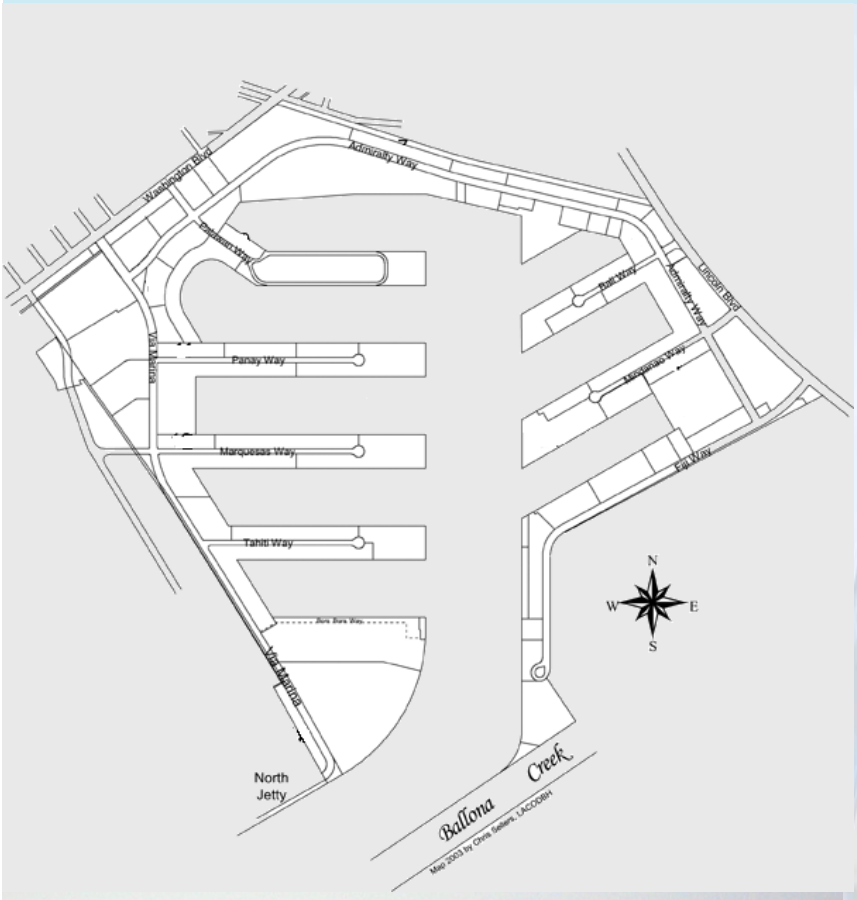
DRAFT
TRAFFIC STUDY
FOR THE MARINA DEL REY
LOCAL COASTAL PROGRAM AMENDMENT



Prepared for:

Los Angeles County
Department of Beaches & Harbors
Caring for Your Coast

April 29, 2010

Submitted by :

RAJU Associates Inc

DRAFT

TRAFFIC STUDY

FOR THE

MARINA DEL REY LOCAL COASTAL PROGRAM AMENDMENT

Prepared for:

COUNTY OF LOS ANGELES DEPARTMENT OF BEACHES AND HARBORS

Prepared by:

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Ref: RA 291

PREFACE

The Los Angeles County Department of Beaches and Harbors contracted with Raju Associates, Inc. to prepare a comprehensive traffic study for the Marina del Rey area for amendments to the Local Coastal Program (LCP). The purpose of this study was to provide an accurate picture of traffic volumes and flows in the Marina del Rey area that are currently occurring and identify potential transportation improvement measures for new development by Marina lessees. Five projects, also called "pipeline projects" have been identified and traffic conditions within the Marina that result from land use and location changes due to the five pipeline projects within the context of the overall approved buildout of the Marina have been studied. Changes to the transportation mitigation measures in the approved LCP as well as creation of three major development zones (MDZs) have also been identified as components of this LCP Amendment.

The currently-approved Marina del Rey Local Coastal Program (LCP) consists of a Land Use Plan (LUP) and a Local Implementation Program (LIP). The LUP establishes land use policy for the Marina, while the LIP provides the needed guidelines and regulations for new development. The proposed amendment to the LCP would facilitate the following three changes to the approved LCP for Marina del Rey - land use changes to types, sizes and locations required by the five pipeline projects; associated and other transportation improvement measures to support the proposed overall development; and the creation of the three major development zones (MDZs) to facilitate orderly and monitored development of potential buildout of the Marina.

The last comprehensive traffic study performed for Marina del Rey was completed in 1994 and incorporated into the LUP by reference. Since that time, traffic patterns and volumes have changed in the Marina del Rey area. The land uses contained in the LUP are also being updated. Therefore, the LCP will be subject to an amendment process. This Raju Associates study and other relevant documents will be used to revise the LUP's circulation chapter and to establish phasing and funding requirements for new development in the Marina.

This traffic study includes many sets of tests of the pipeline projects and overall buildout of the marina with and without improvements, and comparisons of the projected performance of the analysis locations under these scenarios to comparable conditions estimated in the 1991/94 DKS study. The analyses also reveal the projected transportation system performance under various scenarios. These analyses and comparisons inform the citizens, planners and decision-makers

about the projected performance of the transportation system in light of all the proposed changes inclusive of the proposed transportation improvement measures, relative to the projected conditions that were approved in the 1991/94 DKS study.

Many individuals have been involved in the development and subsequent analysis and review of this traffic study. Srinath Raju managed the project for Raju Associates with support from Christopher Muñoz, Sowmya Maya and Chi Phan. The contract was managed by Barry Kurtz from the Los Angeles County Department of Beaches and Harbors. Michael Tripp from Los Angeles County Department of Regional Planning provided detailed input to the study. William Winter and Jeff Pletyak from the Los Angeles County Department of Public Works participated in the study and gave input. Finally, Barry Kurtz and Charlotte Miyamoto from the Los Angeles County Department of Beaches and Harbors provided extensive review and valuable insights.

It is worth noting that this study is the product of extensive public agency review and coordination. This document will provide planners and decision-makers with the required data and analytics needed to promote informed discussions relative to transportation system implications of the proposed amendment project (consisting of the five pipeline projects, associated transportation improvements, and creation of the three major development zones).

ACRONYMS

ATCS – Adaptive Traffic Control System

ATSAC – Automated Traffic Surveillance and Control

CALCADB – Computer Assisted Level of Service Calculations and Database

CC – Culver City

CE – Los Angeles Department of Transportation Commuter Express

CMA Methodology – Critical Movement Analysis Methodology

I – Interstate

ITE – Institute of Transportation Engineers

LACDBH – Los Angeles County Department of Beaches and Harbors

LACMTA – Los Angeles County Metropolitan Authority

LADOT – Los Angeles Department of Transportation

LCP – Local Coastal Program

LIP – Local Implementation Program

LOS - Level of Service

LUP – Land Use Plan

MDZ – Major Development Zone

RTP – Regional Transportation Plan

SCAG – Southern California Association of Governments

SM – Santa Monica Big Blue Bus

SR - State Route

V/C Ratio – Volume to Capacity Ratio

TABLE OF CONTENTS

LIST OF FIGURES

NO.

LIST OF TABLES

NO.

APPENDICES
VOLUME II (PROVIDED UNDER A SEPARATE COVER)

A INTERSECTION LANE CONFIGURATIONS

B TRAFFIC COUNTS

C EXISTING (2009) CONDITIONS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

D FUTURE (2020) WITH AMBIENT GROWTH CONDITIONS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

E APPROVED LCP DEVELOPMENT AND PROPOSED LCP AMENDMENT DEVELOPMENT INFORMATION

F AMBIENT (2020) CONDITIONS WITH PIPELINE PROJECTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

G AMBIENT (2020) CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

H RELATED PROJECTS INFORMATION

I CUMULATIVE (2020) CONDITIONS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

J CUMULATIVE (2020) CONDITIONS WITH PIPELINE PROJECTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

K CUMULATIVE (2020) CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

L TRANSPORTATION MITIGATION PROGRAM IN THE APPROVED LCP

M AMBIENT (2020) CONDITIONS WITH PIPELINE PROJECTS AND IMPROVEMENTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

N AMBIENT (2020) CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

O CUMULATIVE (2020) CONDITIONS WITH PIPELINE PROJECTS AND IMPROVEMENTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

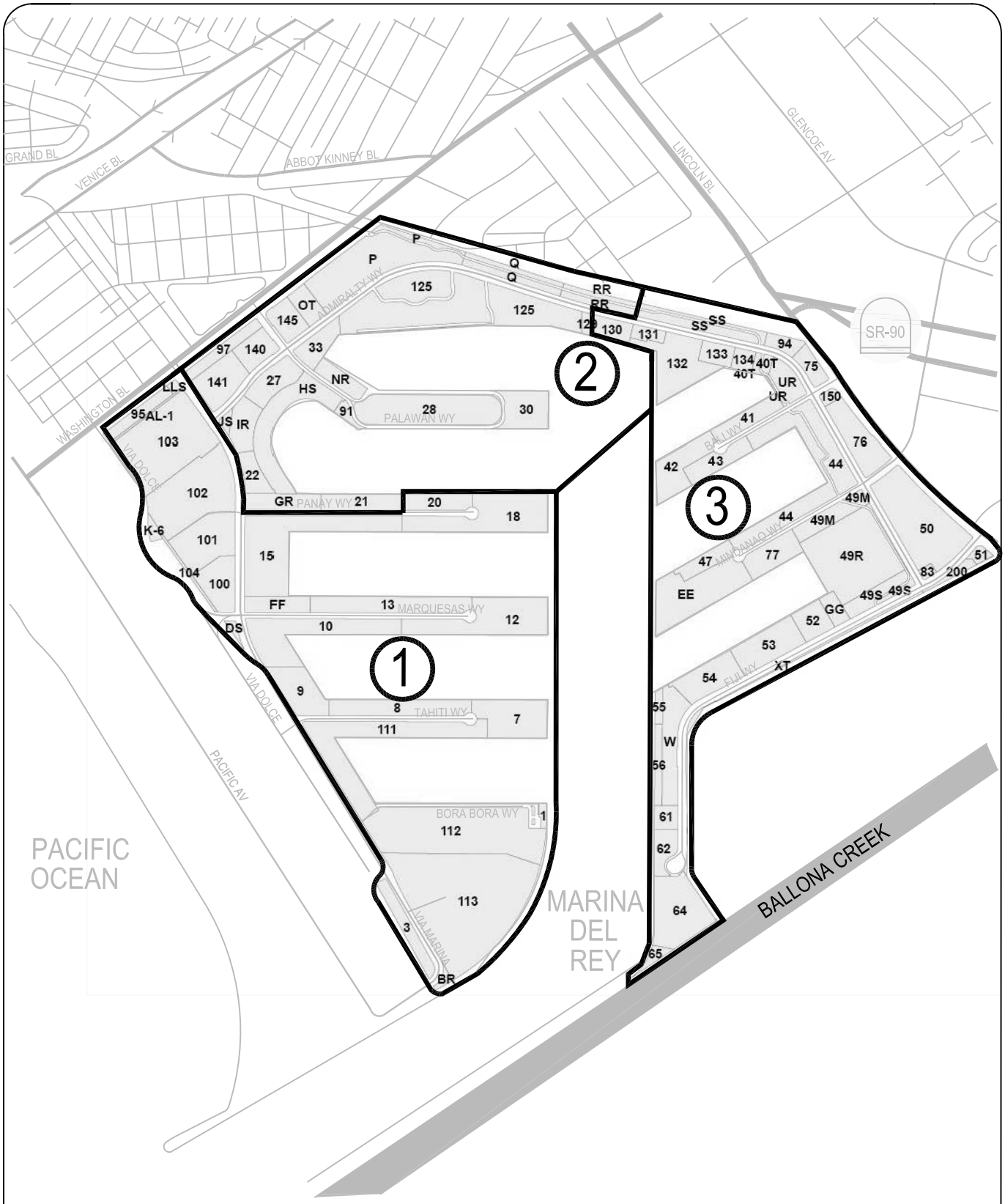
P CUMULATIVE (2020) CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS TRAFFIC VOLUMES AND LEVEL OF SERVICE WORKSHEETS

EXECUTIVE SUMMARY

A detailed traffic study has been performed by Raju Associates, Inc. to assess the proposed Marina del Rey Local Coastal Program (LCP) Amendment conditions and provide direction relative to improvement measures that may be required to alleviate traffic conditions within the Marina del Rey area of Los Angeles County, California. This Aggregate Amendment to the LCP is being prepared to accommodate the changes to the land use and their locations due to the five 'Pipeline Projects' as well as the changes to the transportation improvement measures being currently contemplated as part of the amendment. All these changes due to the Pipeline Projects and transportation improvement updates have been aggregated into a single amendment. This aggregate approach was endorsed by both the Los Angeles County Board of Supervisors and the California Coastal Commission and its staff.

The Marina del Rey Land Use Plan provides direction relative to future development potential within various development zones in Marina del Rey. These development zones currently consist of several parcels, each. For the purposes of the aggregate amendment to the LCP future development potential in Marina del Rey has been reallocated into three Major Development Zones (MDZs). Within a MDZ, the various parcels' land uses and resulting trip generation have been aggregated for the purposes of analyzing traffic movements and effects. This study provides a basis for analyzing traffic effects from proposed development in the Marina del Rey study area and provides an analysis of these effects and improvement measures. The zones are designed to isolate traffic effects on individual intersections in the Marina.

The MDZs including the associated parcels and the amount of potential development allocated to each MDZ have been summarized in this study. The potential development includes the redevelopment remaining from the approved development permitted in the LCP and the development that has been granted but not built. The Major Development Zones and the parcels included within each of them are presented in Figure AA.



LEGEND:

① ② ③ - MAJOR DEVELOPMENT ZONES (MDZ)

FF, 100, 101... - PARCEL NUMBERS

N
Not to scale

FIGURE AA
MAJOR DEVELOPMENT ZONES (MDZ) IN MARINA DEL REY

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A summary of the overall development potential is included below:

Proposed Local Coastal Program Buildout - Overall Total Potential Development

- Residential Units: 2,044 dwelling units
- Hotel: 505 rooms
- Visitor-Serving Commercial: 273,741 square feet of retail space
- Restaurant: 1,323 restaurant seats
- Congregate Care: 129 dwelling units
- Office: 26,000 square feet of office space
- Dry Stack: 375 spaces
- Library: 3,000 square feet
- Ferry Terminal Site
- Fire Station Expansion

There are five Pipeline Projects that are being proposed that require LCP amendments. These five projects that require LCP amendments are being aggregated into a single amendment. The aggregate approach was endorsed by both the Los Angeles County Board of Supervisors and the California Coastal Commission and its staff. The five Pipeline Projects are described below:

- Parcels 10/FF: 536 dwelling units replacing 136 dwelling units, a net total of 390 dwelling units.
- Parcels 33/NR: 292 dwelling units, 32,400 square feet of retail space, 323 restaurant seats and 69 public parking spaces, replacing 191 public parking spaces.
- Parcels OT/21: Parcel OT includes 114-room senior active accommodations, 5,000 square feet of retail space and 92 public parking spaces. OT currently has 186 public parking spaces, 92 of which will remain in OT and 94 spaces will be built in Parcel 21; Parcel 21 includes a net increase of 6,000 square feet of office space, a net decrease of 6,000 square feet of health club and 94 public parking spaces, Parcel 21 also includes 2,300 square feet of office space and 5,000 square feet of yacht club transferred from Parcel 20.
- Parcels 49/77: Option 1 -135,000 square feet of visitor-serving commercial space; Option 2 – 116,495 square feet of visitor-serving commercial space and 255 dwelling units; Option 3 – Up to 26,000 square feet of office use (Department of Beaches and Harbor Administration Building) with either Option 1 or Option 2.

- Parcels 52/GG: 375 dry stack spaces, 3,080 square feet of office use and 3,350 square feet of Sheriff's boatwright shop (existing).

