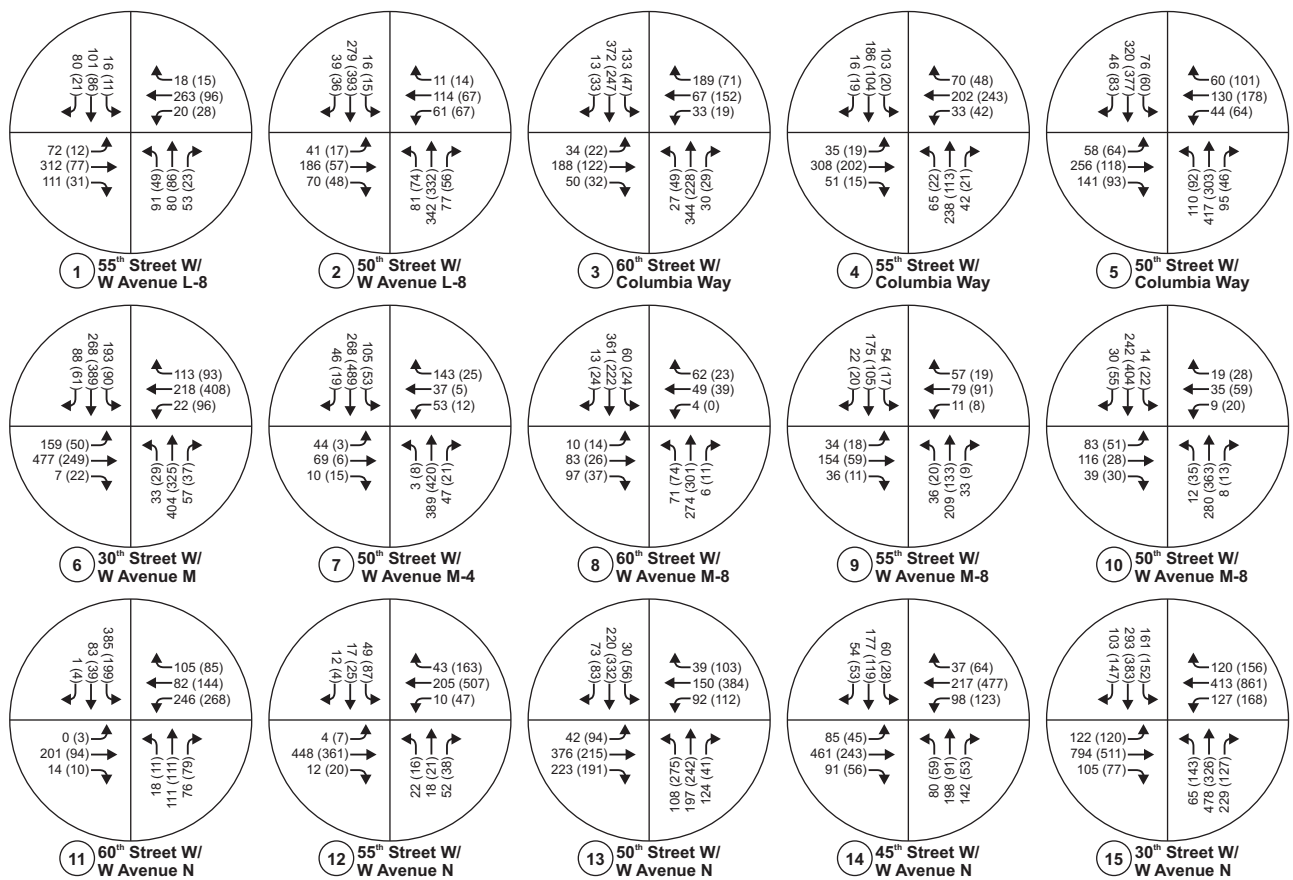
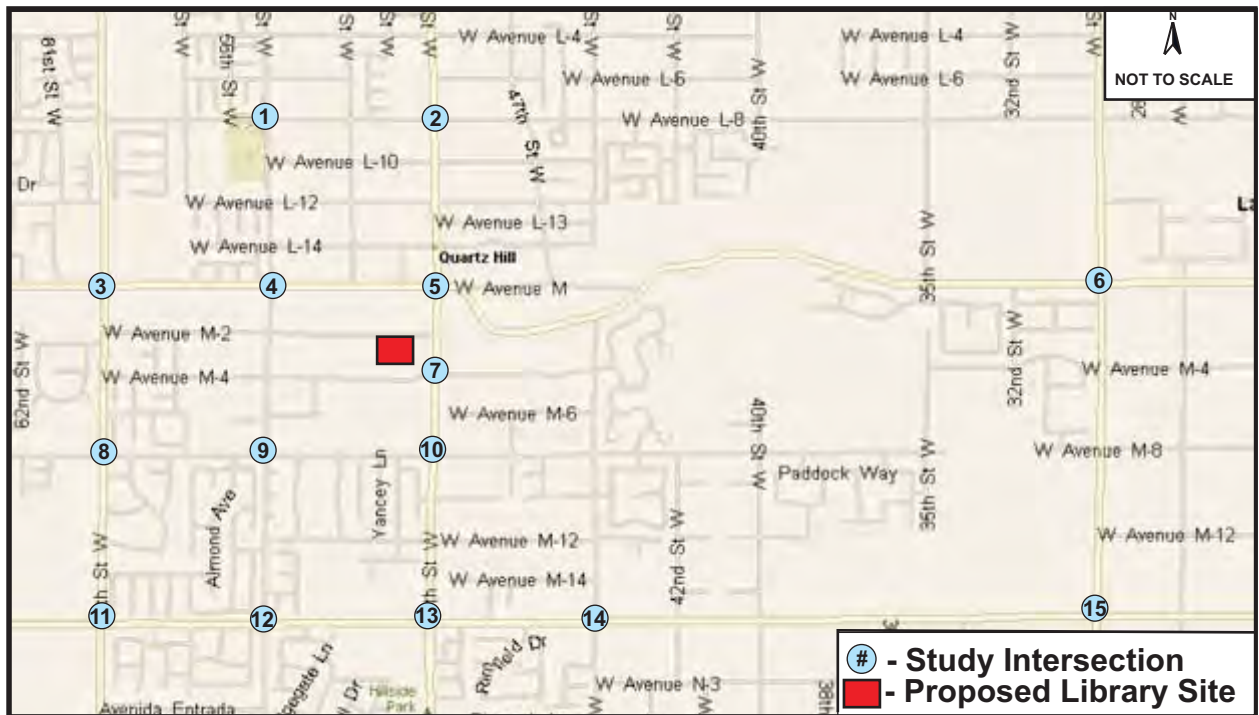


Table 3-4: Intersection Impacts Comparison - Opening Year (2016) With and Without Project										
#	Intersection	Control Type	Peak Hour Analysis	2016 Without Project		2016 With Project		2016 With Project		Significant Impact
				LOS	V/C	LOS	V/C	LOS	V/C	
1	55 th Street W and W Avenue L-8	All-Way Stop	AM	0.510	A	0.510	A	0.000		NO
			PM	0.296	A	0.299	A	0.003		NO
2	50 th Street W and W Avenue L-8	Signalized	AM	0.522	A	0.523	A	0.001		NO
			PM	0.494	A	0.500	A	0.006		NO
3	60 th Street W and Columbia Way	All-Way Stop	AM	0.663	B	0.663	B	0.000		NO
			PM	0.484	A	0.487	A	0.003		NO
4	55 th Street W and Columbia Way	All-Way Stop	AM	0.583	A	0.584	A	0.001		NO
			PM	0.353	A	0.359	A	0.006		NO
5	50 th Street W and Columbia Way	Signalized	AM	0.595	A	0.596	A	0.001		NO
			PM	0.533	A	0.544	A	0.011		NO
6	30 th Street W and W Avenue M	Signalized	AM	0.821	D	0.821	D	0.000		NO
			PM	0.667	B	0.669	B	0.002		NO
7	50 th Street W and W Avenue M-4	Signalized	AM	0.554	A	0.558	A	0.004		NO
			PM	0.421	A	0.438	A	0.017		NO
8	60 th Street W and W Avenue M-8	All-Way Stop	AM	0.497	A	0.497	A	0.000		NO
			PM	0.347	A	0.349	A	0.002		NO
9	55 th Street W and W Avenue M-8	All-Way Stop	AM	0.389	A	0.390	A	0.001		NO
			PM	0.271	A	0.274	A	0.003		NO
10	50 th Street W and W Avenue M-8	Signalized	AM	0.371	A	0.375	A	0.004		NO
			PM	0.476	A	0.495	A	0.019		NO

Draft Traffic Impact Study

11	60 th Street W and W Avenue N	All-Way Stop	AM	0.769	C	0.769	C	0.000	NO
			PM	0.565	A	0.568	A	0.003	NO
12	55 th Street W and W Avenue N	Signalized	AM	0.323	A	0.325	A	0.002	NO
			PM	0.352	A	0.354	A	0.002	NO
13	50 th Street W and W Avenue N	Signalized	AM	0.416	A	0.417	A	0.001	NO
			PM	0.578	A	0.586	A	0.008	NO
14	45 th Street W and W Avenue N	Signalized	AM	0.611	B	0.611	B	0.000	NO
			PM	0.533	A	0.538	A	0.005	NO
15	30 th Street W and W Avenue N	Signalized	AM	0.410	A	0.411	A	0.001	NO
			PM	0.277	A	0.280	A	0.003	NO

3.4 ACCESS AND CIRCULATION

Access to the site will be via one (1) full access driveway along Avenue M-2. Inbound traffic will be permitted from eastbound and westbound Avenue M-2. Outbound traffic is proposed to be directed eastbound and westbound onto Avenue M-2 by permitting both right and left turn movements.

3.5 CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

An analysis of the regional transportation facilities in the vicinity of the project was conducted in accordance with the traffic impact analysis (TIA) procedures outlined in the *2010 Congestion Management Program* (Los Angeles Metro, 2010). The CMP requires that a TIA be performed for all arterial monitoring intersections where a project would add 50 or more trips during either the morning or afternoon weekday peak hour and all mainline freeway monitoring locations where a project would add 150 or more trips (in either direction) during the morning or afternoon weekday peak hours. It also requires a review of the future transit capacity after implementation of a project.

3.5.1 CMP Intersection Analysis

The project is not expected to add 50 or more peak hour trips on to the nearest arterial monitoring intersection. Therefore, the project would not result in a significant traffic impact at any CMP arterial monitoring intersections under any of the analysis scenarios.

3.5.2 CMP Freeway Analysis

The project is not expected to add 150 or more peak hour trips, in either direction, on to the nearest freeway mainline monitoring location. Therefore, the project would not result in a significant traffic impact at any CMP freeway monitoring location under any of the analysis scenarios.

3.5.3 CMP Transit Analysis

The CMP presents a methodology for estimating the number of transit trips, which are anticipated from a project, based on the number of vehicle trips that are generated. This methodology assumes an average vehicle ridership factor of 1.4 to estimate the number of person trips traveling to and from a project.

Based on the CMP methodology, it is estimated that approximately 3.5% of these person trips may use public transit to travel to and from the proposed library project. As a result, the project would generate approximately 1 new transit trip in the weekday AM peak hour and 5 new transit trips in the weekday PM peak hour. Since the library project location is served by multiple transit routes, no significant impacts on the regional transit systems are expected with this minimal level of potential increase in transit trips.

Chapter 4 – Conclusions

The proposed public library site is located in the southwest corner of the intersection of 50th Street and Avenue M-2 in the Business District of Quartz Hill, an unincorporated community in the Antelope Valley region of northern Los Angeles County. The proposed project consists of a 12,500-square-foot public library. The project site is currently vacant. Vehicular access to the site is anticipated to be provided through one (1) full access driveway on Avenue M-2 accommodating both ingress and egress movements. The proposed opening year for the project is anticipated to be around August 2016.

A traffic evaluation was prepared and a peak hour intersection level of service analysis was conducted at fifteen study locations for the existing and future conditions to determine the potential traffic impacts of the proposed project on the existing roadway network. The results of the traffic analyses demonstrated that the fifteen study intersections are expected to operate at acceptable levels of service for the future traffic conditions during both the AM and PM peak hours. The proposed Quartz Hill Library project will not significantly impact the transportation environment surrounding the project site.

Los Angeles County Quartz Hill Library

**Appendices for the Draft Transportation Impact Study
In Support of the
Initial Study/Mitigated Negative Declaration (IS/MND)**

**Prepared for:
ICF Jones & Stokes**

**Prepared by:
Intueor Consulting, Inc.**



September 2014

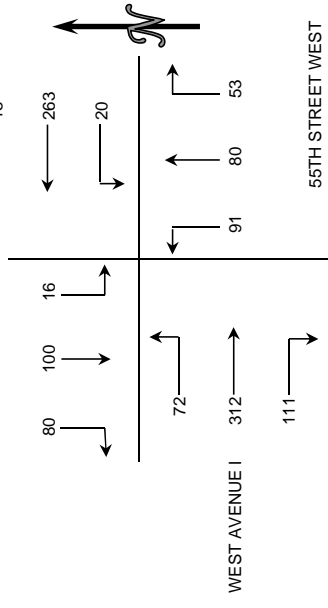
Appendix A
Intersection Turning Movement Counts

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 55TH STREET WEST
 E/W WEST AVENUE L8
 CITY: QUARTZ HILL

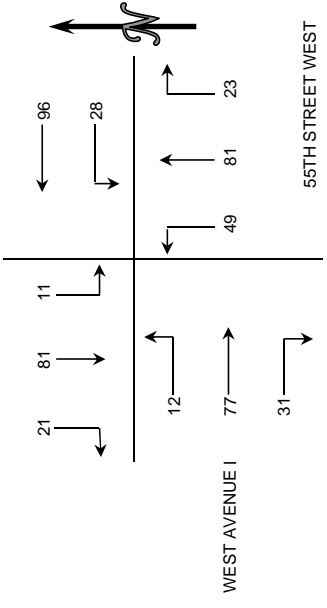
7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	16	27	3	1	70	4	9	10	27	22	66	8	263
715-730	15	26	8	5	70	11	13	23	23	34	92	12	332
730-745	25	32	5	6	70	3	16	25	27	28	78	24	339
745-800	24	15	0	6	53	2	15	22	14	27	76	28	282
800-815	4	13	2	4	17	1	3	19	3	8	11	5	90
815-830	4	9	1	1	12	2	3	15	10	2	24	2	85
830-845	5	13	0	3	6	4	1	11	4	1	9	1	58
845-900	5	16	2	1	13	1	4	15	7	3	7	4	78
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
700-800	80	100	16	18	263	20	53	80	91	111	312	72	1216
715-815	68	86	15	21	210	17	47	89	67	97	257	69	1043
730-830	57	69	8	17	152	8	37	81	54	65	189	59	796
745-845	37	50	3	14	88	9	22	67	31	38	120	36	515
800-900	18	51	5	9	48	8	11	60	24	14	51	12	311

PEAK HOUR
700-800



4:00 PM TO 6:00 PM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	9	20	1	3	26	6	4	18	12	8	19	7	133
415-430	5	21	1	2	28	7	7	22	13	4	26	1	137
430-445	3	20	3	3	24	6	4	16	10	8	15	2	114
445-500	6	20	4	4	32	8	5	17	7	6	22	4	135
500-515	2	28	1	2	20	5	6	20	12	10	25	3	134
515-530	4	15	2	4	19	7	6	22	13	7	10	4	113
530-545	9	18	4	5	25	8	6	22	17	8	20	1	143
545-600	6	12	3	1	25	10	9	22	6	5	21	4	124
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
400-500	23	81	9	12	110	27	20	73	42	26	82	14	519
415-515	16	89	9	11	104	26	22	75	42	28	88	10	520
430-530	15	83	10	13	96	26	21	75	42	31	72	13	496
445-545	21	81	11	15	96	28	23	81	49	31	77	12	525
500-600	21	73	10	12	89	30	27	86	48	30	76	12	514

PEAK HOUR
445-545

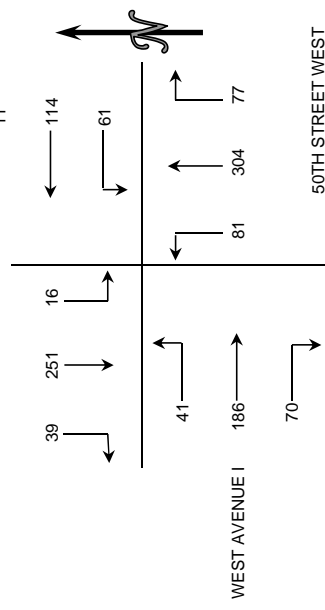


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 50TH STREET WEST
 E/W WEST AVENUE L8
 CITY: QUARTZ HILL

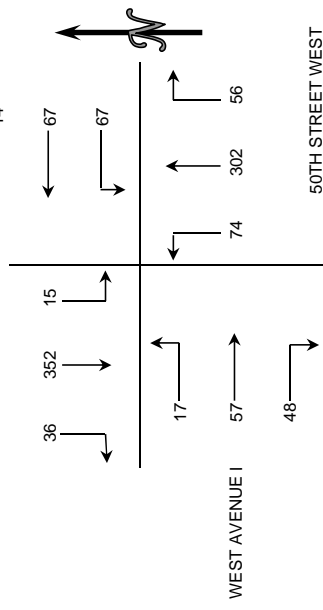
7:00 AM TO 9:00 AM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	2	30	5	3	19	11	12	56	8	12	32	6	196
7:15-7:30	9	89	6	3	27	23	15	71	17	20	57	10	347
7:30-7:45	9	62	7	4	41	14	17	88	28	20	60	12	362
7:45-8:00	12	50	3	1	33	12	31	95	23	18	48	15	341
8:00-8:15	9	50	0	3	13	12	14	50	13	12	21	4	201
8:15-8:30	13	40	4	1	19	7	7	48	16	7	15	3	180
8:30-8:45	7	48	3	3	11	9	11	40	12	7	9	4	164
8:45-9:00	6	39	2	1	12	7	8	47	13	6	8	6	155
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-8:00	32	231	21	11	120	60	75	310	76	70	197	43	1246
7:15-8:15	39	251	16	11	114	61	77	304	81	70	186	41	1251
7:30-8:30	43	202	14	9	106	45	69	281	80	57	144	34	1084
7:45-8:45	41	188	10	8	76	40	63	233	64	44	93	26	886
8:00-9:00	35	177	9	8	55	35	40	185	54	32	53	17	700

PEAK HOUR	7:15-8:15
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4:15-5:15													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	10	90	1	6	12	11	17	78	13	10	13	5	266
4:15-4:30	4	94	5	3	22	12	10	74	12	9	12	2	259
4:30-4:45	11	95	2	4	20	22	12	73	17	14	13	3	286
4:45-5:00	11	81	5	4	13	16	14	78	25	15	14	8	284
5:00-5:15	10	82	3	3	12	17	20	77	20	10	18	4	276
5:15-5:30	10	88	2	2	22	16	18	51	14	12	13	8	256
5:30-5:45	13	87	5	1	10	7	18	74	15	14	13	8	265
5:45-6:00	11	78	2	5	16	10	8	75	18	11	9	4	247
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-5:00	36	360	13	17	67	61	53	303	67	48	52	18	1095
4:15-5:15	36	352	15	14	67	67	56	302	74	48	57	17	1105
4:30-5:30	42	346	12	13	67	71	64	279	76	51	58	23	1102
4:45-5:45	44	338	15	10	57	56	70	280	74	51	58	28	1081
5:00-6:00	44	335	12	11	60	50	64	277	67	47	53	24	1044

PEAK HOUR	4:15-5:15
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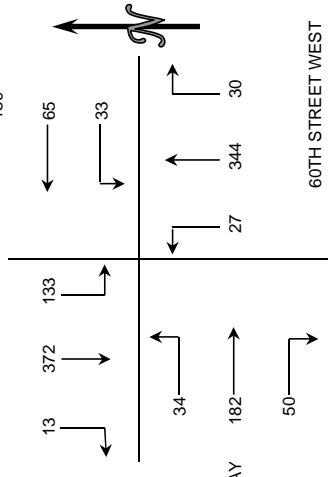


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 60TH STREET WEST
 E/W COLUMBIA WAY
 CITY: QUARTZ HILL

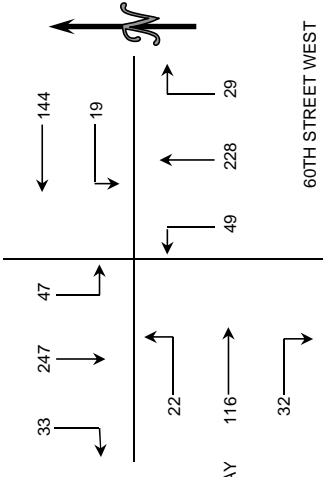
7:00 AM TO 9:00 AM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-715	3	84	24	66	21	4	5	99	4	8	44	6
715-730	3	128	58	77	14	8	6	82	8	18	38	7
730-745	4	99	25	21	12	11	11	88	10	14	54	14
745-800	3	61	26	25	18	10	8	75	5	10	46	7
800-815	2	44	14	9	10	2	6	28	3	5	29	4
815-830	1	31	15	8	14	4	5	25	6	6	23	2
830-845	1	42	14	7	13	4	4	18	7	4	22	15
845-900	8	32	13	5	11	5	2	24	6	2	22	2
HOUR TOTALS												
TIME	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-800	13	372	133	189	65	33	30	344	27	50	182	34
715-815	12	332	123	132	54	31	31	273	26	47	167	32
730-830	10	235	80	63	54	27	30	216	24	35	152	27
745-845	7	178	69	49	55	20	23	146	21	25	120	28
800-900	12	149	56	29	48	15	17	95	22	17	96	23
TOTAL												
	13	372	133	189	65	33	30	344	27	50	182	34

PEAK HOUR
700-800



4:00 PM TO 6:00 PM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-415	1	52	9	18	33	5	2	53	10	13	23	7
415-430	4	38	11	10	37	5	6	40	13	5	26	5
430-445	3	44	13	15	49	3	10	52	6	11	37	4
445-500	6	54	18	14	43	7	4	58	10	4	25	8
500-515	6	60	13	19	29	0	6	56	16	7	30	6
515-530	3	53	15	15	35	8	6	62	9	10	29	4
530-545	9	67	15	22	39	4	6	53	9	7	25	7
545-600	15	67	4	15	41	4	11	57	15	8	32	5
HOUR TOTALS												
TIME	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-500	14	188	51	57	162	20	22	203	39	33	111	24
415-515	19	196	55	58	158	15	26	206	45	27	118	23
430-530	18	211	59	63	156	18	26	228	41	32	121	22
445-545	24	234	61	70	146	19	22	229	44	28	109	25
500-600	33	247	47	71	144	19	29	228	49	32	116	22
TOTAL												
	33	247	47	71	144	19	29	228	49	32	116	22

PEAK HOUR
500-600

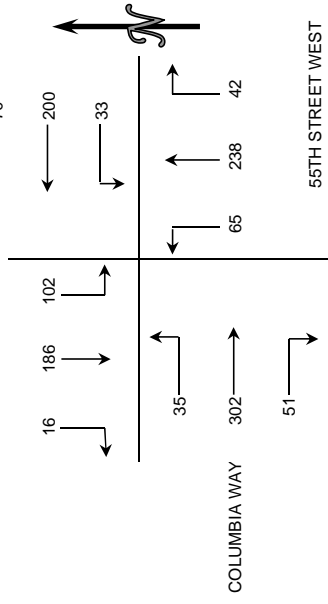


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 55TH STREET WEST
 E/W COLUMBIA WAY
 CITY: QUARTZ HILL

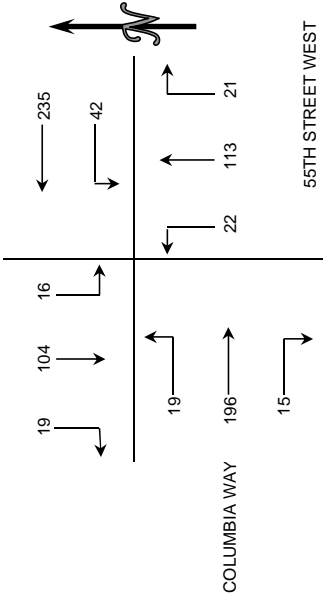
7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	6	41	20	17	60	4	8	43	22	15	78	5	319
7:15-7:30	4	48	34	11	46	11	12	63	31	11	90	7	368
7:30-7:45	3	56	36	31	52	14	8	68	5	16	81	12	382
7:45-8:00	3	41	12	11	42	4	14	64	7	9	53	11	271
8:00-8:15	5	11	11	5	25	11	9	21	4	6	52	3	163
8:15-8:30	2	8	2	4	26	2	4	12	1	4	38	1	104
8:30-8:45	2	11	4	3	19	5	6	12	4	1	50	2	119
8:45-9:00	4	18	3	3	24	4	9	24	2	2	50	3	146
HOURLY TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	16	186	102	70	200	33	42	238	65	51	302	35	1340
7:15-8:15	15	156	93	58	165	40	43	216	47	42	276	33	1184
7:30-8:30	13	116	61	51	145	31	35	165	17	35	224	27	920
7:45-8:45	12	71	29	23	112	22	33	109	16	20	193	17	657
8:00-9:00	13	48	20	15	94	22	28	69	11	13	190	9	532

PEAK HOUR
7:00-8:00



4:00 PM TO 6:00 PM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	11	18	8	4	73	8	3	23	4	3	59	5	219
4:15-4:30	5	14	5	11	49	10	4	19	5	5	51	3	181
4:30-4:45	4	18	7	5	52	10	8	22	5	5	50	4	190
4:45-5:00	4	16	4	7	51	17	13	20	3	10	47	5	197
5:00-5:15	6	32	8	14	55	7	7	26	2	5	59	3	224
5:15-5:30	3	25	4	6	59	10	4	29	8	4	39	4	195
5:30-5:45	4	27	0	16	60	14	6	28	8	2	57	3	225
5:45-6:00	6	20	4	7	61	11	4	30	4	4	41	9	201
HOURLY TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	24	66	24	27	225	45	28	84	17	23	207	17	787
4:15-5:15	19	80	24	37	207	44	32	87	15	25	207	15	792
4:30-5:30	17	91	23	32	217	44	32	97	18	24	195	16	806
4:45-5:45	17	100	16	43	225	48	30	103	21	21	202	15	841
5:00-6:00	19	104	16	43	235	42	21	113	22	15	196	19	845

PEAK HOUR
5:00-6:00

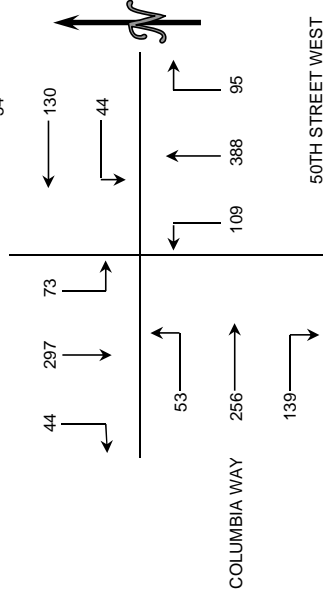


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 50TH STREET WEST
 E/W COLUMBIA WAY
 CITY: QUARTZ HILL

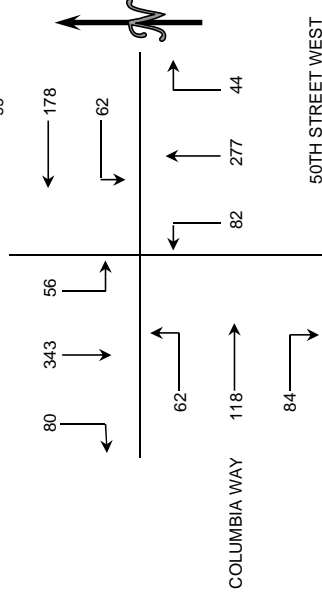
7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	13	56	16	12	26	5	13	46	10	27	49	11	284
7:15-7:30	16	99	23	11	40	12	24	97	25	40	75	8	470
7:30-7:45	9	82	17	11	34	15	36	120	43	47	80	12	506
7:45-8:00	6	60	17	20	30	12	22	125	31	25	52	22	422
8:00-8:15	9	48	10	13	26	2	8	49	11	14	41	15	246
8:15-8:30	4	42	10	10	14	7	8	55	7	13	33	14	217
8:30-8:45	9	43	12	11	15	5	11	68	13	18	42	11	258
8:45-9:00	10	39	12	12	18	6	8	47	11	17	40	12	232
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	44	297	73	54	130	44	95	388	109	139	256	53	1682
7:15-8:15	40	289	67	55	130	41	90	391	110	126	248	57	1644
7:30-8:30	28	232	54	54	104	36	74	349	92	99	206	63	1391
7:45-8:45	28	193	49	54	85	26	49	297	62	70	168	62	1143
8:00-9:00	32	172	44	46	73	20	35	219	42	62	156	52	953

PEAK HOUR
7:00-8:00



4:30-5:30													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	14	80	15	20	46	5	9	84	17	19	12	15	336
4:15-4:30	18	78	6	22	49	11	9	90	11	13	33	12	352
4:30-4:45	23	83	13	36	44	17	9	20	13	15	22	10	305
4:45-5:00	19	80	10	26	42	12	13	98	22	29	37	22	410
5:00-5:15	17	81	17	18	59	18	14	81	24	22	30	17	398
5:15-5:30	21	99	16	19	33	15	8	78	23	18	29	13	372
5:30-5:45	15	70	11	16	36	10	4	95	10	11	5	11	294
5:45-6:00	9	78	12	16	47	13	11	66	12	15	7	10	296
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	74	321	44	104	181	45	40	292	63	76	104	59	1403
4:15-5:15	77	322	46	102	194	58	45	289	70	79	122	61	1465
4:30-5:30	80	343	56	99	178	62	44	277	82	84	118	62	1485
4:45-5:45	72	330	54	79	170	55	39	352	79	80	101	63	1474
5:00-6:00	62	328	56	69	175	56	37	320	69	66	71	51	1360