The primary purpose of this study is to provide updated information and data to the Los Angeles County Department of Beaches and Harbors, Department of Public Works and Department of Regional Planning for amending the Local Coastal Program (LCP) and to determine the changes in conditions since the 1991/1994 DKS Traffic Studies were completed.

The following key tasks were performed as part of this study:

- Review of existing and past studies within the study area
- Reviewed all traffic models constructed in the region, including the DKS Traffic Study model, the updated SCAG model, the Playa Vista models and the model for the LAX Master Plan
- Update of existing traffic conditions in the study area
- Development of traffic forecasts and analyses of future conditions with and without the Proposed LCP Amendment
- Evaluation of improvement measures to alleviate traffic conditions resulting from the Proposed LCP Amendment

Twenty intersections within Marina del Rey and the City of Los Angeles have been analyzed in this study. These include the same nineteen locations that were analyzed in the original Marina del Rey Local Coastal Plan Traffic Study, January 1991, and Marina del Rey Local Coastal Plan Traffic Study Addendum, May 1994, prepared by DKS Associates (1991/1994 DKS Study) plus the intersection of Washington Boulevard at Palawan Way. Analysis of traffic operations at these intersections for various scenarios have been conducted and compared to those presented in the 1991/1994 Study. Details of the findings of this analysis and comparison are provided below.

- The study area for this project is bounded by Washington Boulevard on the north, Jefferson Boulevard on the south, Pacific Ocean on the west and Lincoln Boulevard on the east. These locations fall within the County of Los Angeles and City of Los Angeles. Also included are the intersections of SR 90 and Mindanao Way.

- Current traffic counts were conducted at each of the analysis intersections during both the morning and evening peak hours. A comparison of these counts with those conducted in the 1991/1994 DKS Study indicate that the current traffic counts have decreased overall by 5% and 8% during the morning and evening peak hours, respectively. This implies that the ambient growth projected in the 1991/1994 DKS Study has not occurred in this region.

- Currently, all 20 of the analyzed intersection locations are operating at levels of service (LOS) D or better during the morning and evening peak hours, with 19 of them operating a LOS C or better. Typically, in urban areas, LOS D is considered as acceptable operations. In the 1991/1994 DKS Study, "existing conditions" analysis identified that 3 locations during the morning peak hour and 9 locations during the evening peak hour were operating at congested or failing levels of service (LOS E or F). A comparison between the two indicates that the current operations at all of the analysis locations are equivalent to or better than the base conditions projected in the 1991/1994 DKS Study.

- In the Future Ambient (2020) conditions, all 20 locations in the morning peak hour and 19 of the 20 locations in the evening peak hour are projected to operate at LOS D or better. One intersection is projected to operate at LOS E. The Future Ambient (2020) conditions has been forecast to operate better than the Future Ambient (2010) conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The Proposed Pipeline Projects' trip generation would result in a total of approximately 1,163 trips (610 inbound, 553 outbound) during the evening peak hour. The Pipeline Projects account for approximately 46% of the overall LCP Buildout remaining (unbuilt) uses' trip generation.

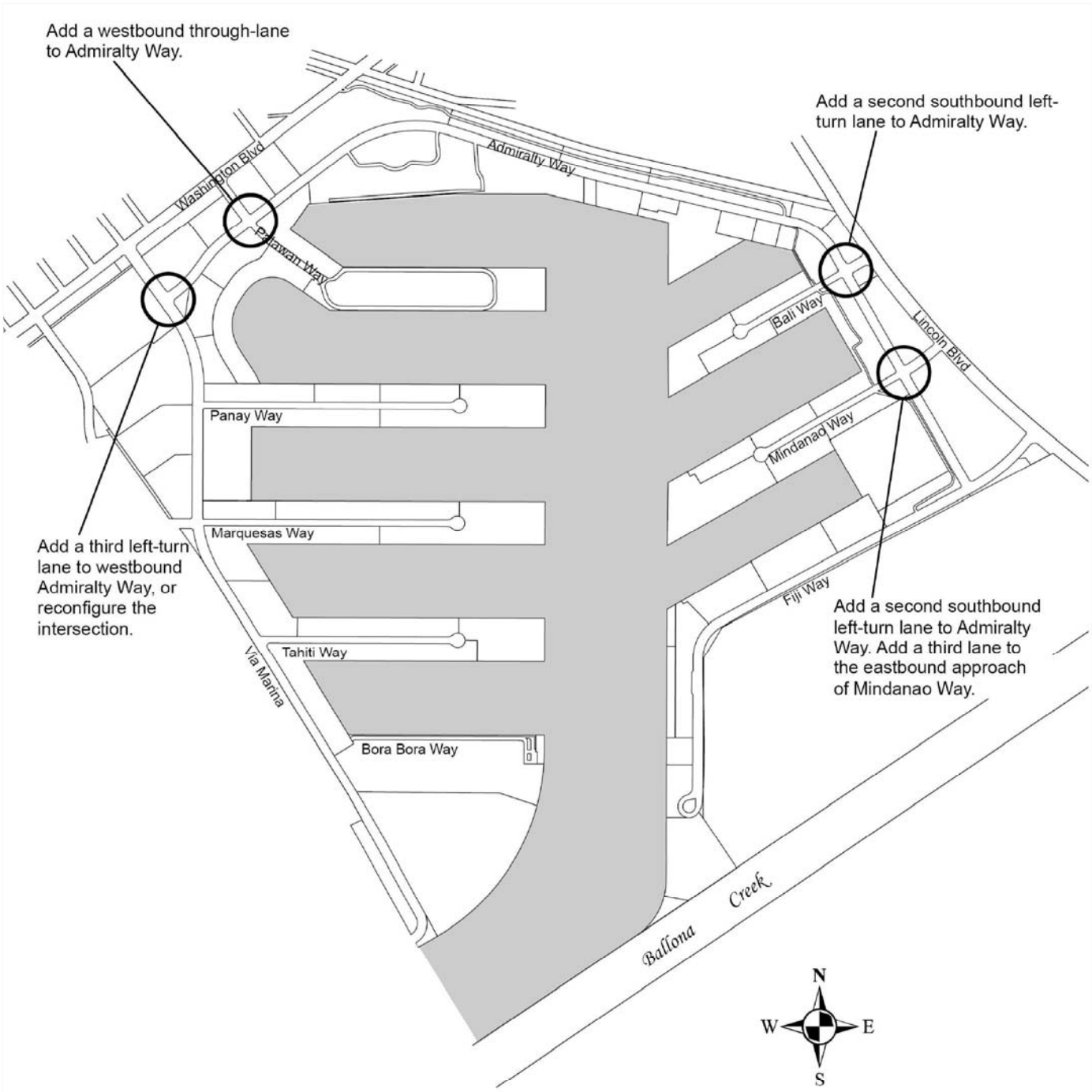
- In the Future Ambient (2020) with LCP Amendment (Pipeline Projects) conditions (without improvements), all 20 of the analyzed intersections in the morning peak hour and 18 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections in the evening peak hour are projected to operate at LOS E. The Future Ambient (2020) with LCP Amendment conditions have been forecast to operate better than the Future Ambient (2010) conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The LCP Amendment includes changes to the transportation improvement measures within the Marina del Rey area. Specific intersection improvement updates have been investigated, in addition to or in lieu of the Category 1 improvements in the approved LCP. Alternate additional improvement measures have also been developed at several intersections in order to provide improved operating conditions.

- The improvements, known as the Revised Set of Intersection Improvement Projects include (see Figure BB):

    1. Via Marina/Admiralty Way Intersection Improvement Alternatives

        a. Alternative A - The improvement at this intersection includes a third westbound left-turn lane and a second southbound left-turn lane. The westbound approach would provide three left-turn lanes and two right-turn lanes. The southbound approach would provide dual left-turn lanes and two through lanes.



SOURCE: LOS ANGELES COUNTY DEPARTMENT OF BEACHES AND HARBORS, PLANNING DIVISION

FIGURE BB
REVISED SET OF INTERSECTION IMPROVEMENT PROJECTS

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b. Alternative B - Realign this intersection to make Admiralty Way and Via Marina Way roadway segment south of Admiralty to become east-west roadways and make Via Marina Way north of Admiralty Way to "T" intersect into this roadway. The westbound Admiralty Way roadway would have two through lanes and a separate right-turn lane. The eastbound re-aligned Via Marina roadway would provide two through lanes and dual left-turn lanes. The re-aligned Via Marina Way southbound approach would provide dual left-turn lanes and a separate right-turn lane.

Replace the Admiralty Way 5-Lane Improvement Project recommended as part of the Local Coastal Program (LCP), with key intersection improvements (described below) that achieve similar improved operating results.

2. Palawan Way/Admiralty Way Intersection Improvement Alternatives

   a. Alternative A - The southbound approach at this intersection will be restriped to provide a left-turn lane, a shared left-through lane and a separate right-turn lane. The northbound approach would be restriped to provide a shared left-through lane and a shared through-right turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.

   b. Alternative B - Provide an additional lane by restriping the southbound approach. The southbound approach would provide dual left-turn lanes, one through lane and a separate right-turn lane. The northbound approach would be restriped to provide a shared left-through lane and a separate right-turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.

3. Admiralty Way/Bali Way - The improvement at this intersection includes a second southbound left-turn lane. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane.

4. Admiralty Way/Mindanao Way - The improvement at this intersection includes a second southbound left-turn lane and an additional lane on the eastbound approach. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane. The eastbound approach would provide a left-turn lane, a shared left-through lane and a shared through-right lane. The improvement also includes restriping the westbound approach to provide a left-turn lane, a shared left-through-right lane, and a separate right-turn lane. The east-west signal phase would operate as a split phase due to the lane configurations.

- In the Future Ambient (2020) with LCP Amendment conditions (with Revised Set of Intersection Improvement Projects), all 20 of the analyzed intersections in the morning peak hour and 19 of the 20 analyzed intersections in the evening peak hour are projected

to operate at LOS D or better. The remaining intersection (Culver Boulevard at Jefferson Boulevard) is projected to continue to operate at LOS E in the evening peak hour. The Future Ambient (2020) with LCP Amendment and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Future Ambient conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The proposed overall LCP Buildout including the Pipeline Projects Amendment would generate slightly less than the amount of trips generated by the LCP uses approved but not built yet, from the 1991/94 DKS Study, during the evening peak hour. The Proposed LCP Buildout trip generation would result in a total of approximately 2,503 trips (1,378 inbound, 1,125 outbound) during the evening peak hour. This is equivalent to approximately 91% of the approved PM peak hour trips in the LCP.

- In the Future Ambient (2020) with proposed LCP Buildout (including Pipeline Projects prior to any of the improvements) conditions, all 20 of the analyzed intersections in the morning peak hour and 10 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections in the evening peak hour are projected to operate at LOS E or F. The Future Ambient (2020) with LCP Buildout conditions has been forecast to operate better than the Future Ambient (2010) plus approved LCP conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future Ambient (2020) with LCP Buildout conditions (with the Revised Set of Intersection Improvement Projects), all 20 of the analyzed intersections in the morning peak hour and 15 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The Future Ambient (2020) with LCP Buildout and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Future Ambient plus approved LCP and mitigations conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- A cumulative analysis of future 2020 conditions with all related projects was performed and compared to the cumulative analysis conditions in the 1991/1994 DKS Study. In the Cumulative (2020) conditions, 18 and 17 of the 20 analyzed intersections are projected to operate at LOS D or better during the morning and evening peak hours, respectively. The remaining intersections are projected to operate at LOS E or F. The Cumulative (2020) conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Amendment (Pipeline Projects) conditions, 18 and 13 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. The Cumulative (2020) with LCP Amendment conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Amendment (Pipeline Projects) conditions (with the Revised Set of Intersection Improvement Projects), 18 and 15 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. The Cumulative (2020) with LCP Amendment and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with Proposed LCP Buildout (including Pipeline Projects) conditions, 14 and 8 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. Again, the Cumulative (2020) with LCP Buildout conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Buildout conditions (with the Revised Set of Intersection Improvement Projects), 15 and 12 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. Again, the Cumulative (2020) with LCP Buildout and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In summary, the proposed LCP Amendment (with Pipeline Projects) as well as the proposed LCP Buildout traffic conditions with the Revised Set of Intersection Improvement Projects would result in better operating conditions at all analysis locations than the future conditions with the approved LCP in the 1991/1994 DKS Study. Accordingly, the Revised Set of Intersection Improvement Projects would provide sufficient capacity for the five Pipeline Projects and for the proposed LCP buildout traffic conditions. Further, the Future Cumulative (2020) with both the proposed Amendment and proposed Buildout conditions are also projected to operate better than the Future Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study.

- As part of this LCP Amendment, the number of development zones is proposed to be reduced to three major development zones within the Marina del Rey Local Coastal Plan area. This reduction of the number of development zones to three does not cause any substantial change in traffic operating conditions described for any of the scenarios summarized above.

I. INTRODUCTION

This report documents the assumptions, methodologies and findings of a study conducted by Raju Associates, Inc., to assess the proposed Marina del Rey Local Coastal Program (LCP) Amendment conditions including the five Pipeline Projects. This Plan Amendment is being prepared to evaluate and support the changes to the land use and their locations due to the five Pipeline Projects as well as the changes to the transportation improvement measures being currently contemplated within the Marina del Rey area in Los Angeles County, California.

The Proposed Project defined in this study as the Local Coastal Program Amendment (LCP Amendment) consists of the Pipeline Projects, changes to the transportation improvement measures and the specification of the three major development zones within Marina del Rey area.

LOCAL COASTAL PROGRAM AMENDMENT PROJECT DESCRIPTION

Five development projects have been proposed within Marina del Rey that would require amendments to the Marina del Rey Local Coastal Program. These projects, also referred to as 'the Pipeline Projects' are proposing land uses that include residential, commercial retail, active senior accommodations, hotel rooms, restaurants, visitor-serving commercial, office and dry-stack spaces within parcels 10/FF, OT/21, 33/NR, 52/GG and 49/77. The Pipeline Projects consist of new and intensified uses in these parcels that are being facilitated by relocating these and other uses equivalent to their approved trip-making potential from adjacent and other parcels in the Marina, per the currently approved LCP.

Numerous changes to the transportation improvements are also being proposed to support the land use changes noted above, that would also require LCP amendments. All these changes due to the Pipeline Projects and the transportation improvement updates have been aggregated into a single amendment. The aggregate approach was endorsed by both the Los Angeles County Board of Supervisors and the California Coastal Commission and its staff.

The Marina del Rey Land Use Plan is for a jurisdiction comprised of numerous lease parcels. For the purposes of the LCP Amendment, future development potential in the Marina del Rey LCP area has been divided into three Major Development Zones (MDZs). Within a MDZ, all the parcels have been aggregated for the purposes of analyzing traffic movements and their effects. This study provides a basis for analyzing traffic effects from proposed development in the Marina del Rey LCP study area. The zones are designed to isolate traffic effects on individual intersections in the Marina. The MDZs including the associated parcels and the amount of potential development allocated to each MDZ is summarized below. The potential development includes the redevelopment remaining from the approved development permitted in the LCP and the development that has been granted but not built. A detailed description of each of the Major Development Zones including the parcels involved and potential development is provided below.

Major Development Zone (MDZ) 1

Parcels: 1, 3, 112, 113, BR, 7, 8, 9, 111, 10, 12, 13, FF (proposed to become Parcel 14), 15, 18, 20, 95, 100, 101, 102, 103, 104, DS, LLS, AL-1, K-6

Potential Development available within this Zone -

- Residential Units: 1,497 dwelling units
- Hotel: 288 rooms
- Retail: 53,000 square feet of retail spaces
- Restaurant: 340 restaurant seats
- Congregate Care: 15 dwelling units

Major Development Zone (MDZ) 2

Parcels: 27, 28, 30, 33, 91, 97, 140, 141, 145, IR, H, JS, NR (proposed to be merged into Parcel 33), 125, 128, 129, OT (proposed to become Parcel 147), P, Q, RR, 21, 22, GR

Potential Development available within this Zone –

- Residential Units: 292 dwelling units
- Hotel: 217 rooms
- Retail: 42,000 square feet of retail space
- Restaurant: 410 restaurant seats
- Congregate Care: 114 dwelling units
- Fire Station Expansion

Major Development Zone (MDZ) 3

Parcel: 40, 94, 130, 131, 132, 133, 134, SS, 41, 42, 43, 44, 45 (new parcel created from a portion of Parcel 44), 75, 76, 150, UR, 47, 48, 49, 50, 52, 53, 54, 77, EE, GG (proposed to be merged into Parcel 52), 55, 56, 61, BB, W, 62, 64, 65, XT, 51, 200

Potential Development available within this Zone

- Residential Units: 255 dwelling units
- Retail: 178,741 square feet of retail space
- Restaurant: 573 restaurant seats
- Office: 26,000 square feet of office space
- Dry Stack: 375 spaces
- Library: 3,000 square feet
- Ferry Terminal Site

Figure 1 illustrates the boundaries of the MDZs. A summary of the overall development potential is included below:

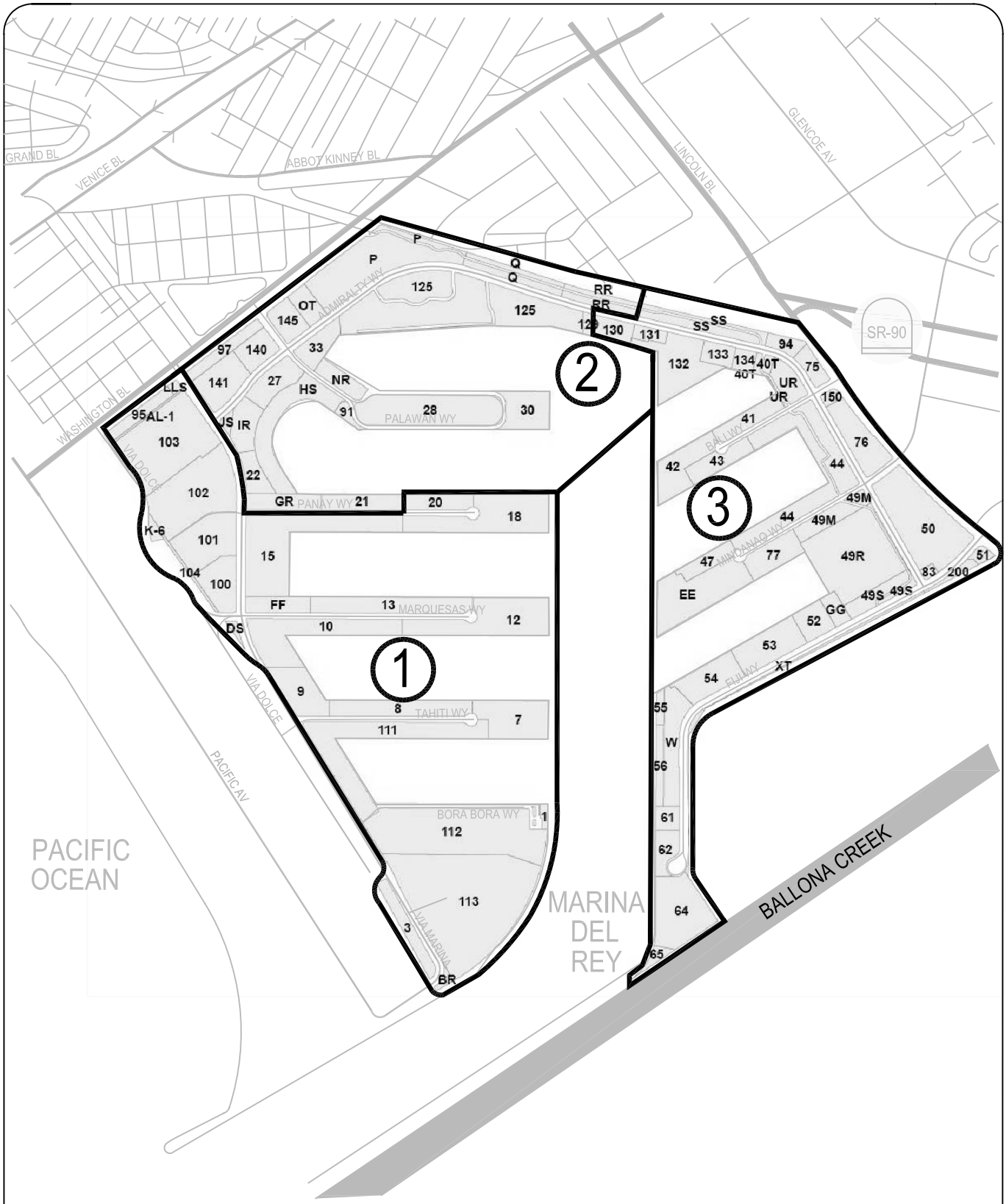
Proposed Local Coastal Program Buildout - Overall Total Potential Development

- Residential Units: 2,044 dwelling units
- Hotel: 505 rooms
- Visitor-Serving Commercial: 273,741 square feet of retail space
- Restaurant: 1,323 restaurant seats
- Congregate Care: 129 dwelling units
- Office: 26,000 square feet of office space
- Dry Stack: 375 spaces
- Library: 3,000 square feet
- Ferry Terminal Site
- Fire Station Expansion

The locations of the Proposed LCP Pipeline Projects are shown in Figure 2. The LCP Pipeline Projects include the following five projects:

Pipeline Projects

- Parcels 10/FF: 536 dwelling units replacing 136 dwelling units, a net total of 390 dwelling units
- Parcels 33/NR: 292 dwelling units, 32,400 square feet of retail space, 323 restaurant seats and 69 public parking spaces, replacing 191 public parking spaces



LEGEND:

① ② ③ - MAJOR DEVELOPMENT ZONES (MDZ)

FF, 100, 101... - PARCEL NUMBERS

N
Not to scale

FIGURE 1
MAJOR DEVELOPMENT ZONES (MDZ) AND INCLUDED PARCELS IN MARINA DEL REY

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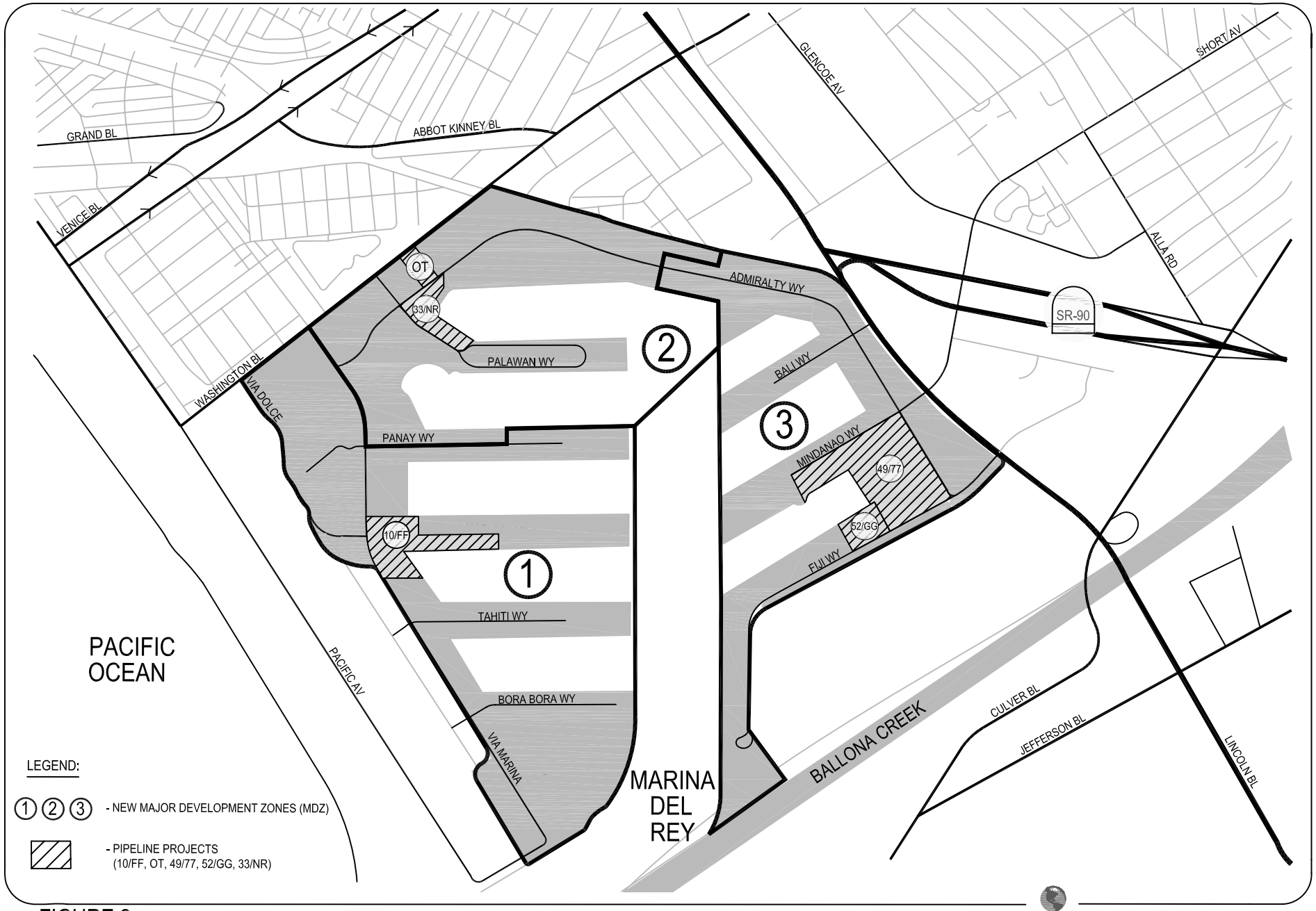

FIGURE 2
LOCATION OF PROPOSED LOCAL COASTAL PROGRAM (LCP) AMENDMENT PIPELINE PROJECTS

RAJU Associates, Inc.

- Parcels OT/21: Parcel OT includes 114-room senior active accommodations, 5,000 square feet of retail space and 92 public parking spaces. OT currently has 186 public parking spaces, 92 of which will remain in OT and 94 spaces will be built in Parcel 21; Parcel 21 includes a net increase of 6,000 square feet of office space, a net decrease of 6,000 square feet of health club and 94 public parking spaces (as a replacement for the 94 spaces from OT), Parcel 21 also includes 2,300 square feet of office space and 5,000 square feet of yacht club transferred from Parcel 20.
- Parcels 49/77: Option 1 -135,000 square feet of visitor-serving commercial space; Option 2 – 116,495 square feet of visitor-serving commercial space and 255 dwelling units; Option 3 – Up to 26,000 square feet of office use (Department of Beaches and Harbor Administration Building) with either Option 1 or Option 2.
- Parcels 52/GG: 375 dry stack spaces, 3,080 square feet of office use and 3,350 square feet of Sheriff's boatwright shop (existing).

STUDY SCOPE

The scope of work for this study was developed in conjunction with the County of Los Angeles Department of Beaches and Harbors staff. The base assumptions, technical methodologies and geographic coverage of the study were all identified as part of the study approach. The study is directed at the analysis of potential traffic conditions on the street system produced by the Proposed LCP Amendment (Pipeline Projects) in comparison to future conditions with the approved LCP Project and includes an analysis of the following scenarios:

- Existing (2009) Conditions - The analysis of existing traffic conditions is intended to provide a basis for the remainder of the study. The existing conditions analysis includes an assessment of streets, traffic volumes, and operating conditions. A comparison to the year 1991 traffic counts and operations at the same analysis locations is also provided in this section.

- Future Ambient (2020) Conditions - Future traffic conditions without the Project have been developed for the year 2020. The objective of this analysis is to project future traffic growth and operating conditions, which could be expected to result from regional growth in the vicinity of the study area by the year 2020. These operating conditions are then compared to the Future Ambient (2010) conditions from the 1991/1994 DKS Study to provide a comparative assessment of future ambient conditions in 2020 in relation to that projected for 2010 in the 1991/1994 DKS Study.

- Cumulative (2020) Conditions – The net traffic expected to be generated by the related projects is estimated and added to the Future Ambient (2020) traffic forecasts. Operating

conditions at all locations are determined. The operating conditions are compared to the Cumulative (2010) Conditions (with no Marina Development) from the 1991/1994 DKS Study to determine if cumulative conditions would be similar to or better than those projected in the approved LCP traffic studies.

- Future Ambient (2020) with LCP Amendment Pipeline Project Conditions - The net traffic expected to be generated by the LCP Amendment including the five Pipeline Projects is estimated and added to the Future Ambient (2020) traffic forecasts and operating conditions are determined. These operating conditions with and without improvements are compared to the Future Ambient (2010) Conditions from the 1991/1994 DKS Study to assess the projected conditions under the proposed LCP Amendment in comparison to the Future Ambient Conditions previously approved by the Los Angeles County Board of Supervisors and the California Coastal Commission.

- Future Ambient (2020) with Proposed LCP Buildout Conditions - The net traffic expected to be generated by only the Proposed LCP Buildout Conditions (including the Pipeline Projects) is estimated and added to the Future Ambient (2020) traffic forecasts. Operating conditions with and without improvements at all analysis locations are determined. These operating conditions are compared to the Future (2010) Conditions with the LCP Approved Project with and without mitigations from the 1991/1994 DKS Study to determine if they would function similar to or better than those projected in the approved LCP traffic studies.

- Cumulative (2020) with LCP Amendment Pipeline Project Conditions - The net traffic expected to be generated by the LCP Amendment including the five Pipeline Projects is estimated and added to the Cumulative (2020) traffic forecasts and operating conditions are determined. These operating conditions with and without improvements are compared to the Cumulative (2010) Conditions (with no Marina Development) from the 1991/1994 DKS Study to assess the projected cumulative conditions under the proposed LCP Amendment in comparison to the Cumulative Conditions previously approved by the Los Angeles County Board of Supervisors and the California Coastal Commission.

- Cumulative (2020) with Proposed LCP Buildout Conditions - The net traffic expected to be generated by only the Proposed LCP Buildout Conditions (including the Pipeline Projects) is estimated and added to the Cumulative (2020) traffic forecasts. Operating conditions with and without improvements at all analysis locations are determined. These operating conditions are compared to the Cumulative (2010) Conditions (with no Marina Development) from the 1991/1994 DKS Study to determine if they would function similar to or better than those projected in the approved LCP traffic studies.

The same 19 intersections within Marina del Rey and City of Los Angeles that were analyzed in the original Marina del Rey Local Coastal Plan Traffic Study, January 1991, and Marina del Rey Local Coastal Plan Traffic Study Addendum, May 1994, prepared by DKS Associates, plus an additional intersection (Washington Boulevard/Palawan Way) were chosen for analysis. All of the 19 previously studied intersections are controlled by traffic signals, with the exception of the intersections of Via Marina/Bora Bora Way which is stop-controlled on the minor approaches (Bora Bora Way). Washington Boulevard/Palawan Way is also stop-controlled along Palawan Way.