PEAK HOUR
4:30-5:30

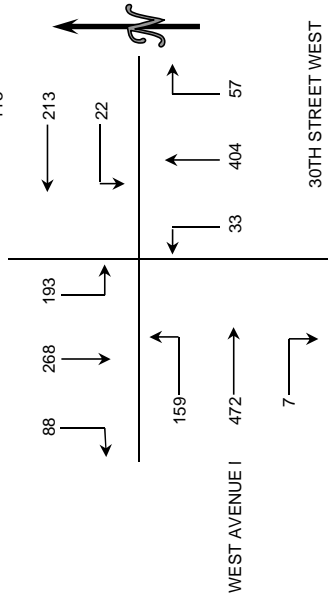


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 30TH STREET WEST
 E/W WEST AVENUE M
 CITY: QUARTZ HILL

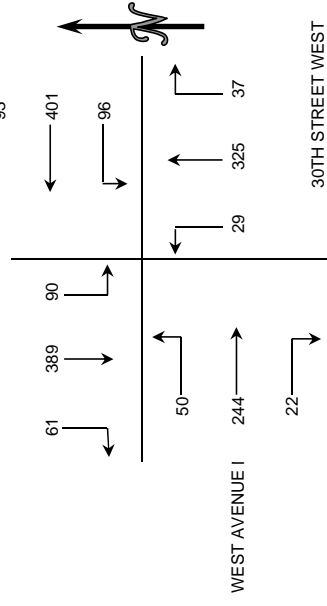
7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	10	41	17	20	41	8	3	29	6	5	61	16	257
7:15-7:30	16	74	49	22	60	4	10	79	9	1	141	37	502
7:30-7:45	24	69	61	64	63	7	22	123	14	2	126	60	635
7:45-8:00	39	76	50	17	39	3	13	106	4	2	116	41	506
8:00-8:15	9	49	33	10	51	8	12	96	6	2	89	21	386
8:15-8:30	7	51	22	13	29	2	16	53	1	5	91	20	310
8:30-8:45	10	53	17	6	32	5	15	47	2	3	65	17	272
8:45-9:00	13	48	10	8	41	5	23	64	2	5	85	9	313
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	89	260	177	123	203	22	48	337	33	10	444	154	1900
7:15-8:15	88	268	193	113	213	22	57	404	33	7	472	159	2029
7:30-8:30	79	245	166	104	182	20	63	378	25	11	422	142	1837
7:45-8:45	65	229	122	46	151	18	56	302	13	12	361	99	1474
8:00-9:00	39	201	82	37	153	20	66	260	11	15	330	67	1281

PEAK HOUR
7:15-8:15



4:15-5:15													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	10	96	21	19	78	19	15	77	11	2	62	19	429
4:15-4:30	21	97	35	22	128	22	15	91	5	4	68	11	519
4:30-4:45	15	92	16	14	85	12	9	70	9	2	48	17	389
4:45-5:00	15	88	19	23	94	27	8	65	8	8	56	10	421
5:00-5:15	10	112	20	34	94	35	5	99	7	8	72	12	508
5:15-5:30	17	84	27	27	91	18	4	77	4	4	64	21	438
5:30-5:45	14	87	20	23	97	13	8	93	3	3	70	17	448
5:45-6:00	14	80	15	20	61	10	12	110	5	4	38	12	381
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	61	373	91	78	385	80	47	303	33	16	234	57	1758
4:15-5:15	61	389	90	93	401	96	37	325	29	22	244	50	1837
4:30-5:30	57	376	82	98	364	92	26	311	28	22	240	60	1756
4:45-5:45	56	371	86	107	376	93	25	334	22	23	262	60	1815
5:00-6:00	55	363	82	104	343	76	29	379	19	19	244	62	1775

PEAK HOUR
4:15-5:15

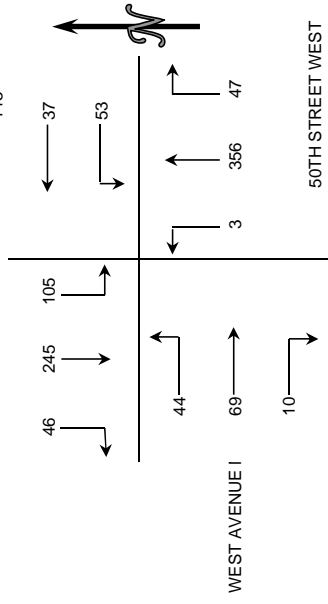


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 50TH STREET WEST
 E/W WEST AVENUE M 4
 CITY: QUARTZ HILL

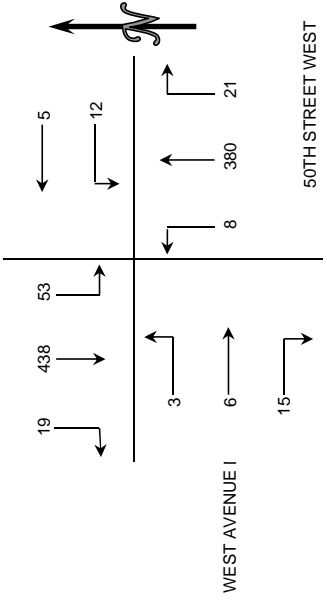
7:00 AM TO 9:00 AM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-715	10	49	21	21	5	12	4	74	1	1	17	4
715-730	12	87	33	38	10	14	13	81	1	2	13	15
730-745	15	53	33	57	12	17	22	103	1	4	25	18
745-800	9	56	18	27	10	10	8	98	0	3	14	7
800-815	4	62	4	9	2	5	1	60	0	3	2	3
815-830	1	60	3	5	0	0	0	52	1	0	0	2
830-845	2	47	2	2	0	1	1	50	1	0	0	1
845-900	0	54	3	3	0	0	1	73	1	0	0	1
HOURLY TOTALS												
TIME	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-800	46	245	105	143	37	53	47	356	3	10	69	44
715-815	40	258	88	131	34	46	44	342	2	12	54	43
730-830	29	231	58	98	24	32	31	313	2	10	41	30
745-845	16	225	27	43	12	16	10	260	2	6	16	13
800-900	7	223	12	19	2	6	3	235	3	3	2	7

PEAK HOUR
700-800



4:00 PM TO 6:00 PM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-415	4	82	8	9	3	5	9	92	1	0	2	4
415-430	5	94	3	5	1	4	1	90	4	3	2	4
430-445	4	102	10	7	1	2	4	92	2	2	1	5
445-500	7	127	20	11	0	3	6	90	4	2	1	272
500-515	4	111	12	5	0	2	11	88	3	2	2	1
515-530	2	102	10	7	2	1	2	95	1	7	1	231
530-545	6	98	11	2	3	6	2	107	0	4	2	0
545-600	2	87	9	7	3	2	4	84	2	0	0	4
HOURLY TOTALS												
TIME	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-500	20	405	41	32	5	14	20	364	11	7	6	14
415-515	20	434	45	28	2	11	22	360	13	9	6	11
430-530	17	442	52	30	3	8	23	365	10	13	5	8
445-545	19	438	53	25	5	12	21	380	8	15	6	3
500-600	14	398	42	21	8	11	19	374	6	13	5	6

PEAK HOUR
445-545

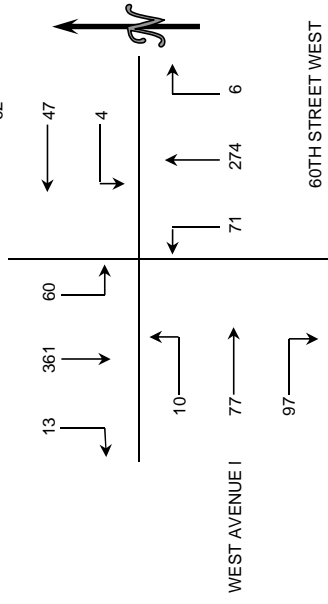


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 60TH STREET WEST
 E/W WEST AVENUE M-8
 CITY: QUARTZ HILL

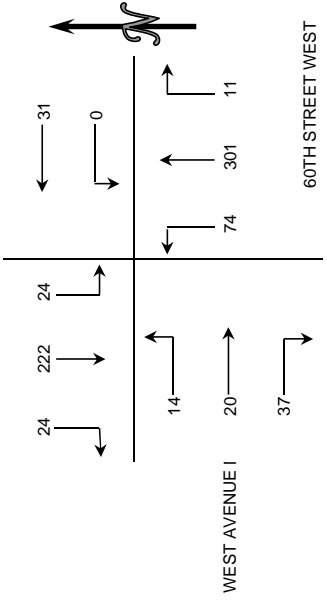
7:00 AM TO 9:00 AM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	2	94	8	23	16	0	1	70	30	27	15	1	287
715-730	2	110	27	25	13	1	1	67	13	29	24	2	314
730-745	3	86	20	12	10	1	4	77	14	28	27	4	286
745-800	6	71	5	2	8	2	0	60	14	13	11	3	195
800-815	1	44	8	3	4	3	3	30	6	10	8	2	122
815-830	0	34	6	2	1	2	2	26	4	9	10	4	100
830-845	1	53	2	1	6	0	2	22	9	13	8	4	121
845-900	2	33	2	3	1	1	2	27	5	5	5	3	89
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	13	361	60	62	47	4	6	274	71	97	77	10	1082
715-815	12	311	60	42	35	7	8	234	47	80	70	11	917
730-830	10	235	39	19	23	8	9	193	38	60	56	13	703
745-845	8	202	21	8	19	7	7	138	33	45	37	13	538
800-900	4	164	18	9	12	6	9	105	24	37	31	13	432

PEAK HOUR
700-800



4:00 PM TO 6:00 PM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	7	55	7	2	6	1	1	57	19	11	5	3	174
415-430	3	42	3	3	6	1	1	62	18	6	8	5	158
430-445	2	47	4	8	4	1	2	45	15	6	8	3	145
445-500	7	53	7	4	9	0	2	77	20	11	6	4	200
500-515	4	58	2	6	6	0	6	85	15	6	4	2	194
515-530	6	55	7	6	10	0	3	71	18	10	5	5	196
530-545	7	56	8	7	6	0	0	68	21	10	5	3	191
545-600	5	61	5	5	12	0	2	61	21	18	3	3	196
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-500	19	197	21	17	25	3	6	241	72	34	27	15	677
415-515	16	200	16	21	25	2	11	269	68	29	26	14	687
430-530	19	213	20	24	29	1	13	278	68	33	23	14	735
445-545	24	222	24	23	31	0	11	301	74	37	20	14	781
500-600	22	230	22	24	34	0	11	285	75	44	17	13	777

PEAK HOUR
445-545

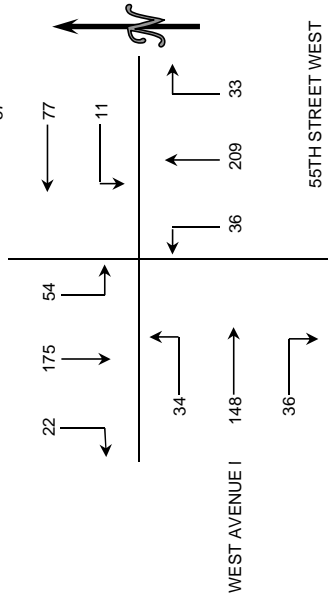


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: TUESDAY MAY 27, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 55TH STREET WEST
 E/W WEST AVENUE M-8
 CITY: QUARTZ HILL

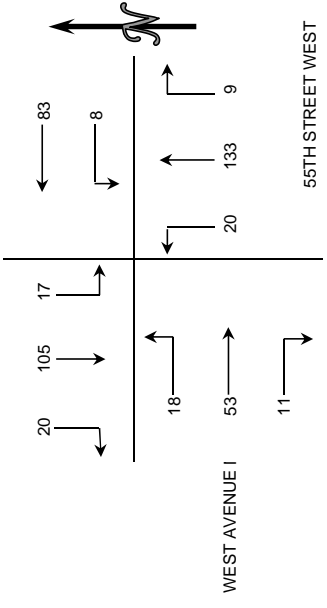
7:00 AM TO 9:00 AM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
TOTAL												
700-715	4	48	4	15	26	2	4	52	9	7	18	5
715-730	2	56	18	20	22	4	9	60	10	16	58	10
730-745	11	38	25	14	19	5	15	60	11	12	52	13
745-800	5	33	7	8	10	0	5	37	6	1	20	6
800-815	2	17	4	0	6	0	0	24	1	3	21	6
815-830	1	9	1	3	8	1	0	16	2	3	17	1
830-845	0	8	0	1	9	1	2	12	1	0	10	5
845-900	3	14	0	1	9	1	0	12	5	3	9	3
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-800	22	175	54	57	77	11	33	209	36	36	148	34
715-815	20	144	54	42	57	9	29	181	28	32	151	35
730-830	19	97	37	25	43	6	20	137	20	19	110	26
745-845	8	67	12	12	33	2	7	89	10	7	68	18
800-900	6	48	5	5	32	3	2	64	9	9	57	15

PEAK HOUR
700-800



4:30-5:30												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
TOTAL												
400-415	2	17	2	8	23	3	3	25	0	1	17	3
415-430	3	14	6	3	17	1	2	21	2	1	21	7
430-445	6	26	3	5	23	4	2	28	2	4	14	3
445-500	7	23	5	3	19	3	4	32	5	1	15	6
500-515	3	26	5	4	18	1	2	33	8	2	10	7
515-530	4	30	4	7	23	0	1	40	5	4	14	2
530-545	3	23	5	4	22	0	2	27	6	5	15	2
545-600	6	18	1	12	23	0	2	33	12	4	14	3
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-500	18	80	16	19	82	11	11	106	9	7	67	19
415-515	19	89	19	15	77	9	10	114	17	8	60	23
430-530	20	105	17	19	83	8	9	133	20	11	53	18
445-545	17	102	19	18	82	4	9	132	24	12	54	17
500-600	16	97	15	27	86	1	7	133	31	15	53	14

PEAK HOUR
430-530

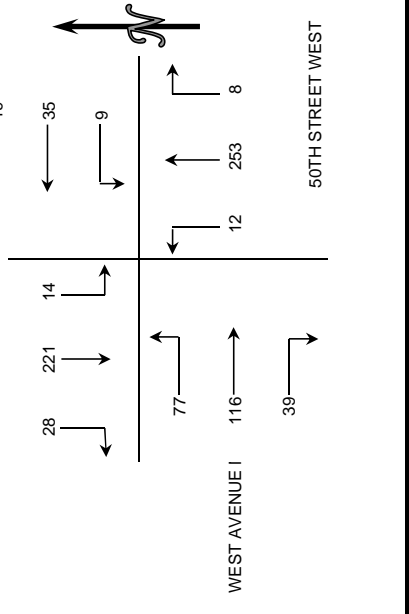


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 50TH STREET WEST
 E/W WEST AVENUE M-8
 CITY: QUARTZ HILL

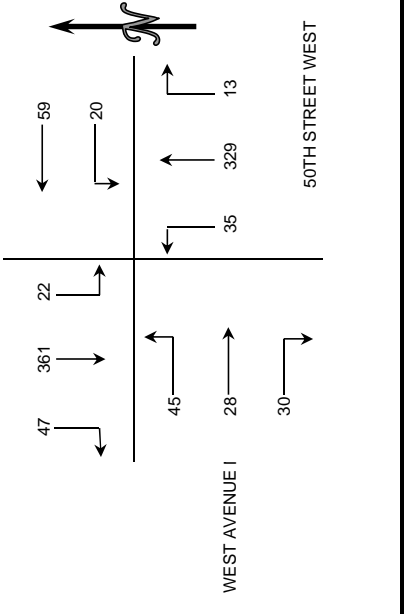
7:00 AM TO 9:00 AM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	4	50	0	6	7	2	1	46	1	11	28	12	168
7:15-7:30	8	74	2	3	9	3	5	58	1	10	28	20	221
7:30-7:45	10	51	7	6	7	0	1	70	7	10	34	33	236
7:45-8:00	6	46	5	4	12	4	1	79	3	8	26	12	206
8:00-8:15	6	47	4	4	5	2	3	49	6	8	14	6	154
8:15-8:30	4	46	2	4	11	1	1	66	6	0	10	8	159
8:30-8:45	6	46	1	1	8	0	1	40	11	2	11	11	138
8:45-9:00	4	43	2	4	6	3	3	42	5	3	9	13	137
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	28	221	14	19	35	9	8	253	12	39	116	77	831
7:15-8:15	30	218	18	17	33	9	10	256	17	36	102	71	817
7:30-8:30	26	190	18	18	35	7	6	264	22	26	84	59	755
7:45-8:45	22	185	12	13	36	7	6	234	26	18	61	37	657
8:00-9:00	20	182	9	13	30	6	8	197	28	13	44	38	588

PEAK HOUR
7:00-8:00



4:00 PM TO 6:00 PM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	12	98	4	6	8	4	4	95	7	7	11	14	270
4:15-4:30	13	85	4	2	13	1	2	70	6	8	7	8	219
4:30-4:45	11	77	8	4	16	0	2	88	11	1	10	6	234
4:45-5:00	8	96	9	10	18	2	3	94	10	6	5	10	271
5:00-5:15	13	104	5	6	16	6	2	79	14	8	12	12	277
5:15-5:30	10	88	3	4	10	3	2	81	4	9	5	10	229
5:30-5:45	16	73	5	8	15	9	6	75	7	7	6	13	240
5:45-6:00	9	82	5	6	12	3	2	96	8	7	8	13	251
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	44	356	25	22	55	7	11	347	34	22	33	38	994
4:15-5:15	45	362	26	22	63	9	9	331	41	23	34	36	1001
4:30-5:30	42	365	25	24	60	11	9	342	39	24	32	38	1011
4:45-5:45	47	361	22	28	59	20	13	329	35	30	28	45	1017
5:00-6:00	48	347	18	24	53	21	12	331	33	31	31	48	997

PEAK HOUR
4:45-5:45

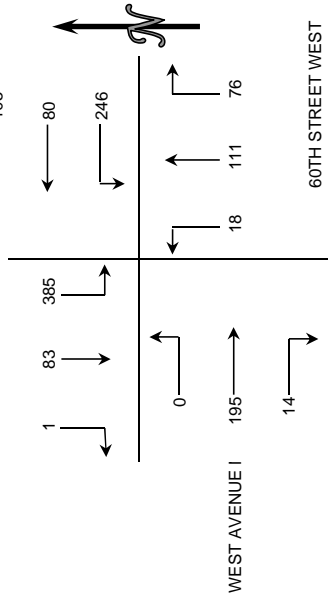


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 60TH STREET WEST
 E/W WEST AVENUE N
 CITY: QUARTZ HILL

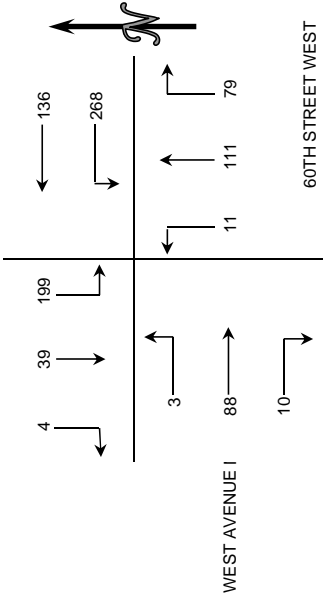
7:00 AM TO 9:00 AM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	14	86	27	21	71	17	25	6	4	43	0	314
715-730	0	22	124	32	17	67	20	29	5	3	70	0	389
730-745	1	30	94	30	28	59	17	36	4	5	55	0	359
745-800	0	17	81	16	14	49	22	21	3	2	27	0	252
800-815	0	17	43	11	13	28	11	18	0	4	18	1	164
815-830	0	11	40	21	14	15	8	5	0	1	21	0	136
830-845	0	10	57	9	5	28	2	13	0	2	16	0	142
845-900	0	8	28	6	10	26	17	9	0	0	13	1	118
HOURLY TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
700-800	1	83	385	105	80	246	76	111	18	14	195	0	1314
715-815	1	86	342	89	72	203	70	104	12	14	170	1	1164
730-830	1	75	258	78	69	151	58	80	7	12	121	1	911
745-845	0	55	221	57	46	120	43	57	3	9	82	1	694
800-900	0	46	168	47	42	97	38	45	0	7	68	2	560

PEAK HOUR	700-800
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4:00 PM TO 6:00 PM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	0	13	45	26	23	52	20	21	4	0	27	3	234
415-430	1	15	31	25	36	57	21	22	6	0	33	0	247
430-445	1	9	37	25	29	55	18	21	0	0	35	1	231
445-500	0	11	46	19	29	69	17	29	4	4	25	1	254
500-515	3	11	54	23	39	71	16	40	3	4	27	1	292
515-530	1	9	43	23	33	66	27	26	3	0	15	1	247
530-545	0	8	56	20	35	62	19	16	1	2	21	0	240
545-600	0	17	55	14	34	68	24	17	4	2	16	0	251
HOURLY TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
400-500	2	48	159	95	117	233	76	93	14	4	120	5	966
415-515	5	46	168	92	133	252	72	112	13	8	120	3	1024
430-530	5	40	180	90	130	261	78	116	10	8	102	4	1024
445-545	4	39	199	85	136	268	79	111	11	10	88	3	1033
500-600	4	45	208	80	141	267	86	99	11	8	79	2	1030

PEAK HOUR	445-545
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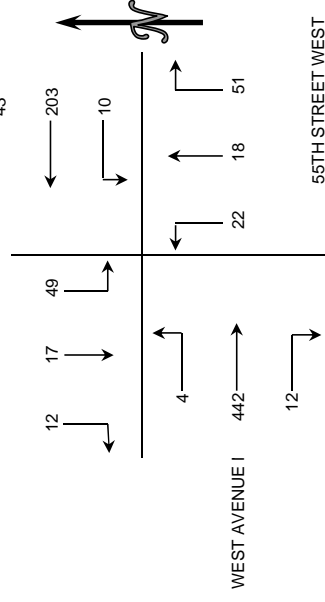


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 55TH STREET WEST
 E/W WEST AVENUE N
 CITY: QUARTZ HILL

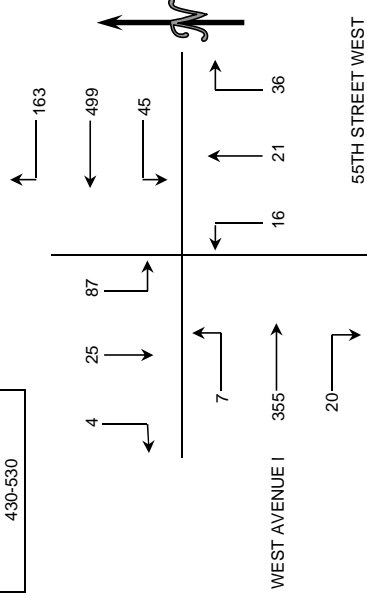
7:00 AM TO 9:00 AM													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	4	5	10	9	57	3	18	8	2	5	122	2	245
715-730	3	8	9	10	56	3	9	3	1	1	128	1	232
730-745	0	2	10	9	47	2	11	1	3	2	101	0	188
745-800	5	2	20	15	43	2	13	6	16	4	91	1	218
800-815	5	9	14	15	43	7	17	7	6	10	89	2	224
815-830	2	7	10	11	53	3	14	5	2	3	77	0	187
830-845	1	1	10	7	40	3	10	2	3	1	54	1	133
845-900	4	5	13	13	51	0	15	3	7	3	60	1	175
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
700-800	12	17	49	43	203	10	51	18	22	12	442	4	883
715-815	13	21	53	49	189	14	50	17	26	17	409	4	862
730-830	12	20	54	50	186	14	55	19	27	19	358	3	817
745-845	13	19	54	48	179	15	54	20	27	18	311	4	762
800-900	12	22	47	46	187	13	56	17	18	17	280	4	719

PEAK HOUR	700-800
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4:30-5:30													
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	
	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	9	2	19	27	123	11	7	8	8	5	85	2	306
415-430	2	1	23	29	120	14	12	9	6	5	89	6	316
430-445	0	6	23	35	121	11	11	9	5	5	95	2	323
445-500	0	4	15	42	115	11	5	7	5	5	96	1	306
500-515	1	8	29	47	126	11	12	4	3	3	73	1	318
515-530	3	7	20	39	137	12	8	1	3	7	91	3	331
530-545	1	7	27	28	130	9	8	3	4	5	84	0	306
545-600	3	2	23	34	120	7	14	3	5	5	99	3	318
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
400-500	11	13	80	133	479	47	35	33	24	20	365	11	1251
415-515	3	19	90	153	482	47	40	29	19	18	353	10	1263
430-530	4	25	87	163	499	45	36	21	20	20	355	7	1278
445-545	5	26	91	156	508	43	33	15	15	20	344	5	1261
500-600	8	24	99	148	513	39	42	11	15	20	347	7	1273

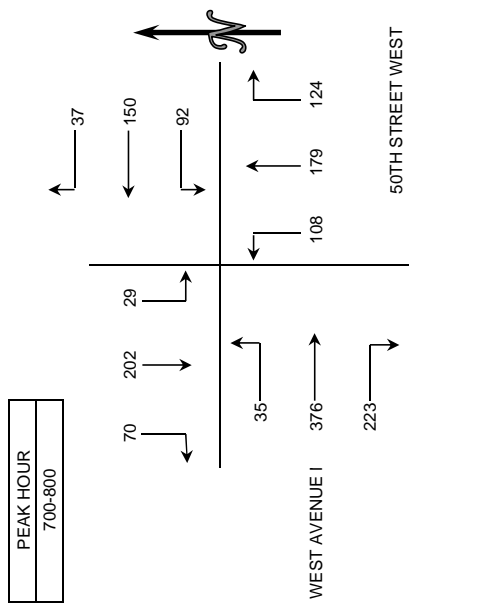
PEAK HOUR	430-530
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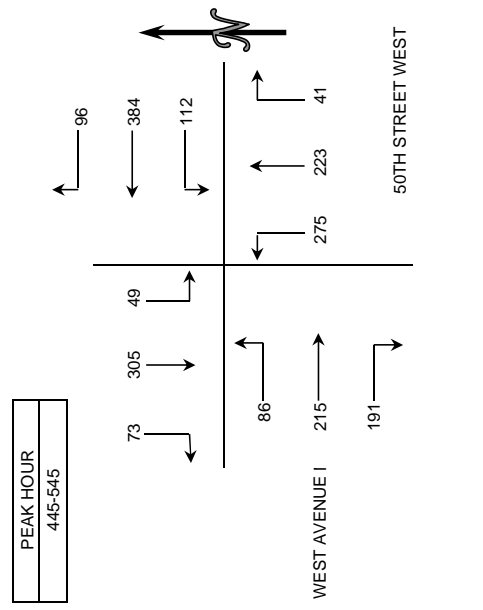
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: THURSDAY MAY 29, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 50TH STREET WEST
 E/W WEST AVENUE N
 CITY: QUARTZ HILL

7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	12	52	4	3	34	17	13	30	28	51	87	4	335
7:15-7:30	29	64	15	12	35	35	43	41	29	48	98	10	459
7:30-7:45	19	55	6	9	55	20	44	61	28	81	119	12	509
7:45-8:00	10	31	4	13	26	20	24	47	23	43	72	9	322
8:00-8:15	20	39	5	9	46	9	22	24	14	35	70	14	307
8:15-8:30	14	33	5	8	34	5	19	43	27	43	51	10	292
8:30-8:45	14	42	3	7	34	6	16	31	28	34	66	11	292
8:45-9:00	12	37	5	9	56	11	21	32	34	49	75	11	352
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	70	202	29	37	150	92	124	179	108	223	376	35	1623
7:15-8:15	78	189	30	43	162	84	133	173	94	207	359	45	1597
7:30-8:30	63	158	20	39	161	54	109	175	92	202	312	45	1430
7:45-8:45	58	145	17	37	140	40	81	145	92	155	259	44	1213
8:00-9:00	60	151	18	33	170	31	78	130	103	161	262	46	1243



4:00 PM TO 6:00 PM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	19	70	12	17	93	20	9	74	44	41	54	23	476
4:15-4:30	17	62	13	21	78	25	13	30	44	42	42	26	413
4:30-4:45	11	57	12	22	92	29	11	52	48	62	44	27	467
4:45-5:00	13	78	7	21	88	20	10	58	62	33	55	19	464
5:00-5:15	18	82	17	17	90	27	13	68	71	58	55	19	535
5:15-5:30	21	73	15	19	112	21	8	45	68	49	51	23	505
5:30-5:45	21	72	10	39	94	44	10	52	74	51	54	25	546
5:45-6:00	20	54	8	12	77	26	13	53	51	54	53	15	436
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	60	267	44	81	351	94	43	214	198	178	195	95	1820
4:15-5:15	59	279	49	81	348	101	47	208	225	195	196	91	1879
4:30-5:30	63	290	51	79	382	97	42	223	249	202	205	88	1971
4:45-5:45	73	305	49	96	384	112	41	223	275	191	215	86	2050
5:00-6:00	80	281	50	87	373	118	44	218	264	212	213	82	2022

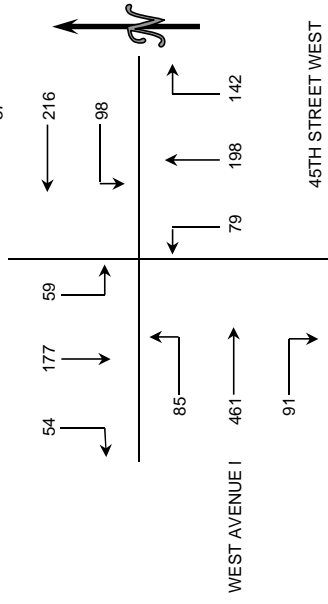


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 45TH STREET WEST
 E/W WEST AVENUE N
 CITY: QUARTZ HILL

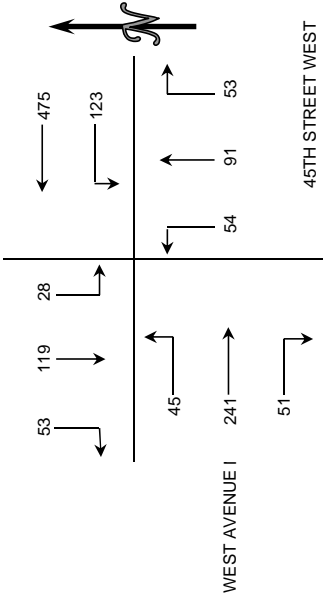
7:00 AM TO 9:00 AM																										
PERIOD	1		2		3		4		5		6		7		8		9		10		11		12		TOTAL	
	SBRT	SBTH	SBTH	SBTH	SBLT	WBRT	WBRT	WBTH	WBTH	WBTH	WBTH	NBRT	NBRT	NBTH	NBTH	NBTH	NBLT	NBLT	EBRT	EBRT	EBTH	EBTH	EBLT	EBLT		
7:00-7:15	4	22	8	42	13	26	41	22	15	94	304															
7:15-7:30	17	55	13	67	24	34	44	15	27	119	443															
7:30-7:45	11	71	20	57	43	53	53	20	37	134	544															
7:45-8:00	22	29	15	50	18	29	60	22	12	114	406															
8:00-8:15	7	19	11	34	7	22	17	11	11	95	250															
8:15-8:30	2	11	4	42	7	19	17	4	9	90	218															
8:30-8:45	4	6	8	39	10	16	14	1	5	74	184															
8:45-9:00	4	7	12	45	8	19	16	5	7	81	212															
HOUR TOTALS																										
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL													
7:00-8:00	54	177	59	37	216	98	142	198	79	91	461	85	1687													
7:15-8:15	57	174	59	34	208	92	138	174	68	87	462	90	1643													
7:30-8:30	42	130	57	26	183	75	123	147	57	69	433	76	1418													
7:45-8:45	35	65	45	21	165	42	86	108	38	37	373	43	1058													
8:00-9:00	17	43	42	20	160	32	76	64	21	32	340	17	864													