The following intersections, illustrated in Figure 3, along with the jurisdiction they belong to, were analyzed for the scenarios described earlier:

1. Via Marina-Ocean Avenue / Washington Boulevard (Los Angeles County, City of Los Angeles)
2. Via Marina / Admiralty Way (Los Angeles County)
3. Via Marina / Panay Way (Los Angeles County)
4. Via Marina / Marquesas Way (Los Angeles County)
5. Via Marina / Tahiti Way (Los Angeles County)
6. Via Marina / Bora Bora Way (unsignalized) (Los Angeles County)
7. Palawan Way / Admiralty Way (Los Angeles County)
8. Lincoln Boulevard / Washington Boulevard (City of Los Angeles/Caltrans)
9. Lincoln Boulevard / Marina (SR-90) Expressway (City of Los Angeles/Caltrans)
10. Admiralty Way / Bali Way (Los Angeles County)
11. Lincoln Boulevard / Bali Way (Los Angeles County, City of Los Angeles, Caltrans)
12. Admiralty Way / Mindanao Way (Los Angeles County)
13. Lincoln Boulevard / Mindanao Way (Los Angeles County, City of Los Angeles/Caltrans)
14. Admiralty Way / Fiji Way (Los Angeles County)
15. Lincoln Boulevard / Fiji Way (Los Angeles County, City of Los Angeles/Caltrans)
16. Mindanao Way / Marina (SR-90) Expressway Eastbound (City of Los Angeles/Caltrans)
17. Mindanao Way / Marina (SR-90) Expressway Westbound (City of Los Angeles/Caltrans)
18. Culver Boulevard / Jefferson Boulevard (City of Los Angeles)
19. Lincoln Boulevard / Jefferson Boulevard (City of Los Angeles/Caltrans)
20. Washington Boulevard / Palawan Way (unsignalized) (City of Los Angeles, Los Angeles County)

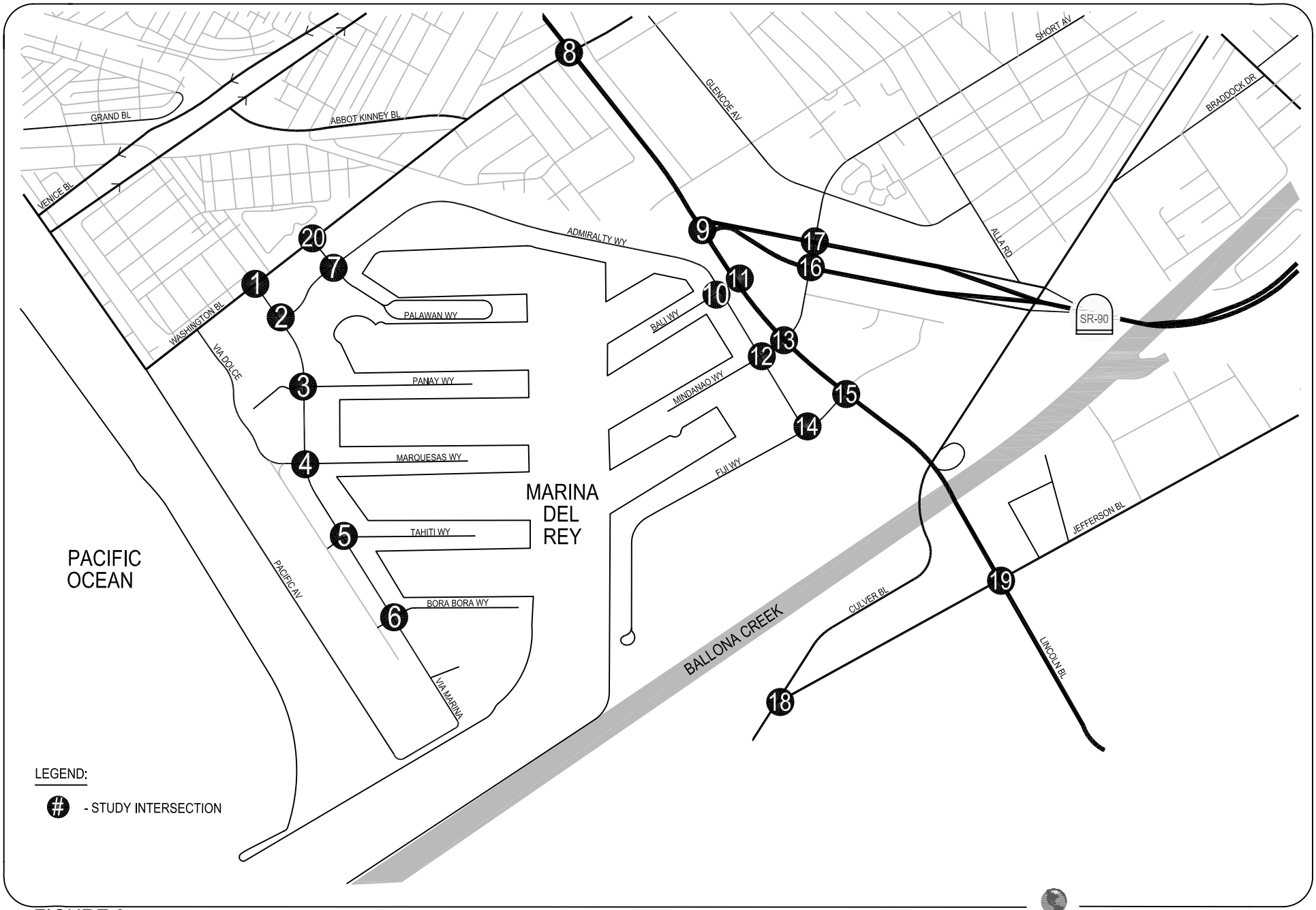

FIGURE 3
LOCATION OF STUDY INTERSECTIONS

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ORGANIZATION OF REPORT

An executive summary presenting key details of the study is provided at the beginning of this report. The rest of the report is divided into seven chapters. Chapter I is this introduction and provides details of the various elements of the study. Chapter II describes the existing circulation system, traffic volumes, and traffic conditions within the study area. A comparison to traffic conditions presented in the approved LCP traffic studies is also presented in the chapter. The methodology to obtain Future Year 2020 traffic volumes without the Proposed Project are described and applied in Chapter III. Relevant comparisons to corresponding scenarios in the 1991/1994 DKS Study is also provided. Chapter IV presents assessment of traffic conditions with the Proposed Amendment Project (Pipeline Projects only) as well as the Proposed LCP Buildout conditions. The potential differences in traffic conditions due to the Proposed Amendment Project (Pipeline Projects) as well as the proposed LCP Buildout relative to future ambient conditions with and without approved LCP Project in the approved LCP traffic studies (1991/94 DKS Study) are also presented in Chapter IV. Cumulative conditions without and with the Proposed Project (Pipeline Projects) as well as Proposed LCP Buildout (including Pipeline Projects) are assessed and compared to the Cumulative Conditions (without any Marina Development) presented in the approved 1991/94 DKS Study in Chapter V. A description and assessment of the transportation improvement measures being advanced as part of the Proposed LCP Amendment Project is presented in Chapter VI. A summary of the analysis and conclusions is included in Chapter VII. Appendices to this report include details of the technical analysis and are presented in Volume II of this Study Report under a separate cover.

II. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions within the study area. The assessment of conditions relevant to this study includes an inventory of the street system, traffic volumes on these facilities, and operating conditions at key intersections. A detailed description of these elements is presented in this chapter.

STUDY AREA

Marina del Rey is in the unincorporated area of Los Angeles County and is located in the western section of the Los Angeles Metropolitan Basin between the coastal communities of Venice and Playa del Rey. The Marina del Rey area covers approximately 943 land and water acres and is operated by the County of Los Angeles Department of Beaches and Harbors. The study area for this project is bounded by Washington Boulevard on the north, Jefferson Boulevard on the south, Lincoln Boulevard on the east and the Pacific Ocean on the west. The Marina (SR-90) Freeway provides access to Marina del Rey via Lincoln Boulevard. The San Diego (I-405) Freeway is located approximately 2.25 miles east of Marina del Rey, the Santa Monica (I-10) Freeway is located approximately 3 miles north of Marina del Rey, and the Glenn M Anderson (I-105) Freeway is located approximately 4 to 5 miles south of Marina del Rey.

EXISTING STREET SYSTEM

The existing street system within the study area consists of a regional highway system including major and secondary arterials and a local street system including collectors and local streets. A description of the regional and local access and circulation offered by the various roadways follows.

The Marina Expressway/Freeway (SR-90), San Diego (I-405) Freeway, Santa Monica (I-10) Freeway and Glenn M Anderson (I-105) Freeway provide the primary regional access to the study area. The major and other arterial streets used to access the study area include Admiralty Way,

Via Marina Way, Mindanao Way, Lincoln Boulevard, Washington Boulevard, Jefferson Boulevard, and Culver Boulevard. Bali Way, Fiji Way, Palawan Way, Panay Way, Marquesas Way, Tahiti Way, and Bora Bora Way provide direct access and local circulation. Brief descriptions of these facilities serving the study area follows.

- Admiralty Way – Admiralty Way is a secondary highway that traverses generally in a north-south direction from Via Marina to Fiji Way. The posted speed limit is 40 miles per hour. This roadway generally offers four travel lanes, two lanes in each direction, with a raised median and left-turn lanes at key intersections. On-street parking is not allowed on either side of the street along this roadway.

- Via Marina – Via Marina is a north-south secondary highway that serves the western portion of Marina del Rey and extends from Washington Boulevard south to the water entrance within the Marina. North of Washington Boulevard, this road is called Ocean Avenue. It generally provides two to three travel lanes in each direction, with left-turn lanes at key intersections. Parking is not allowed on either side of this street within the Marina. The posted speed limit along this facility is 40 miles per hour.

- Palawan Way – Palawan Way is a local roadway that provides connectivity from Washington Boulevard to Admiralty Way and points south and traverses in a north-south direction. It provides two travel lanes in each direction between Washington Boulevard and Admiralty Way. Palawan Way also provides access to the Marina del Rey Basin D and Basin E areas. The posted speed limit is 30 miles per hour. On-street parking is generally not allowed on either side of the street within the stretch between Washington Boulevard and Admiralty Way. Palawan Way south of Admiralty Way is a mole road maintained by Los Angeles County Department of Beaches and Harbors (DBH).

- Bali Way – Bali Way is a short local roadway that traverses in an east-west direction. The posted speed limit is 30 miles per hour. Bali Way provides connectivity from Lincoln Boulevard to Admiralty Way and points west and provides access to the Marina del Rey Basin F and Basin G areas. This roadway offers two lanes in each direction between Lincoln Boulevard and Admiralty Way. On-street parking is not allowed on either side of the street within that stretch. Bali Way west of Admiralty Way is a mole road maintained by DBH.

- Mindanao Way – Mindanao Way is a secondary arterial roadway that traverses in an east-west direction. Mindanao Way provides access to Burton Chase Park, the Marina del Rey Basin G berths, the Marina Freeway and points east. The posted speed limit is 30 miles per hour. The roadway generally offers four travel lanes, two lanes in each direction, with a raised central median between Admiralty Way and Marina Freeway. Within the study area, on-street parking is generally not allowed on either side of the street. Mindanao Way, west of Admiralty Way, is a mole road maintained by DBH.

- Fiji Way – Fiji Way is a local roadway and traverses in an east-west direction. This roadway provides four travel lanes, two lanes in each direction, with a raised central median between Lincoln Boulevard and Admiralty Way. Within the study area, on-street parking is not allowed on either side of the street. The posted speed limit along this facility is 35 miles per hour.

- Panay Way – Panay Way is a local roadway that traverses in an east-west direction and provides access to Marina del Rey Basin C and Basin D areas. It provides two travel lanes, one lane in each direction, with a raised central median. Parking is not allowed on either side of the street. The posted speed limit is 30 miles per hour. Panay Way is a mole road maintained by the DBH.

- Marquesas Way – Marquesas Way is a local roadway that traverses in an east-west direction and provides access to the Marina del Rey Basin B and Basin C areas. It provides two travel lanes, one lane in each direction, with raised central median. No parking is allowed on either side of the street. The posted speed limit is 30 miles per hour. Marquesas Way, east of Admiralty Way is a mole road maintained by the DBH.

- Tahiti Way – Tahiti Way is a local roadway that traverses in an east-west direction and provides access to the Marina del Rey Basin A and Basin B areas. It provides two travel lanes, one lane in each direction, with a raised central median. Parking is allowed on both sides of the street. The speed limit is 25 miles per hour. Tahiti Way east of Admiralty Way is a mole road maintained by the DBH.

- Bora Bora Way – Bora Bora Way is an undivided private street that traverses in an east-west direction and provides access to the Marina del Rey Basin A area. It provides two travel lanes, one lane in each direction. Parking is allowed on the south side of the street. The speed limit is 25 miles per hour.

- Lincoln Boulevard – Lincoln Boulevard is a major arterial roadway that runs in a north-south direction across several jurisdictions. The posted speed limit is 40 miles per hour in the vicinity of the study area. Within the study area, the roadway generally offers six travel lanes, three lanes in each direction with left-turn lanes at all intersections. Generally, no parking is allowed along many stretches of this roadway within the study area except between Maxella Avenue and north of Washington Boulevard.

- Washington Boulevard – Washington Boulevard is a major arterial roadway that traverses in an east-west direction. This roadway offers four travel lanes, two lanes per direction, with a central left-turn median. Restricted parking is allowed along many stretches of this roadway, generally, except at major intersections where turn lanes are provided. The posted speed limit is 35 miles per hour.

- Jefferson Boulevard – Jefferson Boulevard is a major arterial roadway that traverses in an east-west direction across several jurisdictions and provides six to seven travel lanes, three lanes in the westbound direction and three to four lanes in the eastbound direction. Within the study area, this roadway provides connection between Culver Boulevard and the I-405 northbound and southbound on-off ramps and points east. Restricted parking is available for a short stretch on either side of the street between Inglewood Boulevard and Mesmer Avenue. The posted speed limit along this facility is 45 miles per hour.

- Culver Boulevard – Culver Boulevard is a major arterial roadway that traverses in a north/east-south/west direction. This roadway offers four travel lanes, two lanes per direction between Lincoln Boulevard and Marina Freeway. Restricted parking is allowed along many stretches of this roadway, generally, except at major intersections where turn lanes are provided. Within the study area, the posted speed limit is 40 miles per hour.

The existing lane configurations of the analyzed intersections are included in Appendix A.

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following sections present the existing intersection peak hour traffic volumes, a description of the methodology utilized to analyze the intersection operating conditions, and the resulting level of service conditions at each of the study locations.

Existing Traffic Volumes and Comparison to Base (Existing) Traffic Counts in 1991/1994 DKS Study

Weekday morning and evening peak hour traffic counts were compiled from data collected at the 20 analyzed intersections in May 2009 and in January 2010. These traffic volumes reflect typical weekday operations during current conditions. The raw data showing the counts are attached in Appendix B. The existing traffic volumes during AM and PM peak hours are attached in Appendix C.

Table 1 provides a comparison of existing 2009 traffic counts to the base traffic counts presented in the 1991/1994 DKS Study. It can be observed from this table that the current traffic in the vicinity of the Marina has decreased in recent years. The 2009 counts have decreased by an amount equivalent to 5% in the morning peak hour and 8% in the evening peak hour compared to 1991/1994 counts on an overall basis.

Level of Service Methodology

Level of Service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. LOS D is typically recognized as the minimum acceptable level of service in urban areas. The Level of Service definitions for signalized intersections is provided in Table 2.

All of the analyzed intersections are controlled by traffic signals, with the exception of the intersections of Via Marina/Bora Bora Way and Washington Boulevard/Palawan Way. At these locations, stop signs on the minor approaches along Bora Bora Way and Palawan Way, respectively, currently provide the required traffic control.

TABLE 1
COMPARISON OF EXISTING PEAK HOUR TRAFFIC VOLUMES

Intersection		AM Peak Hour 1991/1994 Study [1] Base (Existing) Volumes	AM Peak Hour 2009 Study Existing Counts	AM Peak Hour Traffic Growth 1994 to 2009 Vol. Diff.	AM Peak Hour Traffic Growth 1994 to 2009 Growth
1 Via Marina	Washington Bl	2,835	2,570	-265	-9%
2 Via Marina	Admiralty Way	2,542	2,781	239	9%
3 Via Marina	Panay Way	2,036	1,702	-334	-16%
4 Via Marina	Marquesas Way	1,739	1,342	-397	-23%
5 Via Marina	Tahiti Way	1,162	1,026	-136	-12%
6 Via Marina	Bora Bora Way	850	737	-113	-13%
7 Palawan Way	Admiralty Way	2,640	2,215	-425	-16%
8 Lincoln Bl	Washington Bl	6,100	5,740	-360	-6%
9 Lincoln Bl	Marina Expressway	4,675	4,771	96	2%
10 Admiralty Way	Bali Way	2,639	2,315	-324	-12%
11 Lincoln Bl	Bali Way	3,630	3,365	-265	-7%
12 Admiralty Way	Mindanao Way	2,538	2,239	-299	-12%
13 Lincoln Bl	Mindanao Way	4,659	4,399	-260	-6%
14 Admiralty Way	Fiji Way	1,248	1,407	159	13%
15 Lincoln Bl	Fiji Way	4,555	4,239	-316	-7%
16 Mindanao Way	Marina Expressway EB	3,150	3,070	-80	-3%
17 Mindanao Way	Marina Expressway WB	2,515	2,809	294	12%
18 Culver Bl	Jefferson Bl	3,868	3,656	-212	-5%
19 Lincoln Bl	Jefferson Bl	5,441	5,232	-209	-4%
20 Palawan Way	Washington Bl	n/a	1,917	-	-
	Total [2]	58,822	55,615	-3,207	-5%

Intersection		PM Peak Hour 1991/1994 Study [1] Base (Existing) Volumes	PM Peak Hour 2009 Study Existing Counts	PM Peak Hour Traffic Growth 1994 to 2009 Vol. Diff.	PM Peak Hour Traffic Growth 1994 to 2009 Growth
1 Via Marina	Washington Bl	3,358	3,148	-210	-6%
2 Via Marina	Admiralty Way	3,289	3,293	4	0%
3 Via Marina	Panay Way	2,385	1,826	-559	-23%
4 Via Marina	Marquesas Way	1,885	1,393	-492	-26%
5 Via Marina	Tahiti Way	1,527	1,022	-505	-33%
6 Via Marina	Bora Bora Way	1,103	813	-290	-26%
7 Palawan Way	Admiralty Way	4,116	3,307	-809	-20%
8 Lincoln Bl	Washington Bl	5,358	6,407	1,049	20%
9 Lincoln Bl	Marina Expressway	5,358	5,089	-269	-5%
10 Admiralty Way	Bali Way	3,876	2,953	-923	-24%
11 Lincoln Bl	Bali Way	4,635	3,730	-905	-20%
12 Admiralty Way	Mindanao Way	3,316	3,266	-50	-2%
13 Lincoln Bl	Mindanao Way	5,400	5,101	-299	-6%
14 Admiralty Way	Fiji Way	2,124	1,789	-335	-16%
15 Lincoln Bl	Fiji Way	5,988	5,471	-517	-9%
16 Mindanao Way	Marina Expressway EB	3,549	3,637	88	2%
17 Mindanao Way	Marina Expressway WB	3,440	3,555	115	3%
18 Culver Bl	Jefferson Bl	4,184	3,641	-543	-13%
19 Lincoln Bl	Jefferson Bl	6,828	6,187	-641	-9%
20 Palawan Way	Washington Bl	n/a	2,070	-	-
	Total [2]	71,719	65,628	-6,091	-8%

[1] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994
[2] For purposes of comparison, volume totals do not include intersection #20 - Palawan Way/Washington Bl.

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Volume/Capacity Ratio	Definition
A	0.000 - 0.600	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	>0.900 - 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

Source: Transportation Research Board, *Transportation Research Circular No. 212, Interim Materials on Highway Capacity* , 1980.

The "Critical Movement Analysis (CMA) - Planning" (Transportation Research Board, 1980) method of intersection capacity analysis was used to determine the intersection volume to capacity (V/C) ratio and corresponding level of service at the signalized intersections. The CALCADB software package developed by the City of Los Angeles Department of Transportation (LADOT) was used to implement the CMA methodology. This software calculates the critical volumes, volume to capacity ratios and levels of service for each intersection using specified geometry, signal phasing and availability of ATSAC at each of the analysis locations, and allows for interactive modifications to basic inputs for identification of improvement measures and other sensitivity tests.

All of the signalized study intersections are currently controlled by the City of Los Angeles' Automated Traffic Surveillance and Control (ATSAC) System and Adaptive Traffic Control System (ATCS). A capacity increase of 10% (0.07 V/C adjustments for ATSAC and 0.03 V/C adjustments for ATCS) was applied to reflect the benefits of ATSAC/ATCS control at these intersections.

Existing (Year 2009) Levels of Service and Comparison to Base Existing Conditions from 1991-1994 DKS Study

The existing traffic volumes presented in Appendix C for AM and PM peak hours, were used in conjunction with the level of service methodologies described above, and the current intersection characteristics illustrated in Appendix A, to determine the existing operating conditions at the analyzed intersections.

Table 3 summarizes the results of the intersection capacity analysis for existing conditions at each of the 20 intersections in the study area. The table indicates the existing V/C ratio during the morning and evening peak hours and the corresponding LOS at the study intersections. The results for AM and PM peak hours are also shown in Figures 4 and 5, respectively. From Table 3, it can be observed that all of the study intersections are currently operating at LOS D or better during both the morning and evening peak hours.

Table 4 provides a comparison of 2009 existing conditions and the base/existing conditions from the 1991/1994 DKS Study. It can be observed from the table, in the 1991/1994 DKS Study, 16 of the 19 study intersections operated at LOS D or better during the morning peak hour and 10 of the 19 study intersections operated at LOS D or better during the evening peak hour. The remaining intersections were determined to be operating at LOS E or F in the 1991/1994 Study. In the existing year 2009 conditions, all locations were projected to be operating at LOS D or better.

TABLE 3
SUMMARY OF LEVEL OF SERVICE ANALYSIS - EXISTING CONDITIONS

#	INTERSECTION	AM PEAK HOUR		PM PEAK HOUR	
		V/C	LOS	V/C	LOS
1	Via Marina & Washington Boulevard	0.53	A	0.72	C
2	Via Marina & Admiralty Way	0.44	A	0.77	C
3	Via Marina & Panay Way	0.37	A	0.29	A
4	Via Marina & Marquesas Way	0.25	A	0.20	A
5	Via Marina & Tahiti Way	0.25	A	0.16	A
6	Via Marina & Bora Bora Way [1]	0.33	A	0.31	A
7	Palawan Way & Admiralty Way	0.40	A	0.67	B
8	Lincoln Boulevard & Washington Boulevard	0.72	C	0.79	C
9	Lincoln Boulevard & Marina Expressway	0.70	B	0.66	B
10	Admiralty Way & Bali Way	0.34	A	0.49	A
11	Lincoln Boulevard & Bali Way	0.40	A	0.52	A
12	Admiralty Way & Mindanao Way	0.47	A	0.66	B
13	Lincoln Boulevard & Mindanao Way	0.64	B	0.76	C
14	Admiralty Way & Fiji Way	0.20	A	0.36	A
15	Lincoln Boulevard & Fiji Way	0.50	A	0.73	C
16	Mindanao Way & Marina Expressway EB	0.61	B	0.77	C
17	Mindanao Way & Marina Expressway WB	0.39	A	0.53	A
18	Culver Boulevard & Jefferson Boulevard	0.84	D	0.90	D
19	Lincoln Boulevard & Jefferson Boulevard	0.54	A	0.73	C
20	Palawan Way & Washington Boulevard [1]	0.68	B	0.73	C

[1] Unsignalized intersection - stop-controlled on minor approach(es).

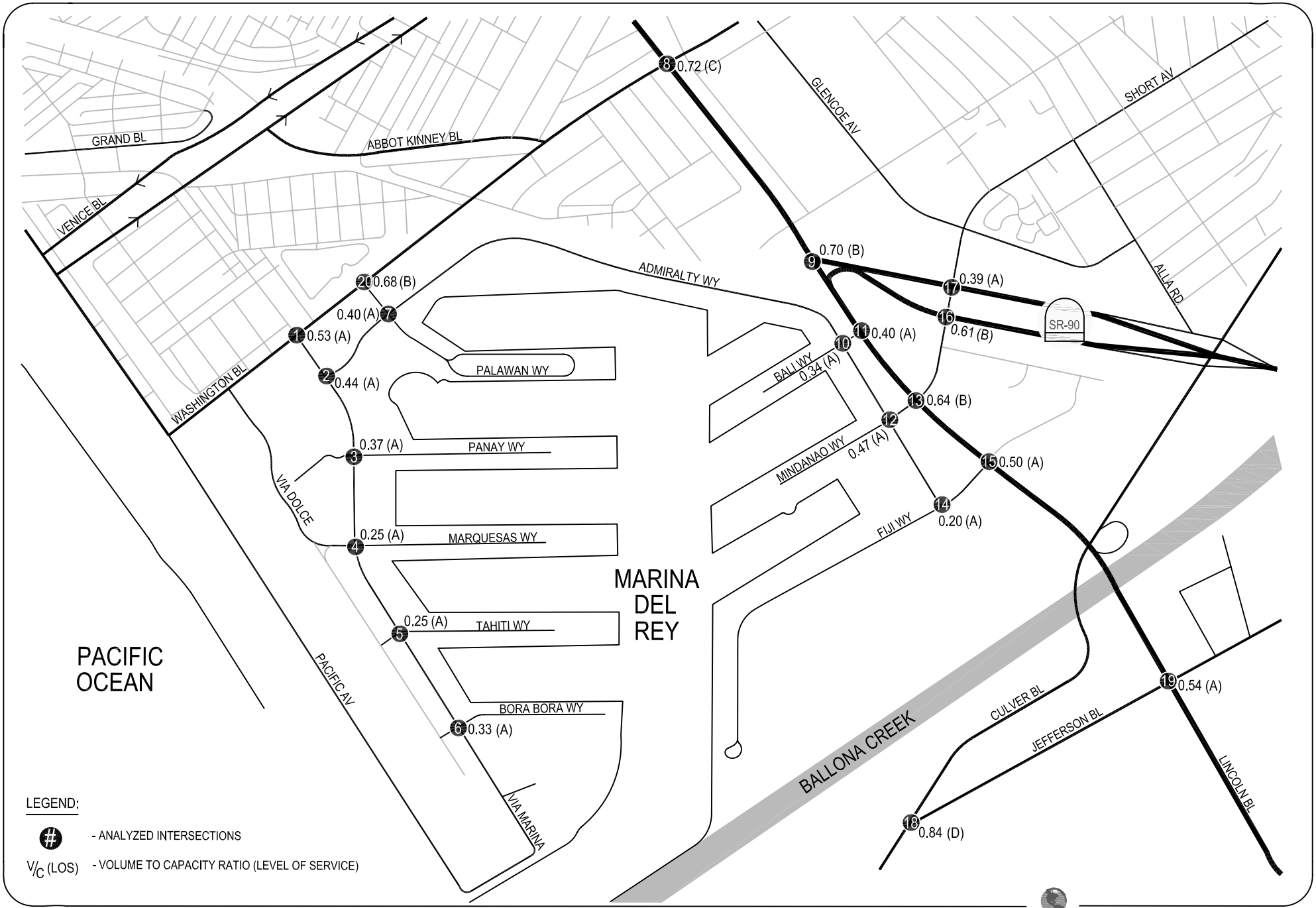

FIGURE 4
EXISTING (2009) LEVELS OF SERVICE - AM PEAK HOUR

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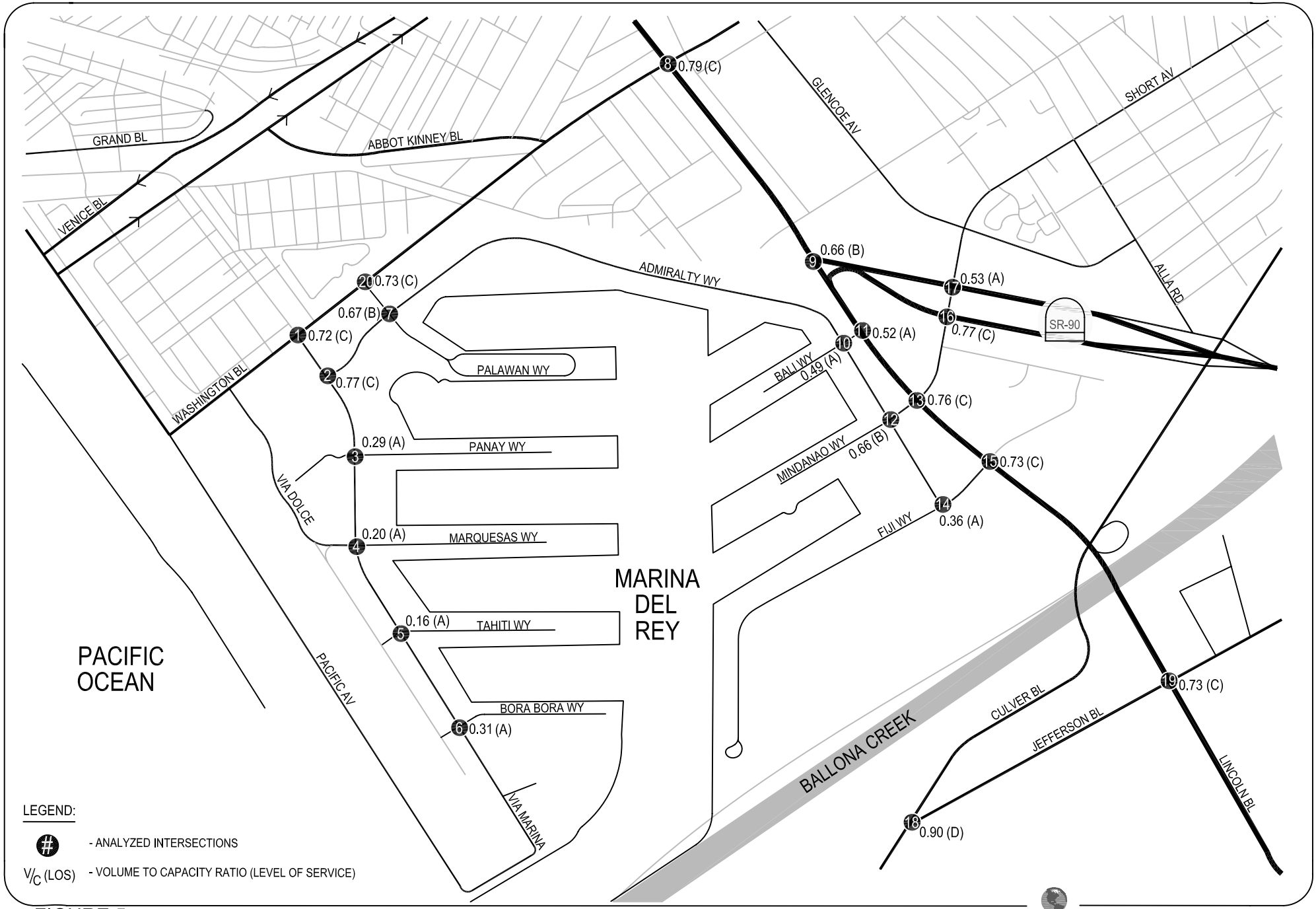

FIGURE 5
EXISTING (2009) LEVELS OF SERVICE - PM PEAK HOUR

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TABLE 4
COMPARISON OF EXISTING LEVELS OF SERVICE

Intersection		Peak Period	1991/1994 DKS Study [2] Existing Conditions V/C	1991/1994 DKS Study [2] Existing Conditions LOS	2009 Study Existing Conditions V/C	2009 Study Existing Conditions LOS
1 Via Marina	Washington Bl	AM	0.70	B	0.53	A
		PM	0.96	**E**	0.72	C
2 Via Marina	Admiralty Way	AM	0.51	A	0.44	A
		PM	0.83	D	0.77	C
3 Via Marina	Panay Way	AM	0.58	A	0.37	A
		PM	0.53	A	0.29	A
4 Via Marina	Marquesas Way	AM	0.33	A	0.25	A
		PM	0.39	A	0.20	A
5 Via Marina	Tahiti Way	AM	0.41	A	0.25	A
		PM	0.40	A	0.16	A
6 Via Marina	Bora Bora Way [1]	AM	0.35	A	0.33	A
		PM	0.33	A	0.31	A
7 Palawan Way	Admiralty Way	AM	0.68	B	0.40	A
		PM	1.06	**F**	0.67	B
8 Lincoln Bl	Washington Bl	AM	1.00	**E**	0.72	C
		PM	1.19	**F**	0.79	C
9 Lincoln Bl	Marina Expressway	AM	0.84	D	0.70	B
		PM	0.95	**E**	0.66	B
10 Admiralty Way	Bali Way	AM	0.58	A	0.40	A
		PM	0.99	**E**	0.55	A
11 Lincoln Bl	Bali Way	AM	0.57	A	0.40	A
		PM	0.82	D	0.52	A
12 Admiralty Way	Mindanao Way	AM	0.80	C	0.47	A
		PM	0.99	**E**	0.66	B
13 Lincoln Bl	Mindanao Way	AM	0.88	D	0.64	B
		PM	0.90	D	0.76	C
14 Admiralty Way	Fiji Way	AM	0.31	A	0.20	A
		PM	0.51	A	0.36	A
15 Lincoln Bl	Fiji Way	AM	0.58	A	0.50	A
		PM	0.83	D	0.73	C
16 Mindanao Way	Marina Expressway EB	AM	0.86	D	0.61	B
		PM	0.93	**E**	0.77	C
17 Mindanao Way	Marina Expressway WB	AM	0.59	A	0.39	A
		PM	0.81	D	0.53	A
18 Culver Bl	Jefferson Bl	AM	0.92	**E**	0.84	D
		PM	1.00	**E**	0.90	D
19 Lincoln Bl	Jefferson Bl	AM	1.01	**F**	0.54	A
		PM	0.99	**E**	0.73	C
20 Palawan Way	Washington Bl [1]	AM	n/a	**-**	0.68	B
		PM	n/a	**-**	0.73	C

[1] Unsignalized intersections - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

The table further indicates that all of the analyzed intersections under Existing (2009) conditions are operating at better V/C ratios and levels of service than those presented for Base Existing conditions in the1991/1994 DKS Study. These improved operations are due to decreased levels of traffic at these intersections as well as street improvements that have been completed since the 1991/1994 DKS Study was completed. Further, the inclusion of ATSAC and ATCS credit which allows a capacity increase of 0.10 also has contributed to projections of improved levels of service, currently, at the analysis intersections.