PEAK HOUR
7:00-8:00



4:00 PM TO 6:00 PM																										
PERIOD	1		2		3		4		5		6		7		8		9		10		11		12		TOTAL	
	SBRT	SBTH	SBTH	SBTH	SBLT	WBRT	WBRT	WBTH	WBTH	WBTH	WBTH	NBRT	NBRT	NBTH	NBTH	NBTH	NBLT	NBLT	EBRT	EBRT	EBTH	EBTH	EBLT	EBLT		
4:00-4:15	12	21	6	96	19	10	21	10	11	45	275															
4:15-4:30	9	23	8	119	14	5	18	8	14	80	313															
4:30-4:45	6	24	9	103	18	14	24	12	11	61	300															
4:45-5:00	13	36	6	117	28	13	22	12	16	56	342															
5:00-5:15	10	29	7	106	24	15	28	16	13	63	336															
5:15-5:30	13	27	6	138	39	13	23	8	10	64	370															
5:30-5:45	17	27	9	114	32	12	18	18	12	58	348															
5:45-6:00	15	24	4	111	22	11	19	9	9	55	297															
HOUR TOTALS																										
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL													
4:00-5:00	40	104	29	56	435	79	42	85	42	242	1230															
4:15-5:15	38	112	30	48	445	84	47	92	48	260	1291															
4:30-5:30	42	116	28	56	464	109	55	97	48	50	1348															
4:45-5:45	53	119	28	63	475	123	53	91	54	241	1396															
5:00-6:00	55	107	26	54	469	117	51	88	51	240	1351															

PEAK HOUR
4:45-5:45

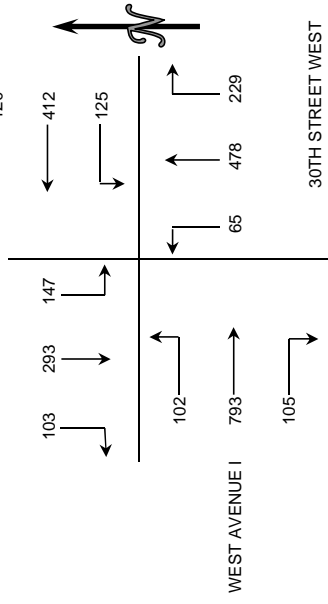


INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 30TH STREET WEST
 E/W WEST AVENUE L
 CITY: QUARTZ HILL

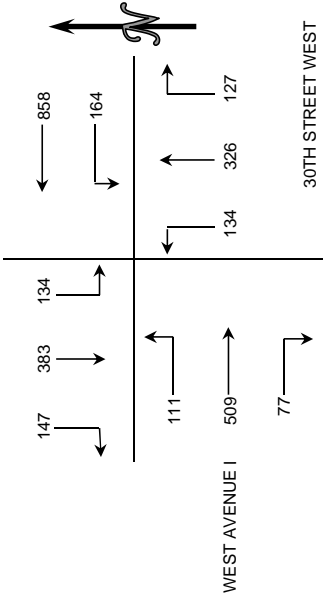
7:00 AM TO 9:00 AM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
7:00-7:15	20	76	37	7	115	15	26	59	13	18	142	15	543
7:15-7:30	31	70	29	17	122	30	56	112	15	32	194	17	725
7:30-7:45	29	88	42	35	117	46	69	144	16	31	204	35	856
7:45-8:00	20	79	42	40	103	35	71	127	23	20	219	25	804
8:00-8:15	23	56	34	28	70	14	33	95	11	22	176	25	587
8:15-8:30	23	70	31	19	83	12	34	82	19	9	150	21	553
8:30-8:45	23	69	23	10	87	14	21	58	9	9	131	15	469
8:45-9:00	17	42	25	17	80	21	36	63	16	15	144	16	492
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
7:00-8:00	100	313	150	99	457	126	222	442	67	101	759	92	2928
7:15-8:15	103	293	147	120	412	125	229	478	65	105	793	102	2972
7:30-8:30	95	293	149	122	373	107	207	448	69	82	749	106	2800
7:45-8:45	89	274	130	97	343	75	159	362	62	60	676	86	2413
8:00-9:00	86	237	113	74	320	61	124	298	55	55	601	77	2101

PEAK HOUR
7:15-8:15



4:00 PM TO 6:00 PM													
15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBTL	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
4:00-4:15	43	90	31	31	204	34	32	83	26	18	157	26	775
4:15-4:30	32	83	37	26	176	43	26	100	23	16	145	31	738
4:30-4:45	43	95	37	27	186	43	30	72	28	21	143	31	756
4:45-5:00	45	93	38	45	200	40	35	83	29	16	139	25	788
5:00-5:15	42	108	41	33	210	44	27	78	43	20	131	26	803
5:15-5:30	30	103	34	44	224	40	34	66	31	23	116	30	775
5:30-5:45	30	79	21	34	224	40	31	99	31	18	123	30	760
5:45-6:00	38	81	27	34	202	38	30	112	24	18	129	22	755
HOUR TOTALS													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
4:00-5:00	163	361	143	129	766	160	123	338	106	71	584	113	3057
4:15-5:15	162	379	153	131	772	170	118	333	123	73	558	113	3085
4:30-5:30	160	399	150	149	820	167	126	299	131	80	529	112	3122
4:45-5:45	147	383	134	156	858	164	127	326	134	77	509	111	3126
5:00-6:00	140	371	123	145	860	162	122	355	129	79	499	108	3093

PEAK HOUR
4:45-5:45



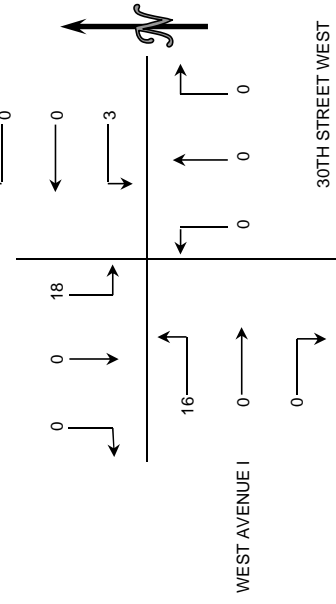
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

UTURNS

CLIENT: INTUEOR CONSULTING, INC.
 PROJECT: QUARTZ HILL TRAFFIC COUNTS
 DATE: WEDNESDAY MAY 28, 2014
 PERIOD: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
 INTERSECTION: N/S 30TH STREET WEST
 E/W WEST AVENUE L
 CITY: QUARTZ HILL

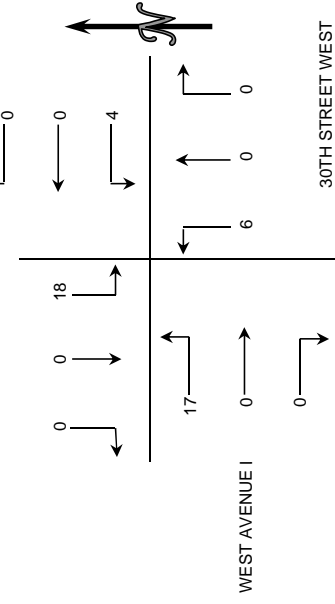
7:00 AM TO 9:00 AM												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
TOTAL												
700-715	0	0	3	0	0	0	0	0	0	0	0	3
715-730	0	0	2	0	0	0	0	0	0	0	0	4
730-745	0	0	5	0	0	0	0	0	0	0	0	11
745-800	0	0	4	0	2	0	0	0	0	0	0	3
800-815	0	0	3	0	0	0	0	0	0	0	0	7
815-830	0	0	6	0	0	1	0	0	0	0	0	0
830-845	0	0	4	0	0	1	0	0	0	0	0	3
845-900	0	0	0	0	0	0	0	0	2	0	0	4
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
700-800	0	0	14	0	0	2	0	0	0	0	0	16
715-815	0	0	14	0	0	2	0	0	0	0	0	20
730-830	0	0	18	0	0	3	0	0	0	0	0	16
745-845	0	0	17	0	0	4	0	0	0	0	0	13
800-900	0	0	13	0	0	2	0	0	2	0	0	14

PEAK HOUR	730-830
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4:15-5:15												
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12
	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
TOTAL												
400-415	0	0	2	0	0	3	0	0	0	0	0	4
415-430	0	0	4	0	0	0	0	0	1	0	0	6
430-445	0	0	2	0	0	0	0	0	1	0	0	6
445-500	0	0	6	0	0	3	0	0	3	0	0	3
500-515	0	0	6	0	0	1	0	0	1	0	0	2
515-530	0	0	2	0	0	0	0	0	0	0	0	1
530-545	0	0	4	0	0	0	0	0	5	0	0	3
545-600	0	0	4	0	0	0	0	0	0	0	0	2
HOURLY TOTALS	1	2	3	4	5	6	7	8	9	10	11	12
TIME	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT
400-500	0	0	14	0	0	6	0	0	5	0	0	19
415-515	0	0	18	0	0	4	0	0	6	0	0	17
430-530	0	0	16	0	0	4	0	0	5	0	0	12
445-545	0	0	18	0	0	4	0	0	9	0	0	9
500-600	0	0	16	0	0	1	0	0	6	0	0	8

PEAK HOUR	415-515
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Appendix B
Existing Without Project ICU Output