Capacity calculation worksheets for Existing (2009) conditions are provided in Appendix C of the report.

EXISTING TRANSIT CONDITIONS

Nine bus lines currently serve the study area. Three bus lines are operated by the Los Angeles County Metropolitan Transportation Authority (LACMTA), three bus lines are operated by the Culver City Bus (CC), two bus lines are operated by Santa Monica Big Blue Bus (SM) and one bus line is operated by the Los Angeles Department of Transportation (CE). These transit lines are described below:

- LACMTA 108 - Line 108 is a local east/west line that provides service from Marina del Rey to Pico Rivera and travels primarily along Via Marina, Admiralty Way and Mindanao Way within the study area. This line runs every day, including holidays, at a peak frequency of approximately 20-30 minutes during peak commute hours. The western terminus is at the intersection of Palawan Way/Washington Boulevard in Marina del Rey. The eastern terminus is at the intersection of Paramount Boulevard/Slauson Avenue in Pico Rivera.

- LACMTA 110 - Line 110 is a local east/west line that provides service from Playa Vista to Bell Gardens and travels primarily along Jefferson Boulevard within the study area. This line runs every day, including holidays, at a peak frequency of approximately 8-10 minutes during peak commute hours. The western terminus is at intersection of Playa Vista Drive/Jefferson Boulevard in Playa Vista. The eastern terminus is at the intersection of Granger Avenue/Florence Avenue in Bell Gardens.

- LACMTA 358 - Line 358 is a local, limited stop, east/west line that provides service from Marina Del Rey to Pico Rivera and travels primarily along Via Marina, Admiralty Way and Mindanao Way within the study area. This line runs Monday through Friday, at a frequency of 15-25 minutes during peak commute hours. The western terminus is at the intersection of Washington Boulevard and Palawan Way in Marina del Rey. The eastern terminus is at the intersection of Paramount Boulevard/Slauson Avenue in the City of Pico Rivera.

- CC Line 1 – Line 1 is a local east/west line that provides service from Venice through Culver City to West Los Angeles and travels primarily along Washington Boulevard in the vicinity of the study area. This line runs every day, including holidays, at a peak frequency of approximately 12 minutes during peak commute hours. The western terminus is at the intersection of Main Street/Windward Circle in Venice. The eastern terminus is at the intersection of Fairfax Avenue/Washington Boulevard in West Los Angeles.

- CC 2 – Culver City Bus Line 2 is a local east/west line that provides service from Venice High School to the Fox Hills Mall Transit Center and travels primarily along Lincoln Boulevard and Washington Boulevard within the study area. This line runs Monday through Friday at a frequency of approximately 60 minutes. Service is not provided on weekends and holidays.

- CC Line 7 – Line 7 is a recently added local east/west line that provides service from Marina del Rey to Culver City and travels primarily along Admiralty Way and Fiji Way within the study area. This line runs Monday through Saturday at a frequency of approximately 60 minutes. Service on Sundays and holidays is not provided. The western terminus is at Fisherman's Village in Marina del Rey. The eastern terminus is at the intersection of Culver Boulevard/Venice Boulevard in Culver City.

- SM 3 – Santa Monica Big Blue Bus Line 3 is a local north/south line that provides service from Westwood to Inglewood and travels primarily along Lincoln Boulevard within the study area. This line runs every day, including holidays, at a peak frequency of 10-12 minutes during peak commute hours. The northern terminus is at the University of California Los Angeles (UCLA) Ackerman Terminal in Westwood. The southern terminus is at the Metro Green Line Aviation Station in Inglewood.

- SM Rapid 3 – Santa Monica Bus Blue Bus Line Rapid 3 is a north/south "rapid bus" line that provides service from Santa Monica to Inglewood and travels primarily along Lincoln Boulevard within the study area. This line runs Monday through Friday at a frequency of 15 minutes with no midday service. Service is not provided on weekends and holidays. The northern terminus is at the intersection of 4th Street/Wilshire Boulevard in Santa Monica. The southern terminus is at the Metro Green Line Aviation Station in Inglewood.

- CE 437 – Line 437 is a LADOT Commuter Express line that provides service from Downtown Los Angeles to Marina del Rey and travels primarily along Via Marina, Admiralty Way and Mindanao Way within the study area. This line runs Monday through Friday at a peak frequency of approximately 15 minutes during peak commute hours. Service is not provided on weekends and holidays. The western terminus is at the intersection of Pacific Avenue/Washington Boulevard in Marina del Rey. The eastern terminus is at the intersection of San Pedro Street/Temple Street in Downtown Los Angeles.

These transit lines within the study area are illustrated in Figure 6.

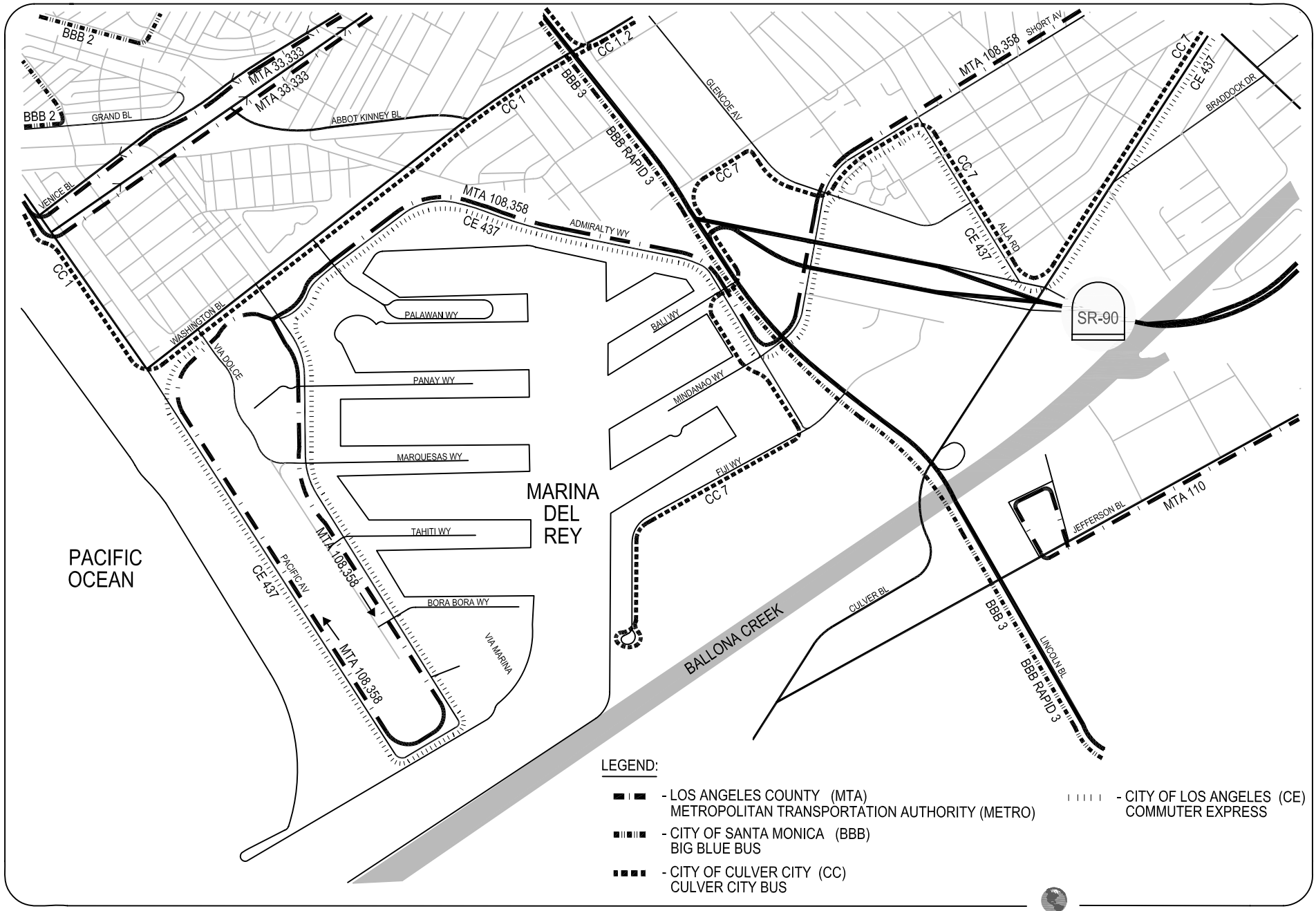

FIGURE 6
EXISTING TRANSIT LINES

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III. FUTURE AMBIENT TRAFFIC CONDITIONS

This chapter provides details of the development of travel forecasts for future ambient (2020) conditions and an assessment of the analysis of these forecasts. Appropriate comparisons to corresponding analyses from the 1991/1994 DKS Study are also presented in this chapter.

The estimates for future year (2020) ambient conditions traffic without the proposed LCP Amendment Project were first developed using estimates for natural "background" growth in area-wide trip making in the vicinity of the study area. Using these estimates of traffic volumes at each of the analysis intersections and the intersections lane geometry provided in Appendix A, intersection operating conditions were determined. A comparison to Ambient (2010) Conditions presented in the 1991/1994 DKS Study has been conducted and presented in this chapter.

Details of each of the above analysis and evaluation are presented in the following sections of this chapter.

AMBIENT (2020) TRAFFIC CONDITIONS

The assessment of Ambient (2020) Traffic Conditions involved the following tasks:

- Ambient (2020) Traffic projections
- Analysis of Ambient (2020) Traffic Conditions
- Comparison of Ambient (2020) Conditions to the Ambient (2010) Conditions presented in the 1991/1994 DKS Study

A brief discussion of each of the tasks in the previous page follows:

Future Ambient (2020) Traffic Projections

The Future Ambient (2020) traffic projections reflect growth in traffic from the natural "background" or ambient growth to reflect the effects of overall area-wide regional growth both within and outside the study area and the collective effects of many small developments.

Per historical traffic growth in the Marina, based on the County of Los Angeles Department of Public Works, traffic in the Marina was estimated to increase at a rate of about 0.6% per year. This growth rate was used to account for the ambient growth of traffic for intersections entirely in the Marina. Similarly, for the City of Los Angeles, traffic outside the Marina was estimated to increase at a rate of 0.5% per year.

The Ambient Growth factor of 0.5% per year was derived by examining the travel forecasts for base year (2003) and future year (2035) within and in the vicinity of the study area projected by the Southern California Association of Governments (SCAG) Regional Transportation Plan 2008 (RTP 2008) travel demand forecasting model, assessing the growth for the entire time period and dividing the same by the number of years of growth. Future increases in background traffic volumes due to regional growth and development are expected to continue at these rates. With the assumed completion date of 2020, the existing 2009 traffic volumes were adjusted upward by a factor of 6.6% for intersections entirely within the Marina and by 5.5% for all other external intersections. The resulting Future Ambient (2020) traffic volumes are attached in Appendix D.

Future Ambient (2020) Traffic Conditions Analysis

The Future Ambient (2020) without proposed project peak hour traffic volumes were analyzed at each of the study intersections to determine the V/C ratio and corresponding level of service. Table 5 presents the results of the Future Ambient (2020) (without project) traffic analysis. The results are also presented in Figures 7 and 8 for Ambient AM and PM peak hours, respectively. As indicated in the table, all 20 analyzed intersections in the morning peak hour and 19 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining one (Culver Boulevard / Jefferson Boulevard intersection) in the evening peak hour is projected to operate at LOS E.

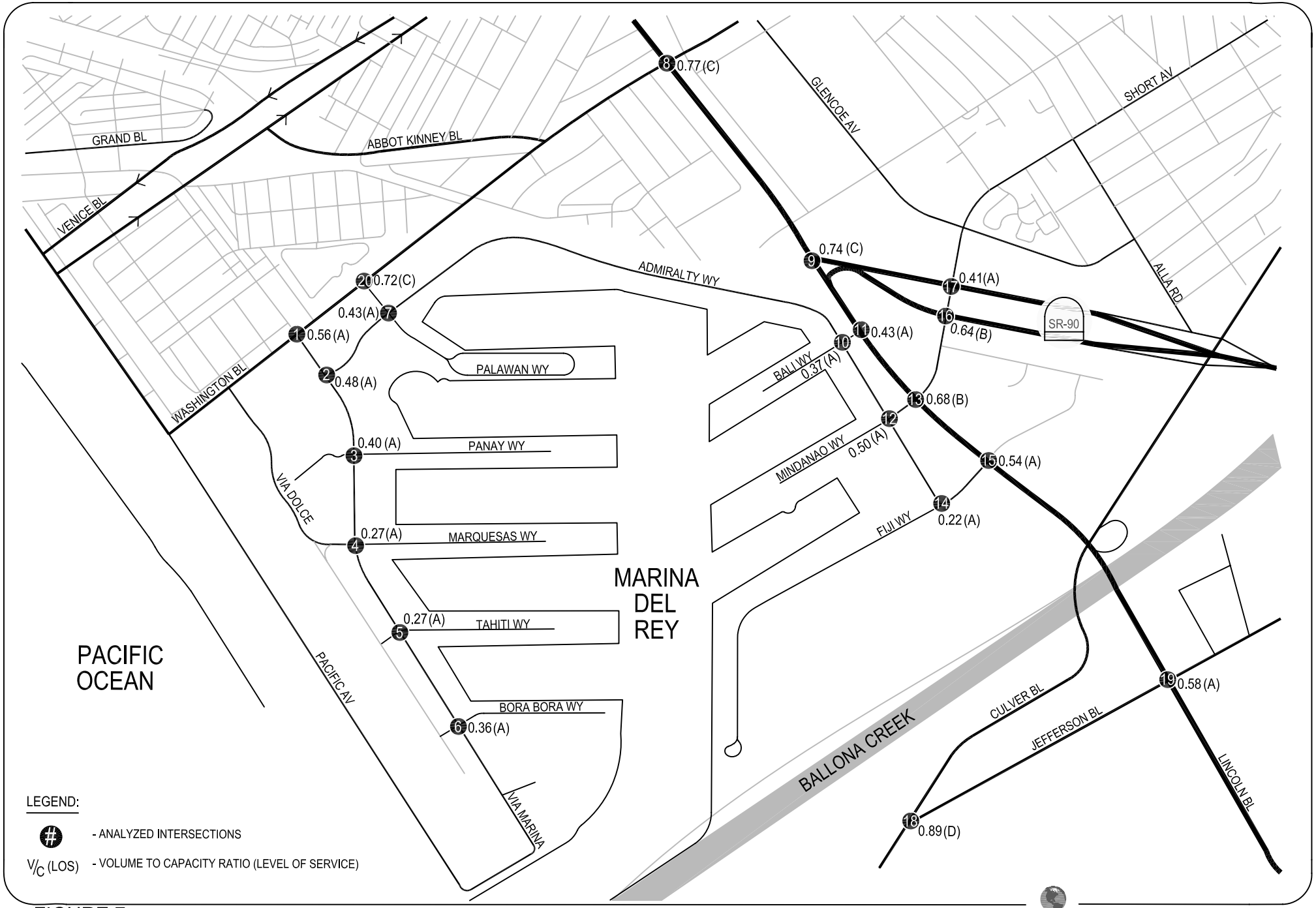

FIGURE 7
FUTURE AMBIENT (2020) LEVELS OF SERVICE - AM PEAK HOUR

RAJU Associates, Inc.