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 1										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			ADJ V/C	ADJ V/C
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	0.33	528	91			49				
NBT	0.33	528	80	233	0.15	81	158	0.10		
NBR	0.33	528	53			23				
SBL	0.5	800	16			11				
SBT	0.5	800	100	198	0.12	81	114	0.07		
SBR	1	1600	80		0.05	21		0.01		
EBL	1	1600	72		0.05	12		0.01		
EBT	0.5	800	312	423	0.26	77	108	0.07		
EBR	0.5	800	111			31				
WBL	0.33	528	20			28				
WBT	0.33	528	263	321	0.20	96	142	0.09		
WBR	0.33	528	18			15				
		N/S Movements			0.15			0.10		
		E/W Movements			0.26			0.10		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.510			0.296		
LEVEL OF SERVICE (LOS)					A			A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 2										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			ADJ V/C	ADJ V/C
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	81		0.05	74		0.05		
NBT	1	1600	304		0.19	302		0.19		
NBR	1	1600	77		0.05	56		0.04		
SBL	1	1600	16		0.01	15		0.01		
SBT	1	1600	251		0.16	352		0.22		
SBR	1	1600	39		0.02	36		0.02		
EBL	1	1600	41		0.03	17		0.01		
EBT	0.5	800	186	256	0.16	57	105	0.07		
EBR	0.5	800	70			48				
WBL	1	1600	61		0.04	67		0.04		
WBT	0.5	800	114	125	0.08	67	81	0.05		
WBR	0.5	800	11			14				
		N/S Movements				0.21			0.27	
		E/W Movements				0.20			0.11	
		Rt. Turn Component				0.00			0.00	
		Yellow Clearance				0.10			0.10	
TOTAL CAPACITY UTILIZATION						0.506		0.474		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 3										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	0.33	528	27			49				
NBT	0.33	528	344	428	0.27	228	355	0.22		
NBR	0.33	528	30			29				
SBL	1	1600	133		0.08	47		0.03		
SBT	0.5	800	372	385	0.24	247	280	0.18		
SBR	0.5	800	13			33				
EBL	0.33	528	34			22				
EBT	0.33	528	182	300	0.19	116	192	0.12		
EBR	0.33	528	50			32				
WBL	1	1600	33		0.02	19		0.01		
WBT	1	1600	65		0.04	144		0.09		
WBR	1	1600	189		0.12	71		0.04		
		N/S Movements				0.35			0.25	
		E/W Movements				0.21			0.13	
		Rt. Turn Component				0.00			0.00	
		Yellow Clearance				0.10			0.10	
TOTAL CAPACITY UTILIZATION				0.660			0.483			
LEVEL OF SERVICE (LOS)				B			A			
						ICU		LOS		
						0.10	-	0.60	A	
						0.61	-	0.70	B	
						0.71	-	0.80	C	
						0.81	-	0.90	D	
						0.91	-	1.00	E	
						1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 4										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	65		0.04	22			0.01	
NBT	0.5	800	238	280	0.18	113	134		0.08	
NBR	0.5	800	42			21				
SBL	1	1600	102		0.06	16			0.01	
SBT	1	1600	186		0.12	104			0.07	
SBR	1	1600	16		0.01	19			0.01	
EBL	1	1600	35		0.02	19			0.01	
EBT	0.5	800	302	353	0.22	196	211		0.13	
EBR	0.5	800	51			15				
WBL	1	1600	33		0.02	42			0.03	
WBT	1	1600	200		0.13	235			0.15	
WBR	1	1600	70		0.04	43			0.03	
		N/S Movements			0.24				0.09	
		E/W Movements			0.24				0.16	
		Rt. Turn Component			0.00				0.00	
		Yellow Clearance			0.10				0.10	
TOTAL CAPACITY UTILIZATION					0.580				0.352	
LEVEL OF SERVICE (LOS)					A				A	
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 5										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	109		0.07	82		0.05		
NBT	1	1600	388		0.24	277		0.17		
NBR	1	1600	95		0.06	44		0.03		
SBL	1	1600	73		0.05	56		0.04		
SBT	1	1600	297		0.19	343		0.21		
SBR	1	1600	44		0.03	80		0.05		
EBL	1	1600	53		0.03	62		0.04		
EBT	1	1600	256		0.16	118		0.07		
EBR	1	1600	139		0.09	84		0.05		
WBL	1	1600	44		0.03	62		0.04		
WBT	1	1600	130		0.08	178		0.11		
WBR	1	1600	54		0.03	99		0.06		
		N/S Movements				0.29			0.27	
		E/W Movements				0.19			0.15	
		Rt. Turn Component				0.00			0.00	
		Yellow Clearance				0.10			0.10	
TOTAL CAPACITY UTILIZATION						0.576		0.516		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 6										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	33		0.02	29		0.02		
NBT	0.5	800	404	461	0.29	325	362	0.23		
NBR	0.5	800	57			37				
SBL	1	1600	193		0.12	90		0.06		
SBT	1.5	2400	268	178	0.11	389	225	0.14		
SBR	0.5	800	88			61				
EBL	1	1600	159		0.10	50		0.03		
EBT	1	1600	472		0.30	244		0.15		
EBR	1	1600	7		0.00	22		0.01		
WBL	1	1600	22		0.01	96		0.06		
WBT	1	1600	213		0.13	401		0.25		
WBR	1	1600	113		0.07	93		0.06		
		N/S Movements			0.41			0.28		
		E/W Movements			0.31			0.28		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.817			0.664		
LEVEL OF SERVICE (LOS)					D			B		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions Without Project									
INTERSECTION: 7									
Analysis Date: 9/17/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	3		0.00	8		0.01	
NBT	1	1600	356		0.22	380		0.24	
NBR	1	1600	47		0.03	21		0.01	
SBL	1	1600	105		0.07	53		0.03	
SBT	1	1600	245		0.15	438		0.27	
SBR	1	1600	46		0.03	19		0.01	
EBL	0.33	528	44			3			
EBT	0.33	528	69	127	0.08	6	24	0.02	
EBR	0.33	528	10			15			
WBL	0.33	528	53			12			
WBT	0.33	528	37	238	0.15	5	43	0.03	
WBR	0.33	528	143			25			
		N/S Movements			0.29			0.28	
		E/W Movements			0.149			0.03	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					0.537			0.406	
LEVEL OF SERVICE (LOS)					A			A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 8										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			ADJ V/C	ADJ V/C
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	71		0.04	74		0.05		
NBT	1.5	2400	274	140	0.09	301	156	0.10		
NBR	0.5	800	6			11				
SBL	1	1600	60		0.04	24		0.02		
SBT	0.5	800	361	374	0.23	222	246	0.15		
SBR	0.5	800	13			24				
EBL	0.33	528	10			14				
EBT	0.33	528	77	185	0.12	20	72	0.05		
EBR	0.33	528	97			37				
WBL	0.5	800	4			0				
WBT	0.5	800	47	51	0.03	31	31	0.02		
WBR	1	1600	62		0.04	23		0.01		
		N/S Movements				0.28		0.20		
		E/W Movements				0.12		0.05		
		Rt. Turn Component				0.00		0.00		
		Yellow Clearance				0.10		0.10		
TOTAL CAPACITY UTILIZATION						0.494		0.345		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
						0.10	-	0.60	A	
						0.61	-	0.70	B	
						0.71	-	0.80	C	
						0.81	-	0.90	D	
						0.91	-	1.00	E	
						1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 9										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	36		0.02	20		0.01		
NBT	1	1600	209		0.13	133		0.08		
NBR	1	1600	33		0.02	9		0.01		
SBL	1	1600	54		0.03	17		0.01		
SBT	0.5	800	175	197	0.12	105	125	0.08		
SBR	0.5	800	22			20				
EBL	1	1600	34		0.02	18		0.01		
EBT	0.5	800	148	184	0.12	53	64	0.04		
EBR	0.5	800	36			11				
WBL	1	1600	11		0.01	8		0.01		
WBT	0.5	800	77	134	0.08	83	102	0.06		
WBR	0.5	800	57			19				
		N/S Movements			0.16			0.09		
		E/W Movements			0.12			0.08		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.386			0.269		
LEVEL OF SERVICE (LOS)					A			A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions Without Project									
INTERSECTION: 10									
Analysis Date: 9/17/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	12		0.01	35		0.02	
NBT	0.5	800	253	261	0.16	329	342	0.21	
NBR	0.5	800	8			13			
SBL	1	1600	14		0.01	22		0.01	
SBT	0.5	800	221	249	0.16	361	408	0.26	
SBR	0.5	800	28			47			
EBL	1	1600	77		0.05	45		0.03	
EBT	1	1600	116		0.07	28		0.02	
EBR	1	1600	39			30			
WBL	1	1600	9		0.01	20		0.01	
WBT	0.5	800	35	54	0.03	59	87	0.05	
WBR	0.5	800	19			28			
		N/S Movements				0.17		0.28	
		E/W Movements				0.08		0.08	
		Rt. Turn Component				0.00		0.00	
		Yellow Clearance				0.10		0.10	
TOTAL CAPACITY UTILIZATION						0.354		0.459	
LEVEL OF SERVICE (LOS)						A		A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 11										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			ADJ V/C	ADJ V/C
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	18		0.01	11		0.01		
NBT	1	1600	111		0.07	111		0.07		
NBR	1	1600	76		0.05	79		0.05		
SBL	1	1600	385		0.24	199		0.12		
SBT	0.5	800	83	84	0.05	39	43	0.03		
SBR	0.5	800	1			4				
EBL	0.33	528	0			3				
EBT	0.33	528	195	209	0.13	88	104	0.07		
EBR	0.33	528	14			10				
WBL	0.5	800	246			268				
WBT	0.5	800	80	572	0.36	136	431	0.27		
WBR	1	1600	105			85				
		N/S Movements			0.31			0.19		
		E/W Movements			0.36			0.27		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.768				0.563	
LEVEL OF SERVICE (LOS)					C				A	
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 12										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	22		0.01	16		0.01		
NBT	0.5	800	18	69	0.04	21	57	0.04		
NBR	0.5	800	51			36				
SBL	1	1600	49		0.03	87		0.05		
SBT	1	1600	17		0.01	25		0.02		
SBR	1	1600	12		0.01	4		0.00		
EBL	1	1600	4		0.00	7		0.00		
EBT	1.5	2400	442	227	0.14	355	188	0.12		
EBR	0.5	800	12			20				
WBL	1	1600	10		0.01	45		0.03		
WBT	2	3200	203		0.06	499		0.16		
WBR	1	1600	43		0.03	163		0.10		
		N/S Movements				0.07		0.09		
		E/W Movements				0.15		0.16		
		Rt. Turn Component				0.00		0.00		
		Yellow Clearance				0.10		0.10		
TOTAL CAPACITY UTILIZATION						0.322		0.351		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions Without Project										
INTERSECTION: 13										
Analysis Date: 9/17/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	108		0.07	275		0.17		
NBT	1	1600	179		0.11	223		0.14		
NBR	1	1600	124		0.08	41		0.03		
SBL	1	1600	29		0.02	49		0.03		
SBT	2	3200	202		0.06	305		0.10		
SBR	1	1600	70		0.04	73		0.05		
EBL	1	1600	35		0.02	86		0.05		
EBT	2	3200	376		0.12	215		0.07		
EBR	1	1600	223		0.14	191		0.12		
WBL	1	1600	92		0.06	112		0.07		
WBT	1.5	2400	150	94	0.06	384	240	0.15		
WBR	0.5	800	37			96				
		N/S Movements			0.13			0.27		
		E/W Movements			0.18			0.20		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.405			0.571		
LEVEL OF SERVICE (LOS)					A			A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions Without Project									
INTERSECTION: 14									
Analysis Date: 9/17/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	79		0.05	54		0.03	
NBT	1	1600	198		0.12	91		0.06	
NBR	1	1600	142		0.09	53		0.03	
SBL	1	1600	59		0.04	28		0.02	
SBT	1	1600	177		0.11	119		0.07	
SBR	1	1600	54		0.03	53		0.03	
EBL	1	1600	85		0.05	45		0.03	
EBT	1	1600	461		0.29	241		0.15	
EBR	1	1600	91		0.06	51		0.03	
WBL	1	1600	98		0.06	123		0.08	
WBT	1	1600	216		0.14	475		0.30	
WBR	1	1600	37		0.02	63		0.04	
		N/S Movements				0.16		0.11	
		E/W Movements				0.35		0.33	
		Rt. Turn Component				0.00		0.00	
		Yellow Clearance				0.10		0.10	
TOTAL CAPACITY UTILIZATION						0.610		0.533	
LEVEL OF SERVICE (LOS)						B		A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions Without Project									
INTERSECTION: 15									
Analysis Date: 9/17/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	65		0.04	143		0.09	
NBT	0.5	800	478	707	0.44	326	453	0.28	
NBR	0.5	800	229			127			
SBL	1	1600	161		0.10	152		0.10	
SBT	0.5	800	293	396	0.25	383	530	0.33	
SBR	0.5	800	103			147			
EBL	1	1600	122		0.08	120		0.08	
EBT	0.5	800	793	898	0.56	509	586	0.37	
EBR	0.5	800	105			77			
WBL	1	1600	127		0.08	168		0.11	
WBT	0.5	800	412	532	0.33	858	1014	0.63	
WBR	0.5	800	120			156			
		N/S Movements			0.54			0.42	
		E/W Movements			0.64			0.71	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					1.283			1.229	
LEVEL OF SERVICE (LOS)					F			F	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

Appendix C
Existing With Project ICU Output

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions With Project										
INTERSECTION: 1										
Analysis Date: 9/25/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	0.33	528	91			49				
NBT	0.33	528	80	233	0.15	86	163	0.10		
NBR	0.33	528	53			23				
SBL	0.5	800	16			11				
SBT	0.5	800	101	199	0.12	86	119	0.07		
SBR	1	1600	80		0.05	21		0.01		
EBL	1	1600	72		0.05	12		0.01		
EBT	0.5	800	312	423	0.26	77	108	0.07		
EBR	0.5	800	111			31				
WBL	0.33	528	20			28				
WBT	0.33	528	263	321	0.20	96	142	0.09		
WBR	0.33	528	18			15				
		N/S Movements			0.15			0.10		
		E/W Movements			0.26			0.10		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.510			0.299		
LEVEL OF SERVICE (LOS)					A			A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions With Project										
INTERSECTION: 2										
Analysis Date: 9/25/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	81		0.05	74		0.05		
NBT	1	1600	305		0.19	312		0.20		
NBR	1	1600	77		0.05	56		0.04		
SBL	1	1600	16		0.01	15		0.01		
SBT	1	1600	253		0.16	361		0.23		
SBR	1	1600	39		0.02	36		0.02		
EBL	1	1600	41		0.03	17		0.01		
EBT	0.5	800	186	256	0.16	57	105	0.07		
EBR	0.5	800	70			48				
WBL	1	1600	61		0.04	67		0.04		
WBT	0.5	800	114	125	0.08	67	81	0.05		
WBR	0.5	800	11			14				
		N/S Movements				0.21			0.27	
		E/W Movements				0.20			0.11	
		Rt. Turn Component				0.00			0.00	
		Yellow Clearance				0.10			0.10	
TOTAL CAPACITY UTILIZATION						0.507		0.480		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 3									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	VOLUME
NBL	0.33	528	27			49			
NBT	0.33	528	344	428	0.27	228	355	0.22	
NBR	0.33	528	30			29			
SBL	1	1600	133		0.08	47		0.03	
SBT	0.5	800	372	385	0.24	247	280	0.18	
SBR	0.5	800	13			33			
EBL	0.33	528	34			22			
EBT	0.33	528	183	301	0.19	120	196	0.12	
EBR	0.33	528	50			32			
WBL	1	1600	33		0.02	19		0.01	
WBT	1	1600	65		0.04	149		0.09	
WBR	1	1600	189		0.12	71		0.04	
		N/S Movements				0.35			0.25
		E/W Movements				0.21			0.13
		Rt. Turn Component				0.00			0.00
		Yellow Clearance				0.10			0.10
TOTAL CAPACITY UTILIZATION				0.660			0.486		
LEVEL OF SERVICE (LOS)				B			A		
					ICU		LOS		
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 4									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	V/C
NBL	1	1600	65		0.04	22			0.01
NBT	0.5	800	238	280	0.18	113	134		0.08
NBR	0.5	800	42			21			
SBL	1	1600	103		0.06	20			0.01
SBT	1	1600	186		0.12	104			0.07
SBR	1	1600	16		0.01	19			0.01
EBL	1	1600	35		0.02	19			0.01
EBT	0.5	800	303	354	0.22	200	215		0.13
EBR	0.5	800	51			15			
WBL	1	1600	33		0.02	42			0.03
WBT	1	1600	200		0.13	240			0.15
WBR	1	1600	70		0.04	48			0.03
		N/S Movements				0.24			0.10
		E/W Movements				0.24			0.16
		Rt. Turn Component				0.00			0.00
		Yellow Clearance				0.10			0.10
TOTAL CAPACITY UTILIZATION					0.581				0.357
LEVEL OF SERVICE (LOS)					A				A
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions With Project										
INTERSECTION: 5										
Analysis Date: 9/25/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	110		0.07	92		0.06		
NBT	1	1600	389		0.24	287		0.18		
NBR	1	1600	95		0.06	46		0.03		
SBL	1	1600	73		0.05	56		0.04		
SBT	1	1600	299		0.19	352		0.22		
SBR	1	1600	44		0.03	80		0.05		
EBL	1	1600	53		0.03	62		0.04		
EBT	1	1600	256		0.16	118		0.07		
EBR	1	1600	141		0.09	93		0.06		
WBL	1	1600	44		0.03	64		0.04		
WBT	1	1600	130		0.08	178		0.11		
WBR	1	1600	54		0.03	99		0.06		
		N/S Movements				0.29			0.28	
		E/W Movements				0.19			0.15	
		Rt. Turn Component				0.00			0.00	
		Yellow Clearance				0.10			0.10	
TOTAL CAPACITY UTILIZATION						0.576		0.528		
LEVEL OF SERVICE (LOS)						A		A		
						ICU		LOS		
						0.10	-	0.60	A	
						0.61	-	0.70	B	
						0.71	-	0.80	C	
						0.81	-	0.90	D	
						0.91	-	1.00	E	
						1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions With Project										
INTERSECTION: 6										
Analysis Date: 9/25/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	33		0.02	29		0.02		
NBT	0.5	800	404	461	0.29	325	362	0.23		
NBR	0.5	800	57			37				
SBL	1	1600	193		0.12	90		0.06		
SBT	1.5	2400	268	178	0.11	389	225	0.14		
SBR	0.5	800	88			61				
EBL	1	1600	159		0.10	50		0.03		
EBT	1	1600	472		0.30	246		0.15		
EBR	1	1600	7		0.00	22		0.01		
WBL	1	1600	22		0.01	96		0.06		
WBT	1	1600	213		0.13	403		0.25		
WBR	1	1600	113		0.07	93		0.06		
		N/S Movements			0.41			0.28		
		E/W Movements			0.31			0.28		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.817			0.665		
LEVEL OF SERVICE (LOS)					D			B		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 7									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	3		0.00	8		0.01	
NBT	1	1600	362		0.23	404		0.25	
NBR	1	1600	47		0.03	21		0.01	
SBL	1	1600	105		0.07	53		0.03	
SBT	1	1600	247		0.15	464		0.29	
SBR	1	1600	46		0.03	19		0.01	
EBL	0.33	528	44			3			
EBT	0.33	528	69	127	0.08	6	24	0.02	
EBR	0.33	528	10			15			
WBL	0.33	528	53			12			
WBT	0.33	528	37	238	0.15	5	43	0.03	
WBR	0.33	528	143			25			
		N/S Movements			0.29			0.30	
		E/W Movements			0.149			0.03	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					0.541			0.422	
LEVEL OF SERVICE (LOS)					A			A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 8									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	71		0.04	74		0.05	
NBT	1.5	2400	274	140	0.09	301	156	0.10	
NBR	0.5	800	6			11			
SBL	1	1600	60		0.04	24		0.02	
SBT	0.5	800	361	374	0.23	222	246	0.15	
SBR	0.5	800	13			24			
EBL	0.33	528	10			14			
EBT	0.33	528	78	186	0.12	24	76	0.05	
EBR	0.33	528	97			37			
WBL	0.5	800	4			0			
WBT	0.5	800	47	51	0.03	36	36	0.02	
WBR	1	1600	62		0.04	23		0.01	
		N/S Movements				0.28		0.20	
		E/W Movements				0.12		0.05	
		Rt. Turn Component				0.00		0.00	
		Yellow Clearance				0.10		0.10	
TOTAL CAPACITY UTILIZATION					0.494			0.348	
LEVEL OF SERVICE (LOS)					A			A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 9									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	36		0.02	20		0.01	
NBT	1	1600	209		0.13	133		0.08	
NBR	1	1600	33		0.02	9		0.01	
SBL	1	1600	54		0.03	17		0.01	
SBT	0.5	800	175	197	0.12	105	125	0.08	
SBR	0.5	800	22			20			
EBL	1	1600	34		0.02	18		0.01	
EBT	0.5	800	149	185	0.12	57	68	0.04	
EBR	0.5	800	36			11			
WBL	1	1600	11		0.01	8		0.01	
WBT	0.5	800	77	134	0.08	88	107	0.07	
WBR	0.5	800	57			19			
		N/S Movements			0.16			0.09	
		E/W Movements			0.12			0.08	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					0.387			0.272	
LEVEL OF SERVICE (LOS)					A			A	
					ICU		LOS		
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 10									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	12		0.01	35		0.02	
NBT	0.5	800	258	266	0.17	349	362	0.23	
NBR	0.5	800	8			13			
SBL	1	1600	14		0.01	22		0.01	
SBT	0.5	800	223	251	0.16	382	434	0.27	
SBR	0.5	800	28			52			
EBL	1	1600	78		0.05	49		0.03	
EBT	1	1600	116		0.07	28		0.02	
EBR	1	1600	39			30			
WBL	1	1600	9		0.01	20		0.01	
WBT	0.5	800	35	54	0.03	59	87	0.05	
WBR	0.5	800	19			28			
		N/S Movements			0.17			0.29	
		E/W Movements			0.08			0.08	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					0.358			0.478	
LEVEL OF SERVICE (LOS)					A			A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 11									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	18		0.01	11		0.01	
NBT	1	1600	111		0.07	111		0.07	
NBR	1	1600	76		0.05	79		0.05	
SBL	1	1600	385		0.24	199		0.12	
SBT	0.5	800	83	84	0.05	39	43	0.03	
SBR	0.5	800	1			4			
EBL	0.33	528	0			3			
EBT	0.33	528	196	210	0.13	92	108	0.07	
EBR	0.33	528	14			10			
WBL	0.5	800	246			268			
WBT	0.5	800	80	572	0.36	141	436	0.27	
WBR	1	1600	105			85			
		N/S Movements			0.31			0.19	
		E/W Movements			0.36			0.27	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					0.768			0.566	
LEVEL OF SERVICE (LOS)					C			A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 12									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	22		0.01	16		0.01	
NBT	0.5	800	18	70	0.04	21	59	0.04	
NBR	0.5	800	52			38			
SBL	1	1600	49		0.03	87		0.05	
SBT	1	1600	17		0.01	25		0.02	
SBR	1	1600	12		0.01	4		0.00	
EBL	1	1600	4		0.00	7		0.00	
EBT	1.5	2400	443	228	0.14	359	190	0.12	
EBR	0.5	800	12			20			
WBL	1	1600	10		0.01	47		0.03	
WBT	2	3200	203		0.06	504		0.16	
WBR	1	1600	43		0.03	163		0.10	
		N/S Movements				0.07		0.09	
		E/W Movements				0.15		0.16	
		Rt. Turn Component				0.00		0.00	
		Yellow Clearance				0.10		0.10	
TOTAL CAPACITY UTILIZATION						0.323		0.353	
LEVEL OF SERVICE (LOS)						A		A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library										
ANALYSIS CONDITION: Existing Conditions With Project										
INTERSECTION: 13										
Analysis Date: 9/25/2014										
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR				
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C		
NBL	1	1600	108		0.07	275		0.17		
NBT	1	1600	180		0.11	230		0.14		
NBR	1	1600	124		0.08	41		0.03		
SBL	1	1600	30		0.02	56		0.04		
SBT	2	3200	203		0.06	312		0.10		
SBR	1	1600	71		0.04	80		0.05		
EBL	1	1600	37		0.02	92		0.06		
EBT	2	3200	376		0.12	215		0.07		
EBR	1	1600	223		0.14	191		0.12		
WBL	1	1600	92		0.06	112		0.07		
WBT	1.5	2400	150	95	0.06	384	244	0.15		
WBR	0.5	800	39			103				
		N/S Movements			0.13			0.27		
		E/W Movements			0.18			0.21		
		Rt. Turn Component			0.00			0.00		
		Yellow Clearance			0.10			0.10		
TOTAL CAPACITY UTILIZATION					0.406			0.579		
LEVEL OF SERVICE (LOS)					A			A		
						ICU		LOS		
					0.10	-	0.60	A		
					0.61	-	0.70	B		
					0.71	-	0.80	C		
					0.81	-	0.90	D		
					0.91	-	1.00	E		
					1.01	-	UP	F		

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 14									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	80		0.05	59		0.04	
NBT	1	1600	198		0.12	91		0.06	
NBR	1	1600	142		0.09	53		0.03	
SBL	1	1600	59		0.04	28		0.02	
SBT	1	1600	177		0.11	119		0.07	
SBR	1	1600	54		0.03	53		0.03	
EBL	1	1600	85		0.05	45		0.03	
EBT	1	1600	461		0.29	243		0.15	
EBR	1	1600	91		0.06	56		0.04	
WBL	1	1600	98		0.06	123		0.08	
WBT	1	1600	217		0.14	477		0.30	
WBR	1	1600	37		0.02	63		0.04	
		N/S Movements				0.16			0.11
		E/W Movements				0.35			0.33
		Rt. Turn Component				0.00			0.00
		Yellow Clearance				0.10			0.10
TOTAL CAPACITY UTILIZATION						0.610		0.538	
LEVEL OF SERVICE (LOS)						B		A	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library									
ANALYSIS CONDITION: Existing Conditions With Project									
INTERSECTION: 15									
Analysis Date: 9/25/2014									
MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR			
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C	
NBL	1	1600	65		0.04	143		0.09	
NBT	0.5	800	478	707	0.44	326	453	0.28	
NBR	0.5	800	229			127			
SBL	1	1600	161		0.10	152		0.10	
SBT	0.5	800	293	396	0.25	383	530	0.33	
SBR	0.5	800	103			147			
EBL	1	1600	122		0.08	120		0.08	
EBT	0.5	800	793	898	0.56	511	588	0.37	
EBR	0.5	800	105			77			
WBL	1	1600	127		0.08	168		0.11	
WBT	0.5	800	413	533	0.33	860	1016	0.64	
WBR	0.5	800	120			156			
		N/S Movements			0.54			0.42	
		E/W Movements			0.64			0.71	
		Rt. Turn Component			0.00			0.00	
		Yellow Clearance			0.10			0.10	
TOTAL CAPACITY UTILIZATION					1.283			1.230	
LEVEL OF SERVICE (LOS)					F			F	
						ICU		LOS	
					0.10	-	0.60	A	
					0.61	-	0.70	B	
					0.71	-	0.80	C	
					0.81	-	0.90	D	
					0.91	-	1.00	E	
					1.01	-	UP	F	

Appendix D
Opening Year (2016) Without Project ICU
Output

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **1**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	0.33	528	91			49		
NBT	0.33	528	80	233	0.15	81	158	0.10
NBR	0.33	528	53			23		
SBL	0.5	800	16			11		
SBT	0.5	800	100	198	0.12	81	114	0.07
SBR	1	1600	80		0.05	21		0.01
EBL	1	1600	72		0.05	12		0.01
EBT	0.5	800	312	423	0.26	77	108	0.07
EBR	0.5	800	111			31		
WBL	0.33	528	20			28		
WBT	0.33	528	263	321	0.20	96	142	0.09
WBR	0.33	528	18			15		
		N/S Movements			0.15			0.10
		E/W Movements			0.26			0.10
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.510			0.296
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **2**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	81		0.05	74		0.05
NBT	1	1600	341		0.21	322		0.20
NBR	1	1600	77		0.05	56		0.04
SBL	1	1600	16		0.01	15		0.01
SBT	1	1600	277		0.17	384		0.24
SBR	1	1600	39		0.02	36		0.02
EBL	1	1600	41		0.03	17		0.01
EBT	0.5	800	186	256	0.16	57	105	0.07
EBR	0.5	800	70			48		
WBL	1	1600	61		0.04	67		0.04
WBT	0.5	800	114	125	0.08	67	81	0.05
WBR	0.5	800	11			14		
		N/S Movements			0.22			0.29
		E/W Movements			0.20			0.11
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.522			0.494
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **3**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	0.33	528	27			49		
NBT	0.33	528	344	428	0.27	228	355	0.22
NBR	0.33	528	30			29		
SBL	1	1600	133		0.08	47		0.03
SBT	0.5	800	372	385	0.24	247	280	0.18
SBR	0.5	800	13			33		
EBL	0.33	528	34			22		
EBT	0.33	528	187	305	0.19	118	194	0.12
EBR	0.33	528	50			32		
WBL	1	1600	33		0.02	19		0.01
WBT	1	1600	67		0.04	147		0.09
WBR	1	1600	189		0.12	71		0.04
		N/S Movements				0.35		0.25
		E/W Movements				0.21		0.13
		Rt. Turn Component				0.00		0.00
		Yellow Clearance				0.10		0.10

TOTAL CAPACITY UTILIZATION **0.663** **0.484**
LEVEL OF SERVICE (LOS) **B** **A**

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **4**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	65		0.04	22		0.01
NBT	0.5	800	238	280	0.18	113	134	0.08
NBR	0.5	800	42			21		
SBL	1	1600	102		0.06	16		0.01
SBT	1	1600	186		0.12	104		0.07
SBR	1	1600	16		0.01	19		0.01
EBL	1	1600	35		0.02	19		0.01
EBT	0.5	800	307	358	0.22	198	213	0.13
EBR	0.5	800	51			15		
WBL	1	1600	33		0.02	42		0.03
WBT	1	1600	202		0.13	238		0.15
WBR	1	1600	70		0.04	43		0.03
		N/S Movements			0.24			0.09
		E/W Movements			0.24			0.16
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.583			0.353
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **5**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	109		0.07	82		0.05
NBT	1	1600	416		0.26	293		0.18
NBR	1	1600	95		0.06	44		0.03
SBL	1	1600	76		0.05	60		0.04
SBT	1	1600	318		0.20	368		0.23
SBR	1	1600	46		0.03	83		0.05
EBL	1	1600	58		0.04	64		0.04
EBT	1	1600	256		0.16	118		0.07
EBR	1	1600	139		0.09	84		0.05
WBL	1	1600	44		0.03	62		0.04
WBT	1	1600	130		0.08	178		0.11
WBR	1	1600	60		0.04	101		0.06
		N/S Movements			0.31			0.28
		E/W Movements			0.19			0.15
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.595			0.533
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **6**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	33		0.02	29		0.02
NBT	0.5	800	404	461	0.29	325	362	0.23
NBR	0.5	800	57			37		
SBL	1	1600	193		0.12	90		0.06
SBT	1.5	2400	268	178	0.11	389	225	0.14
SBR	0.5	800	88			61		
EBL	1	1600	159		0.10	50		0.03
EBT	1	1600	477		0.30	247		0.15
EBR	1	1600	7		0.00	22		0.01
WBL	1	1600	22		0.01	96		0.06
WBT	1	1600	218		0.14	406		0.25
WBR	1	1600	113		0.07	93		0.06
		N/S Movements			0.41			0.28
		E/W Movements			0.31			0.29
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.821			0.667
LEVEL OF SERVICE (LOS)					D			B
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **7**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	3		0.00	8		0.01
NBT	1	1600	383		0.24	396		0.25
NBR	1	1600	47		0.03	21		0.01
SBL	1	1600	105		0.07	53		0.03
SBT	1	1600	266		0.17	463		0.29
SBR	1	1600	46		0.03	19		0.01
EBL	0.33	528	44			3		
EBT	0.33	528	69	127	0.08	6	24	0.02
EBR	0.33	528	10			15		
WBL	0.33	528	53			12		
WBT	0.33	528	37	238	0.15	5	43	0.03
WBR	0.33	528	143			25		
		N/S Movements			0.31			0.29
		E/W Movements			0.149			0.03
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.554			0.421
LEVEL OF SERVICE (LOS)					A			A
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: **8**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	71		0.04	74		0.05
NBT	1.5	2400	274	140	0.09	301	156	0.10
NBR	0.5	800	6			11		
SBL	1	1600	60		0.04	24		0.02
SBT	0.5	800	361	374	0.23	222	246	0.15
SBR	0.5	800	13			24		
EBL	0.33	528	10			14		
EBT	0.33	528	82	190	0.12	22	74	0.05
EBR	0.33	528	97			37		
WBL	0.5	800	4			0		
WBT	0.5	800	49	53	0.03	34	34	0.02
WBR	1	1600	62		0.04	23		0.01
		N/S Movements				0.28		0.20
		E/W Movements				0.12		0.05
		Rt. Turn Component				0.00		0.00
		Yellow Clearance				0.10		0.10
TOTAL CAPACITY UTILIZATION					0.497			0.347
LEVEL OF SERVICE (LOS)					A			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 9
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	36		0.02	20		0.01
NBT	1	1600	209		0.13	133		0.08
NBR	1	1600	33		0.02	9		0.01
SBL	1	1600	54		0.03	17		0.01
SBT	0.5	800	175	197	0.12	105	125	0.08
SBR	0.5	800	22			20		
EBL	1	1600	34		0.02	18		0.01
EBT	0.5	800	153	189	0.12	55	66	0.04
EBR	0.5	800	36			11		
WBL	1	1600	11		0.01	8		0.01
WBT	0.5	800	79	136	0.09	86	105	0.07
WBR	0.5	800	57			19		
N/S Movements						0.16		0.09
E/W Movements						0.12		0.08
Rt. Turn Component						0.00		0.00
Yellow Clearance						0.10		0.10
TOTAL CAPACITY UTILIZATION						0.389		0.271
LEVEL OF SERVICE (LOS)						A		A

	ICU	LOS	
0.10	-	0.60	A
0.61	-	0.70	B
0.71	-	0.80	C
0.81	-	0.90	D
0.91	-	1.00	E
1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 10
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	12		0.01	35		0.02
NBT	0.5	800	275	283	0.18	343	356	0.22
NBR	0.5	800	8			13		
SBL	1	1600	14		0.01	22		0.01
SBT	0.5	800	240	270	0.17	383	433	0.27
SBR	0.5	800	30			50		
EBL	1	1600	82		0.05	47		0.03
EBT	1	1600	116		0.07	28		0.02
EBR	1	1600	39			30		
WBL	1	1600	9		0.01	20		0.01
WBT	0.5	800	35	54	0.03	59	87	0.05
WBR	0.5	800	19			28		
N/S Movements						0.19		0.29
E/W Movements						0.09		0.08
Rt. Turn Component						0.00		0.00
Yellow Clearance						0.10		0.10
TOTAL CAPACITY UTILIZATION						0.371		0.476
LEVEL OF SERVICE (LOS)						A		A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 11
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	18		0.01	11		0.01
NBT	1	1600	111		0.07	111		0.07
NBR	1	1600	76		0.05	79		0.05
SBL	1	1600	385		0.24	199		0.12
SBT	0.5	800	83	84	0.05	39	43	0.03
SBR	0.5	800	1			4		
EBL	0.33	528	0			3		
EBT	0.33	528	200	214	0.13	90	106	0.07
EBR	0.33	528	14			10		
WBL	0.5	800	246			268		
WBT	0.5	800	82	574	0.36	139	434	0.27
WBR	1	1600	105			85		
		N/S Movements			0.31			0.19
		E/W Movements			0.36			0.27
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.769			0.565
LEVEL OF SERVICE (LOS)					C			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 12
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	22		0.01	16		0.01
NBT	0.5	800	18	69	0.04	21	57	0.04
NBR	0.5	800	51			36		
SBL	1	1600	49		0.03	87		0.05
SBT	1	1600	17		0.01	25		0.02
SBR	1	1600	12		0.01	4		0.00
EBL	1	1600	4		0.00	7		0.00
EBT	1.5	2400	447	230	0.14	357	189	0.12
EBR	0.5	800	12			20		
WBL	1	1600	10		0.01	45		0.03
WBT	2	3200	205		0.06	502		0.16
WBR	1	1600	43		0.03	163		0.10
		N/S Movements			0.07			0.09
		E/W Movements			0.15			0.16
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.323			0.352
LEVEL OF SERVICE (LOS)					A			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 13
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	108		0.07	275		0.17
NBT	1	1600	196		0.12	235		0.15
NBR	1	1600	124		0.08	41		0.03
SBL	1	1600	29		0.02	49		0.03
SBT	2	3200	219		0.07	325		0.10
SBR	1	1600	72		0.05	76		0.05
EBL	1	1600	40		0.03	88		0.06
EBT	2	3200	376		0.12	215		0.07
EBR	1	1600	223		0.14	191		0.12
WBL	1	1600	92		0.06	112		0.07
WBT	1.5	2400	150	94	0.06	384	240	0.15
WBR	0.5	800	37			96		
N/S Movements					0.14			0.27
E/W Movements					0.18			0.21
Rt. Turn Component					0.00			0.00
Yellow Clearance					0.10			0.10
TOTAL CAPACITY UTILIZATION					0.416			0.578
LEVEL OF SERVICE (LOS)					A			A