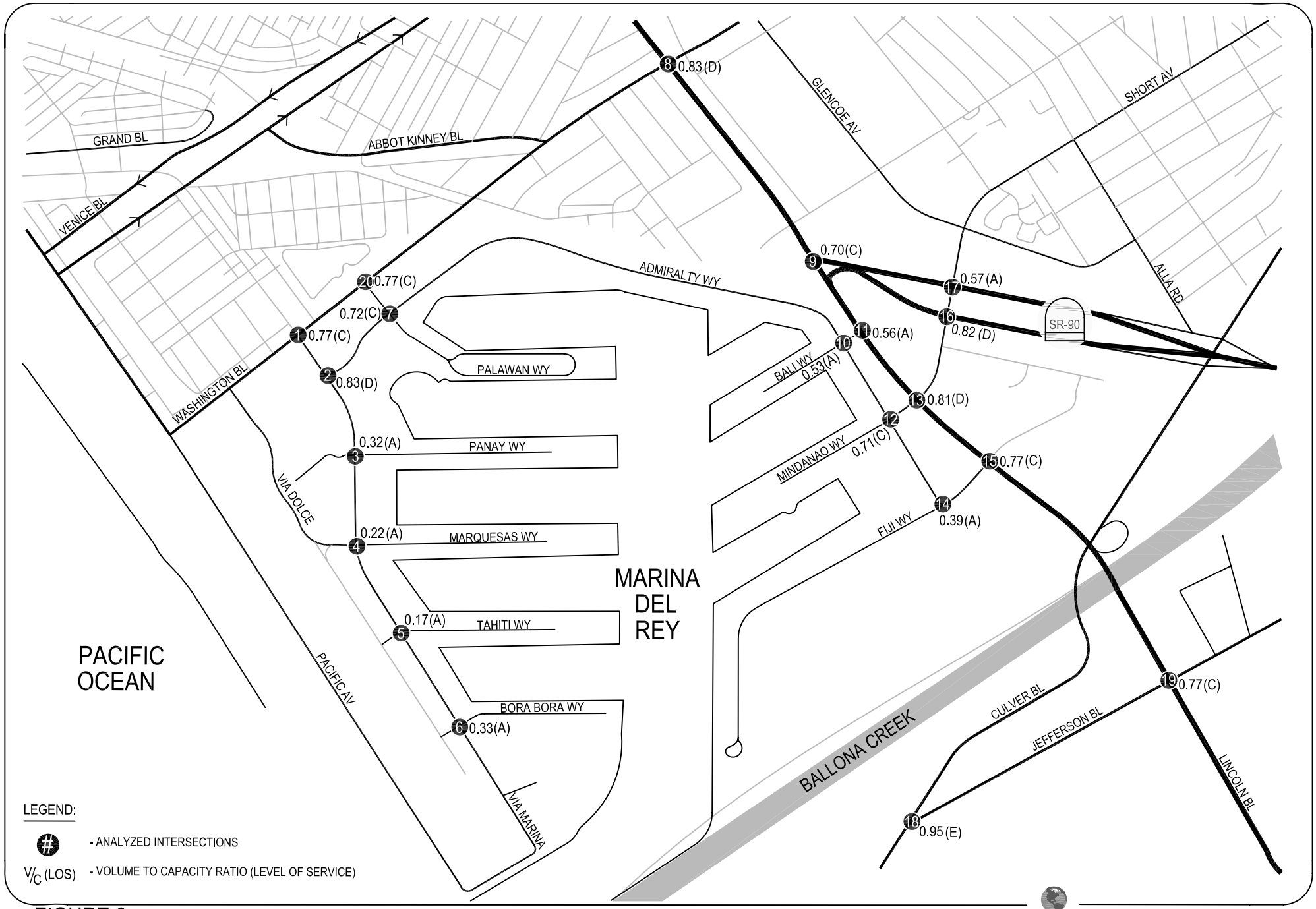

FIGURE 8
FUTURE AMBIENT (2020) LEVELS OF SERVICE - PM PEAK HOUR

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TABLE 5
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) CONDITIONS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Ambient (2010) Conditions V/C	LOS	2009 Study Ambient (2020) Conditions V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	0.75	C	0.56	A	-0.19
		PM	1.05	F	0.77	C	-0.28
2	Via Marina & Admiralty Way	AM	0.56	A	0.48	A	-0.09
		PM	0.91	E	0.83	D	-0.08
3	Via Marina & Panay Way	AM	0.63	B	0.40	A	-0.23
		PM	0.59	A	0.32	A	-0.27
4	Via Marina & Marquesas Way	AM	0.35	A	0.27	A	-0.08
		PM	0.44	A	0.22	A	-0.22
5	Via Marina & Tahiti Way	AM	0.46	A	0.27	A	-0.19
		PM	0.43	A	0.17	A	-0.26
6	Via Marina & Bora Bora Way [1]	AM	0.38	A	0.36	A	-0.03
		PM	0.37	A	0.33	A	-0.04
7	Palawan Way & Admiralty Way	AM	0.75	C	0.43	A	-0.32
		PM	1.16	F	0.72	C	-0.44
8	Lincoln Boulevard & Washington Boulevard	AM	1.41	F	0.77	C	-0.65
		PM	1.67	F	0.83	D	-0.84
9	Lincoln Boulevard & Marina Expressway	AM	1.16	F	0.74	C	-0.42
		PM	1.34	F	0.70	C	-0.64
10	Admiralty Way & Bali Way	AM	0.63	B	0.37	A	-0.26
		PM	1.08	F	0.53	A	-0.55
11	Lincoln Boulevard & Bali Way	AM	0.80	C	0.43	A	-0.37
		PM	1.14	F	0.56	A	-0.58

TABLE 5 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) CONDITIONS

			1991/1994 Approved Study [2] Ambient (2010) Conditions		2009 Study Ambient (2020) Conditions		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	0.88	D	0.50	A	-0.38
		PM	1.10	F	0.71	C	-0.39
13	Lincoln Boulevard & Mindanao Way	AM	1.24	F	0.68	B	-0.56
		PM	1.26	F	0.81	D	-0.45
14	Admiralty Way & Fiji Way	AM	0.35	A	0.22	A	-0.13
		PM	0.55	A	0.39	A	-0.16
15	Lincoln Boulevard & Fiji Way	AM	0.80	C	0.54	A	-0.26
		PM	1.18	F	0.77	C	-0.41
16	Mindanao Way & Marina Expressway EB	AM	1.20	F	0.64	B	-0.56
		PM	1.32	F	0.82	D	-0.50
17	Mindanao Way & Marina Expressway WB	AM	0.83	D	0.41	A	-0.42
		PM	1.14	F	0.57	A	-0.57
18	Culver Boulevard & Jefferson Boulevard	AM	1.28	F	0.89	D	-0.39
		PM	1.40	F	0.95	E	-0.45
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.42	F	0.58	A	-0.84
		PM	1.38	F	0.77	C	-0.61
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.72	C	-
		PM	n/a	-	0.77	C	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

COMPARISON TO AMBIENT (2010) CONDITIONS IN THE 1991/1994 DKS STUDY

This study compared the Future Ambient (2020) scenario to the Future Ambient (2010) conditions presented in the approved 1991/1994 DKS Study. This comparison is also presented in Table 5. From Table 5, it can be observed that all of the analyzed intersections under Future Ambient (2020) conditions are projected to operate at better V/C ratios and levels of service than the Future Ambient (2010) conditions described in the approved 1991/1994 DKS Study.

Capacity calculation worksheets for Future Ambient (2020) conditions are attached in Appendix D of the report.

IV. PROJECT TRAFFIC CONDITIONS

The Proposed Project, namely the Marina del Rey Local Coastal Project Amendment involves a single aggregate amendment that accommodates the changes to the land uses and their locations due to the proposed Pipeline Projects as well as the changes to the transportation improvement measures being contemplated as part of the amendment. These changes to the transportation improvement measures are consistent with the proposed land uses changes and the prevailing travel demand changes projected in the future.

This chapter provides a detailed description of the Pipeline Projects and the scenarios analyzed as part of this study. Additionally, the Proposed LCP Buildout (including Pipeline Projects) description and the scenarios evaluated as part of this study are also detailed in this chapter. The results of all these analyses and evaluations along with relevant comparisons to future ambient conditions and future conditions with approved LCP Project described in the approved 1991/1994 DKS Study are presented in this chapter.

PROPOSED PROJECT DESCRIPTION

The five 'Pipeline Projects' that require an amendment to the LCP involve the following parcels and uses:

- Parcels 10/FF: 536 dwelling units replacing 136 dwelling units, a net total of 390 dwelling units
- Parcels 33/NR: 292 dwelling units, 32,400 square feet of retail space, 323 restaurant seats and 69 public parking spaces, replacing 191 public parking spaces
- Parcels OT/21: Parcel OT includes 114-room senior active accommodations, 5,000 square feet of retail space and 92 public parking spaces. OT currently has186 public parking spaces, 92 of which will remain and 94 spaces will be built in Parcel 21; Parcel 21 includes a net increase of 6,000 square feet of office space, a net decrease of 6,000 square feet of health club and 94 public parking spaces (as a replacement for 94 spaces

from OT), Parcel 21 also includes 2,300 square feet of office space and 5,000 square feet of yacht club transferred from Parcel 20.

- Parcels 49/77: Option 1 -135,000 square feet of visitor-serving commercial space; Option 2 – 116,495 square feet of visitor-serving commercial space and 255 dwelling units; Option 3 – Up to 26,000 square feet of office use (Department of Beaches and Harbor Administration Building) with either Option 1 or Option 2.
- Parcels 52/GG: 375 dry stack spaces, 3,080 square feet of office use and 3,350 square feet of Sheriff's boatwright shop (existing).

The Marina del Rey Land Use Plan (LUP) allocates the future development potential within Marina del Rey. In order to do so, three major development zones (MDZs) were identified. Within a major development zone, the various land uses have been aggregated. A table showing approved LCP development and proposed LCP Amendment including Pipeline Projects, by development zones is attached in Appendix E. Appendix E also provides the correspondence between development zones in approved LCP and the Major Development Zones (MDZs).

The proposed LCP Amendment (Pipeline Projects) is a component of the overall buildout of Marina provided by the currently approved Local Coastal Program. In order to analyze the effects of the proposed pipeline projects both independently as well as within the context of the overall buildout of the Marina, two sets of traffic scenarios have been analyzed. They include:

- Ambient (2020) Conditions with Pipeline Projects
- Ambient (2020) Conditions with Proposed LCP Buildout (including Pipeline Projects)

AMBIENT (2020) WITH PIPELINE PROJECTS TRAFFIC CONDITIONS

The traffic analysis and evaluation of this scenario involves the following key elements:

- Development of traffic forecasts with Pipeline Projects
- Operational analysis of traffic conditions with Pipeline Projects
- Comparison of traffic conditions with the Ambient conditions in the approved LCP 1991/1994 DKS Study

Ambient (2020) With Pipeline Projects Traffic Projections

The traffic projections for Ambient (2020) with Pipeline Projects conditions consists of two components namely the Pipeline Projects-only traffic forecasts and the Future Ambient (2020) traffic projections developed in Chapter 3. The Pipeline Project-only traffic volumes were developed in the following manner:

Trip Generation of Pipeline Projects

The trips generated by the various proposed pipeline projects were computed using rates listed in *Appendix G of the approved Marina del Rey LCP*, and the *Institute of Transportation Engineers (ITE), Trip Generation, Informational Report, 8th Edition.*

Table 6 summarizes the trip generation for the LCP Pipeline Projects. From Table 6, it can be observed that the five Pipeline Projects' trip generation would result in a total of approximately 14,405 daily trips of which 706 trips (246 inbound, 460 outbound) would occur during the morning peak hour and 1,163 trips (610 inbound, 553 outbound) would occur during the evening peak hour.

Trip Distribution and Assignment

Trip distribution defines the percentage of trips to and from each of the areas within Marina del Rey to the boundaries of the study area along various roadway facilities in the network. Traffic assignment defines the paths that these trips take to and from each of the areas to the boundaries of the study area.

The geographic regional trip distribution was based on several methods from different sources. These methods included directional traffic distribution from previous studies; professional judgement and local knowledge on distribution of trips to and from the Marina; regional origin/destination information for trips using the latest Southern California Association of Governments' (SCAG's) Regional Transportation Plan (RTP) 2008 Travel Demand Model; and existing traffic patterns observed in the current counts. An iterative process to assign the trips generated by the various proposed project areas was employed.

TABLE 6
LCP AMENDMENT PIPELINE PROJECTS TRIP GENERATION ESTIMATES

MDZ#	Parcel	Redevelopment Proposed - Pipeline Projects	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	10/FF [1]	Apartment 526 units; To be removed: Apartment -136 units	Residential	390 DU	2,594	40	159	199	83	44	127
2	33/NR [2]	Apartment 292 units, Retail 32,400 s.f., Restaurant 323 seats & 69 public parking spaces; To be removed: public parking lot 191 spaces	Residential	292 DU	1,942	30	119	149	62	33	95
			Restaurant	323 seats	924	5	5	10	54	27	81
			Retail	32.4 KSF	1,391	20	12	32	71	73	144
2	OT [3]	Parcel OT includes 114-room senior active accommodations, 5,000 square feet of retail space and 92 public parking spaces, replacing 186 public parking spaces;	Congregate Care	114 DU	230	4	3	7	10	9	19
			Retail	5 KSF	215	3	2	5	11	11	22
3	49/77	Opt. 1. - 135 KSF VSC, Opt. 2. - 116.495 KSF VSC & 255 DUs, Opt. 3 - up to 26 KSF DBH Adm. Bldg. w/ either Opt1 or Opt 2.	Visitor Serving Comm.	116.495 KSF	5,002	71	45	116	253	264	517
			Residential	255 DU	1,696	26	104	130	54	29	83
			Office	26 KSF	286	35	5	40	10	47	57
3	52/GG [4]	375 Dry Storage Spaces, 3.08 KSF Office and 3.35 KSF Sheriff Boatwright	Dry Storage Spaces	375 spaces	125	12	6	18	2	16	18
LCP Amendment Pipeline Projects Total Trip Generation					**14,405**	**246**	**460**	**706**	**610**	**553**	**1,163**
Trip Generation Rates [5]											
			Residential	Per dwelling unit	6.65	20%	80%	0.51	65%	35%	0.326
			Congregate Care	Per dwelling unit	2.02	59%	41%	0.06	55%	45%	0.17
			Hotel	Per room	8.17	61%	39%	0.56	53%	47%	0.353
			Retail/VSC	Per 1,000 s.f.	42.94	61%	39%	1.00	49%	51%	4.44
			Restaurant	Per seat	2.86	50%	50%	0.03	67%	33%	0.25
			Office	Per 1,000 s.f.	11.01	88%	12%	1.55	17%	83%	2.21
			Dry Storage Spaces [6]	Per space	0.334	65%	35%	0.048	8%	92%	0.048

[1] Parcel FF proposed to become Parcel 14.
[2] Parcel NR proposed to be merged into Parcel 33.
[3] Parcel OT proposed to become Parcel 147.
[4] Parcel GG proposed to be merged into Parcel 52.
[5] Unless noted otherwise, PM peak hour trip generation rates from *Appendix G-Transportation Improvement Program of Marina del Rey Local Implementation Program*. Daily and AM trip generations rates and PM distribution split is based on *ITE, Trip Generation, 8th Edition, Informational Report*
[6] Trip generation for dry storage spaces from *Traffic Analysis for Dry Stack Boat Storage* , Linscott, Law & Greenspan, Engineers, February 28, 2008.

The geographic regional trip distribution for project trips for each land use was refined using the methods discussed above and has been generally determined to be the following:

	Residential	Commercial	Hotel	Office	Congregate Care
To and From the North: (Lincoln Bl, Pacific Av, etc.)	25%	25%	25%	20%	50%
To and From the South: (Lincoln Bl, Vista del Mar, etc.)	35%	30%	35%	35%	20%
To and From the East: (Washington Bl, Jefferson Bl, SR-90)	30%	35%	35%	35%	25%
To and From the West: (Washington Bl, Culver Bl)	10%	10%	5%	10%	5%
Total	100%	100%	100%	100%	100%

Based on these distribution assumptions, location and points of access, and trip generation from the Proposed Project, traffic estimates of the Pipeline Projects-only trips were developed. The project-only trips for the Pipeline Projects are attached in Appendix F.

Utilizing the Pipeline Projects-only traffic estimates developed for both AM and PM peak hours, traffic forecasts for the Future Ambient (2020) with Pipeline Projects (without improvements) conditions were developed. The Future Ambient (2020) traffic forecasts were combined with the Pipeline Projects-only traffic volumes to obtain the Future Ambient (2020) with Pipeline Projects traffic volume forecasts. The Future Ambient (2020) with Pipeline Projects traffic volumes during both A.M. and P.M. peak hours are also attached in Appendix F.

FUTURE AMBIENT (2020) WITH PIPELINE PROJECTS ANALYSIS AND EVALUATION

The Future Ambient (2020) with Pipeline Projects peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are also summarized on Table 7. These results are also presented in Figures 9 and 10 for AM and PM peak hours, respectively.

TABLE 7
SUMMARY OF LEVEL OF SERVICE ANALYSIS - LCP AMENDMENT (PIPELINE PROJECTS)

			1991/1994 Approved Study [2] Ambient (2010) Conditions		2009 Study Ambient (2020) w/LCP Amendment (Pipeline Projects)		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
1	Via Marina & Washington Boulevard	AM	0.75	C	0.61	B	-0.14
		PM	1.05	F	0.84	D	-0.21
2	Via Marina & Admiralty Way	AM	0.56	A	0.53	A	-0.03
		PM	0.91	E	0.91	E	0.00
3	Via Marina & Panay Way	AM	0.63	B	0.44	A	-0.19
		PM	0.59	A	0.33	A	-0.26
4	Via Marina & Marquesas Way	AM	0.35	A	0.38	A	0.03
		PM	0.44	A	0.29	A	-0.15
5	Via Marina & Tahiti Way	AM	0.46	A	0.27	A	-0.19
		PM	0.43	A	0.18	A	-0.26
6	Via Marina & Bora Bora Way [1]	AM	0.38	A	0.36	A	-0.02
		PM	0.37	A	0.33	A	-0.04
7	Palawan Way & Admiralty Way	AM	0.75	C	0.54	A	-0.22
		PM	1.16	F	0.83	D	-0.33
8	Lincoln Boulevard & Washington Boulevard	AM	1.41	F	0.80	C	-0.61
		PM	1.67	F	0.89	D	-0.78
9	Lincoln Boulevard & Marina Expressway	AM	1.16	F	0.75	C	-0.41
		PM	1.34	F	0.73	C	-0.61
10	Admiralty Way & Bali Way	AM	0.63	B	0.41	A	-0.22
		PM	1.08	F	0.63	B	-0.45
11	Lincoln Boulevard & Bali Way	AM	0.80	C	0.44	A	-0.36
		PM	1.14	F	0.61	B	-0.53

TABLE 7 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - LCP AMENDMENT (PIPELINE PROJECTS)

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Ambient (2010) Conditions V/C	1991/1994 Approved Study [2] Ambient (2010) Conditions LOS	2009 Study Ambient (2020) w/LCP Amendment (Pipeline Projects) V/C	2009 Study Ambient (2020) w/LCP Amendment (Pipeline Projects) LOS	Difference in V/C
12	Admiralty Way & Mindanao Way	AM	0.88	D	0.67	B	-0.21
		PM	1.10	F	0.88	D	-0.22
13	Lincoln Boulevard & Mindanao Way	AM	1.24	F	0.75	C	-0.49
		PM	1.26	F	0.88	D	-0.38
14	Admiralty Way & Fiji Way	AM	0.35	A	0.25	A	-0.10
		PM	0.55	A	0.44	A	-0.11
15	Lincoln Boulevard & Fiji Way	AM	0.80	C	0.58	A	-0.22
		PM	1.18	F	0.85	D	-0.33
16	Mindanao Way & Marina Expressway EB	AM	1.20	F	0.73	C	-0.47
		PM	1.32	F	0.86	D	-0.46
17	Mindanao Way & Marina Expressway WB	AM	0.83	D	0.43	A	-0.40
		PM	1.14	F	0.62	B	-0.52
18	Culver Boulevard & Jefferson Boulevard	AM	1.28	F	0.89	D	-0.39
		PM	1.40	F	0.95	E	-0.45
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.42	F	0.59	A	-0.83
		PM	1.38	F	0.78	C	-0.61
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.77	C	-
		PM	n/a	-	0.88	D	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

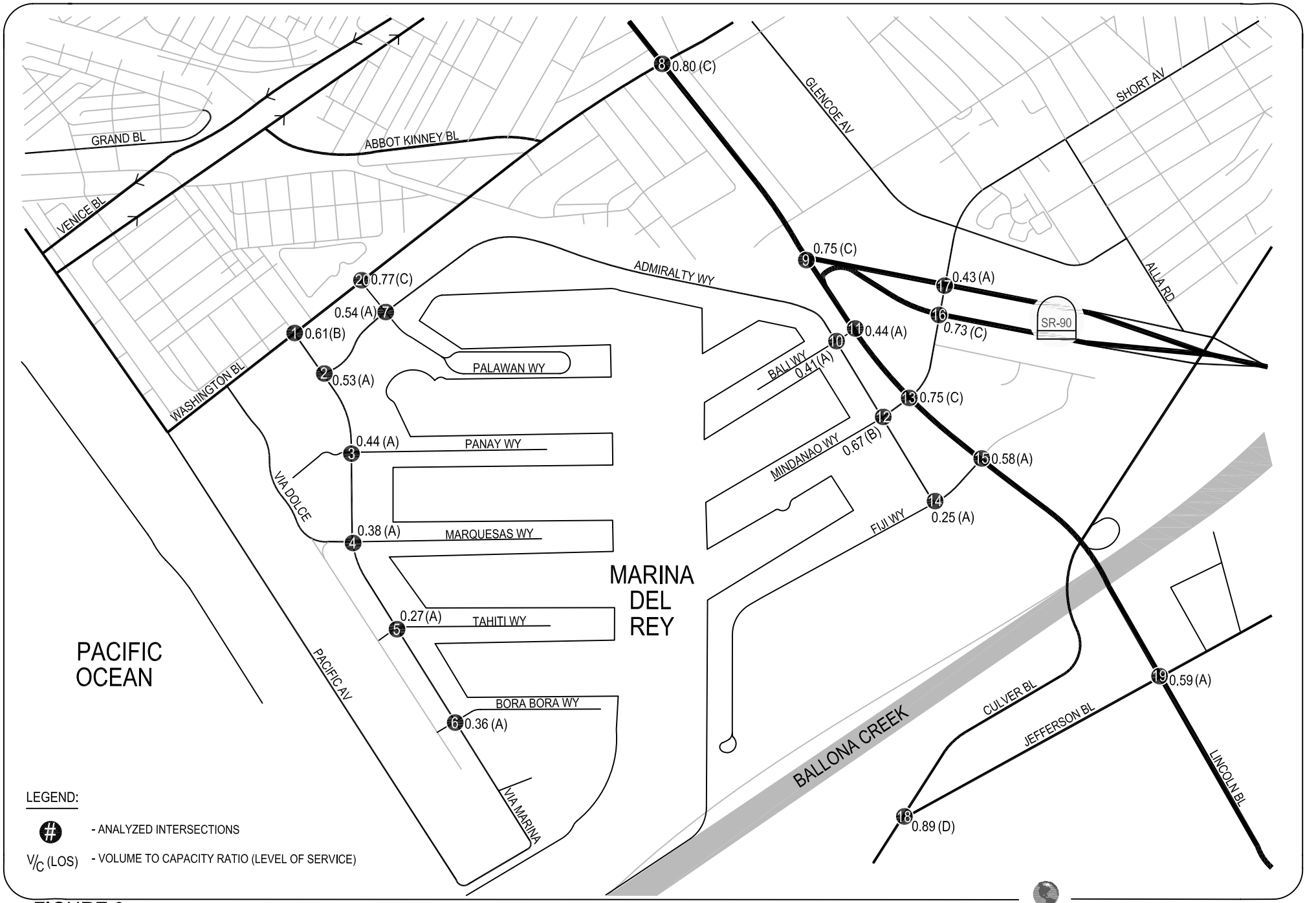

FIGURE 9
FUTURE AMBIENT (2020) WITH PIPELINE PROJECTS AM PEAK HOUR LEVELS OF SERVICE

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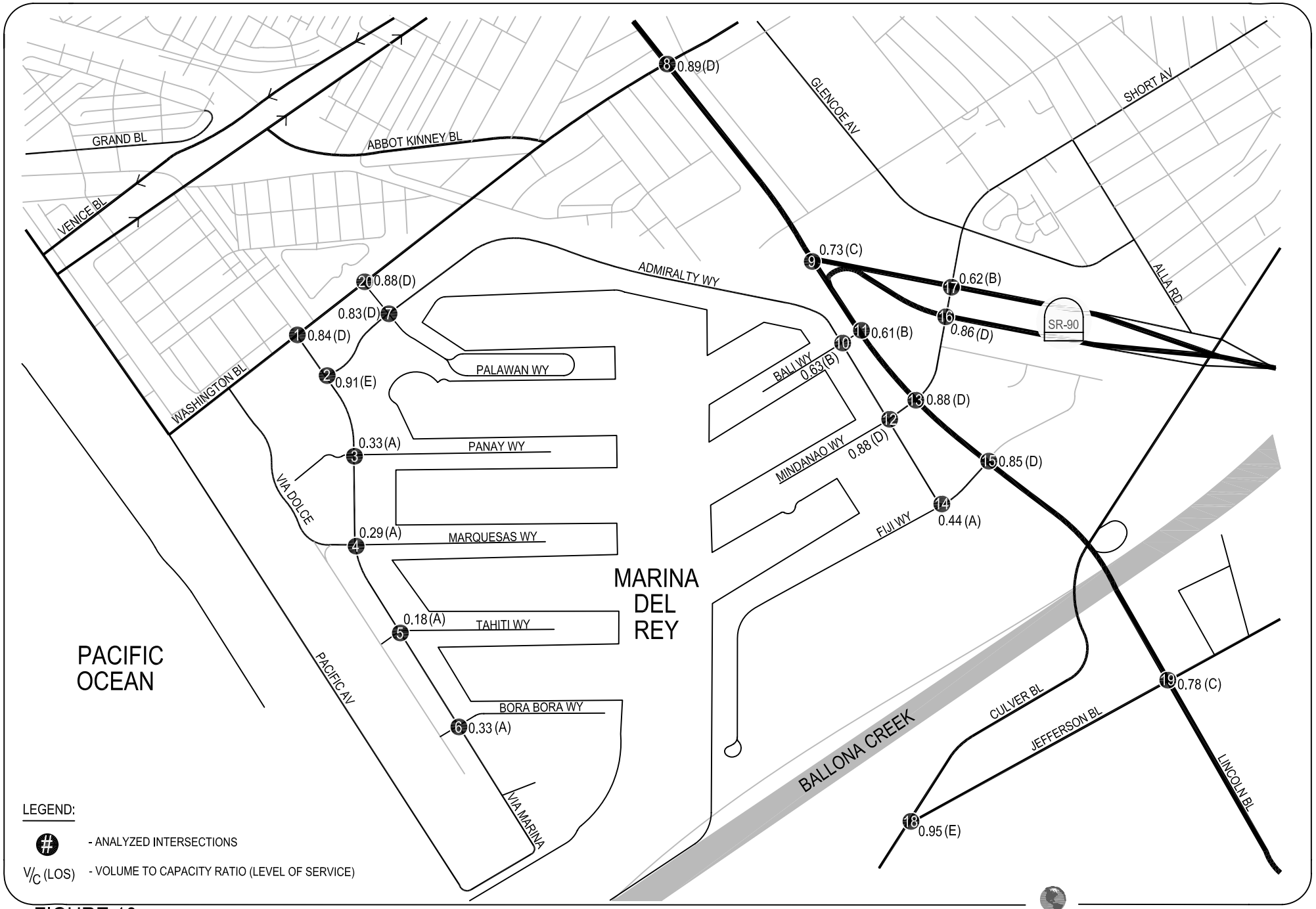

FIGURE 10
FUTURE AMBIENT (2020) WITH PIPELINE PROJECTS PM PEAK HOUR LEVELS OF SERVICE

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From the tables it can be observed that all 20 analyzed intersections in the morning peak hour and 18 of the 20 intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections during P.M. peak hour are projected to operate at LOS E or F. The locations that are operating at LOS E or F include the following:

PM Peak Hour

- Via Marina/Admiralty Way – LOS E
- Culver Boulevard/Jefferson Boulevard- LOS E

Capacity calculation worksheets for Future Ambient (2020) with Pipeline Projects conditions are attached in Appendix F of the report.

COMPARISON TO AMBIENT CONDITIONS IN THE 1991/94 DKS STUDY

Table 7 also compares the Future Ambient (2020) with LCP Amendment Pipeline Projects conditions to the Future Ambient conditions described in the approved 1991/1994 DKS Study. It can be observed from this comparison that all of the analyzed intersections under Future Ambient (2020) with LCP Amendment Pipeline Projects conditions are projected to operate at better V/C ratios and levels of service than the Future Ambient conditions from the approved 1991/1994 DKS Study.

AMBIENT (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) TRAFFIC CONDITIONS

The traffic analysis and evaluation of this scenario consisting of all unbuilt entitlements including pipeline projects and entitlement equivalent to less than that provided in the approved LCP involves the following key elements:

- Development of traffic projections with Proposed Buildout in Marina del Rey area including the Proposed Pipeline Projects
- Operational analysis of traffic conditions
- Comparison of traffic conditions with the Ambient plus project conditions described in the approved LCP 1991/1994 DKS Study

Ambient (2020) With Proposed Buildout (including Pipeline Projects) Traffic Projections

The traffic projections for this scenario also consists of two components – Proposed LCP Buildout (including Pipeline Projects) only traffic forecasts and the Future Ambient (2020) traffic projections developed and presented in Chapter 3.

The Proposed LCP Buildout (including Pipeline Projects) traffic forecasts were developed in a manner similar to the process described in the Ambient (2020) with Pipeline Projects traffic projections section. A brief description of the process follows.

Proposed LCP Buildout (including