	ICU	LOS	
0.10	-	0.60	A
0.61	-	0.70	B
0.71	-	0.80	C
0.81	-	0.90	D
0.91	-	1.00	E
1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 14
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	79		0.05	54		0.03
NBT	1	1600	198		0.12	91		0.06
NBR	1	1600	142		0.09	53		0.03
SBL	1	1600	60		0.04	28		0.02
SBT	1	1600	177		0.11	119		0.07
SBR	1	1600	54		0.03	53		0.03
EBL	1	1600	85		0.05	45		0.03
EBT	1	1600	461		0.29	241		0.15
EBR	1	1600	91		0.06	51		0.03
WBL	1	1600	98		0.06	123		0.08
WBT	1	1600	216		0.14	475		0.30
WBR	1	1600	37		0.02	64		0.04
		N/S Movements			0.16			0.11
		E/W Movements			0.35			0.33
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.611			0.533
LEVEL OF SERVICE (LOS)					B			A
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions Without Project
 INTERSECTION: 15
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	65		0.04	143		0.09
NBT	0.5	800	478	707	0.44	326	453	0.28
NBR	0.5	800	229			127		
SBL	1	1600	161		0.10	152		0.10
SBT	0.5	800	293	396	0.25	383	530	0.33
SBR	0.5	800	103			147		
EBL	1	1600	122		0.08	120		0.08
EBT	0.5	800	794	899	0.56	509	586	0.37
EBR	0.5	800	105			77		
WBL	1	1600	127		0.08	168		0.11
WBT	0.5	800	412	532	0.33	859	1015	0.63
WBR	0.5	800	120			156		
		N/S Movements			0.54			0.42
		E/W Movements			0.64			0.71
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					1.284			1.229
LEVEL OF SERVICE (LOS)					F			F

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

Appendix E
Opening Year (2016) With Project ICU
Output

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **1**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	0.33	528	91			49		
NBT	0.33	528	80	233	0.15	86	163	0.10
NBR	0.33	528	53			23		
SBL	0.5	800	16			11		
SBT	0.5	800	101	199	0.12	86	119	0.07
SBR	1	1600	80		0.05	21		0.01
EBL	1	1600	72		0.05	12		0.01
EBT	0.5	800	312	423	0.26	77	108	0.07
EBR	0.5	800	111			31		
WBL	0.33	528	20			28		
WBT	0.33	528	263	321	0.20	96	142	0.09
WBR	0.33	528	18			15		
		N/S Movements			0.15			0.10
		E/W Movements			0.26			0.10
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.510			0.299
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **2**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	81		0.05	74		0.05
NBT	1	1600	342		0.21	332		0.21
NBR	1	1600	77		0.05	56		0.04
SBL	1	1600	16		0.01	15		0.01
SBT	1	1600	279		0.17	393		0.25
SBR	1	1600	39		0.02	36		0.02
EBL	1	1600	41		0.03	17		0.01
EBT	0.5	800	186	256	0.16	57	105	0.07
EBR	0.5	800	70			48		
WBL	1	1600	61		0.04	67		0.04
WBT	0.5	800	114	125	0.08	67	81	0.05
WBR	0.5	800	11			14		
		N/S Movements			0.23			0.29
		E/W Movements			0.20			0.11
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.523			0.500
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **3**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	0.33	528	27			49		
NBT	0.33	528	344	428	0.27	228	355	0.22
NBR	0.33	528	30			29		
SBL	1	1600	133		0.08	47		0.03
SBT	0.5	800	372	385	0.24	247	280	0.18
SBR	0.5	800	13			33		
EBL	0.33	528	34			22		
EBT	0.33	528	188	306	0.19	122	198	0.12
EBR	0.33	528	50			32		
WBL	1	1600	33		0.02	19		0.01
WBT	1	1600	67		0.04	152		0.10
WBR	1	1600	189		0.12	71		0.04
		N/S Movements			0.35			0.25
		E/W Movements			0.21			0.14
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION			0.663			0.487		
LEVEL OF SERVICE (LOS)			B			A		

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **4**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	65		0.04	22		0.01
NBT	0.5	800	238	280	0.18	113	134	0.08
NBR	0.5	800	42			21		
SBL	1	1600	103		0.06	20		0.01
SBT	1	1600	186		0.12	104		0.07
SBR	1	1600	16		0.01	19		0.01
EBL	1	1600	35		0.02	19		0.01
EBT	0.5	800	308	359	0.22	202	217	0.14
EBR	0.5	800	51			15		
WBL	1	1600	33		0.02	42		0.03
WBT	1	1600	202		0.13	243		0.15
WBR	1	1600	70		0.04	48		0.03
		N/S Movements				0.24		0.10
		E/W Movements				0.24		0.16
		Rt. Turn Component				0.00		0.00
		Yellow Clearance				0.10		0.10
TOTAL CAPACITY UTILIZATION						0.584		0.359
LEVEL OF SERVICE (LOS)						A		A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **5**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	110		0.07	92		0.06
NBT	1	1600	417		0.26	303		0.19
NBR	1	1600	95		0.06	46		0.03
SBL	1	1600	76		0.05	60		0.04
SBT	1	1600	320		0.20	377		0.24
SBR	1	1600	46		0.03	83		0.05
EBL	1	1600	58		0.04	64		0.04
EBT	1	1600	256		0.16	118		0.07
EBR	1	1600	141		0.09	93		0.06
WBL	1	1600	44		0.03	64		0.04
WBT	1	1600	130		0.08	178		0.11
WBR	1	1600	60		0.04	101		0.06
		N/S Movements			0.31			0.29
		E/W Movements			0.19			0.15
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.596			0.544
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **6**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	33		0.02	29		0.02
NBT	0.5	800	404	461	0.29	325	362	0.23
NBR	0.5	800	57			37		
SBL	1	1600	193		0.12	90		0.06
SBT	1.5	2400	268	178	0.11	389	225	0.14
SBR	0.5	800	88			61		
EBL	1	1600	159		0.10	50		0.03
EBT	1	1600	477		0.30	249		0.16
EBR	1	1600	7		0.00	22		0.01
WBL	1	1600	22		0.01	96		0.06
WBT	1	1600	218		0.14	408		0.26
WBR	1	1600	113		0.07	93		0.06
		N/S Movements			0.41			0.28
		E/W Movements			0.31			0.29
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.821			0.669
LEVEL OF SERVICE (LOS)					D			B
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **7**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	3		0.00	8		0.01
NBT	1	1600	389		0.24	420		0.26
NBR	1	1600	47		0.03	21		0.01
SBL	1	1600	105		0.07	53		0.03
SBT	1	1600	268		0.17	489		0.31
SBR	1	1600	46		0.03	19		0.01
EBL	0.33	528	44			3		
EBT	0.33	528	69	127	0.08	6	24	0.02
EBR	0.33	528	10			15		
WBL	0.33	528	53			12		
WBT	0.33	528	37	238	0.15	5	43	0.03
WBR	0.33	528	143			25		
		N/S Movements			0.31			0.31
		E/W Movements			0.149			0.03
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.558			0.438
LEVEL OF SERVICE (LOS)					A			A
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: **8**
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	71		0.04	74		0.05
NBT	1.5	2400	274	140	0.09	301	156	0.10
NBR	0.5	800	6			11		
SBL	1	1600	60		0.04	24		0.02
SBT	0.5	800	361	374	0.23	222	246	0.15
SBR	0.5	800	13			24		
EBL	0.33	528	10			14		
EBT	0.33	528	83	191	0.12	26	78	0.05
EBR	0.33	528	97			37		
WBL	0.5	800	4			0		
WBT	0.5	800	49	53	0.03	39	39	0.02
WBR	1	1600	62		0.04	23		0.01
		N/S Movements				0.28		0.20
		E/W Movements				0.12		0.05
		Rt. Turn Component				0.00		0.00
		Yellow Clearance				0.10		0.10
TOTAL CAPACITY UTILIZATION					0.497			0.349
LEVEL OF SERVICE (LOS)					A			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 9
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	36		0.02	20		0.01
NBT	1	1600	209		0.13	133		0.08
NBR	1	1600	33		0.02	9		0.01
SBL	1	1600	54		0.03	17		0.01
SBT	0.5	800	175	197	0.12	105	125	0.08
SBR	0.5	800	22			20		
EBL	1	1600	34		0.02	18		0.01
EBT	0.5	800	154	190	0.12	59	70	0.04
EBR	0.5	800	36			11		
WBL	1	1600	11		0.01	8		0.01
WBT	0.5	800	79	136	0.09	91	110	0.07
WBR	0.5	800	57			19		
		N/S Movements			0.16			0.09
		E/W Movements			0.13			0.08
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION			0.390			0.274		
LEVEL OF SERVICE (LOS)			A			A		

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 10
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	12		0.01	35		0.02
NBT	0.5	800	280	288	0.18	363	376	0.24
NBR	0.5	800	8			13		
SBL	1	1600	14		0.01	22		0.01
SBT	0.5	800	242	272	0.17	404	459	0.29
SBR	0.5	800	30			55		
EBL	1	1600	83		0.05	51		0.03
EBT	1	1600	116		0.07	28		0.02
EBR	1	1600	39			30		
WBL	1	1600	9		0.01	20		0.01
WBT	0.5	800	35	54	0.03	59	87	0.05
WBR	0.5	800	19			28		
N/S Movements					0.19			0.31
E/W Movements					0.09			0.09
Rt. Turn Component					0.00			0.00
Yellow Clearance					0.10			0.10
TOTAL CAPACITY UTILIZATION					0.375			0.495
LEVEL OF SERVICE (LOS)					A			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 11
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	18		0.01	11		0.01
NBT	1	1600	111		0.07	111		0.07
NBR	1	1600	76		0.05	79		0.05
SBL	1	1600	385		0.24	199		0.12
SBT	0.5	800	83	84	0.05	39	43	0.03
SBR	0.5	800	1			4		
EBL	0.33	528	0			3		
EBT	0.33	528	201	215	0.13	94	110	0.07
EBR	0.33	528	14			10		
WBL	0.5	800	246			268		
WBT	0.5	800	82	574	0.36	144	439	0.27
WBR	1	1600	105			85		
		N/S Movements			0.31			0.19
		E/W Movements			0.36			0.27
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.769			0.568
LEVEL OF SERVICE (LOS)					C			A

	ICU	LOS
0.10	-	A
0.61	-	B
0.71	-	C
0.81	-	D
0.91	-	E
1.01	-	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 12
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	22		0.01	16		0.01
NBT	0.5	800	18	70	0.04	21	59	0.04
NBR	0.5	800	52			38		
SBL	1	1600	49		0.03	87		0.05
SBT	1	1600	17		0.01	25		0.02
SBR	1	1600	12		0.01	4		0.00
EBL	1	1600	4		0.00	7		0.00
EBT	1.5	2400	448	230	0.14	361	191	0.12
EBR	0.5	800	12			20		
WBL	1	1600	10		0.01	47		0.03
WBT	2	3200	205		0.06	507		0.16
WBR	1	1600	43		0.03	163		0.10
		N/S Movements			0.07			0.09
		E/W Movements			0.15			0.16
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.325			0.354
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 13
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	108		0.07	275		0.17
NBT	1	1600	197		0.12	242		0.15
NBR	1	1600	124		0.08	41		0.03
SBL	1	1600	30		0.02	56		0.04
SBT	2	3200	220		0.07	332		0.10
SBR	1	1600	73		0.05	83		0.05
EBL	1	1600	42		0.03	94		0.06
EBT	2	3200	376		0.12	215		0.07
EBR	1	1600	223		0.14	191		0.12
WBL	1	1600	92		0.06	112		0.07
WBT	1.5	2400	150	95	0.06	384	244	0.15
WBR	0.5	800	39			103		
		N/S Movements			0.14			0.28
		E/W Movements			0.18			0.21
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					0.417			0.586
LEVEL OF SERVICE (LOS)					A			A
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 14
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	80		0.05	59	0.04	
NBT	1	1600	198		0.12	91	0.06	
NBR	1	1600	142		0.09	53	0.03	
SBL	1	1600	60		0.04	28	0.02	
SBT	1	1600	177		0.11	119	0.07	
SBR	1	1600	54		0.03	53	0.03	
EBL	1	1600	85		0.05	45	0.03	
EBT	1	1600	461		0.29	243	0.15	
EBR	1	1600	91		0.06	56	0.04	
WBL	1	1600	98		0.06	123	0.08	
WBT	1	1600	217		0.14	477	0.30	
WBR	1	1600	37		0.02	64	0.04	
		N/S Movements			0.16		0.11	
		E/W Movements			0.35		0.33	
		Rt. Turn Component			0.00		0.00	
		Yellow Clearance			0.10		0.10	
TOTAL CAPACITY UTILIZATION					0.611		0.538	
LEVEL OF SERVICE (LOS)					B		A	
					ICU		LOS	
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

**INTERSECTION CAPACITY UTILIZATION
CALCULATION WORKSHEET**

PROJECT: Quartz Hill Library
 ANALYSIS CONDITION: Future (2016) Conditions With Project
 INTERSECTION: 15
 Analysis Date: 9/17/2014

MOVEMENT	LANES	CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
			VOLUME	ADJ VOL	ADJ V/C	VOLUME	ADJ VOL	ADJ V/C
NBL	1	1600	65		0.04	143		0.09
NBT	0.5	800	478	707	0.44	326	453	0.28
NBR	0.5	800	229			127		
SBL	1	1600	161		0.10	152		0.10
SBT	0.5	800	293	396	0.25	383	530	0.33
SBR	0.5	800	103			147		
EBL	1	1600	122		0.08	120		0.08
EBT	0.5	800	794	899	0.56	511	588	0.37
EBR	0.5	800	105			77		
WBL	1	1600	127		0.08	168		0.11
WBT	0.5	800	413	533	0.33	861	1017	0.64
WBR	0.5	800	120			156		
		N/S Movements			0.54			0.42
		E/W Movements			0.64			0.71
		Rt. Turn Component			0.00			0.00
		Yellow Clearance			0.10			0.10
TOTAL CAPACITY UTILIZATION					1.284			1.231
LEVEL OF SERVICE (LOS)					F			F
						ICU		LOS
					0.10	-	0.60	A
					0.61	-	0.70	B
					0.71	-	0.80	C
					0.81	-	0.90	D
					0.91	-	1.00	E
					1.01	-	UP	F

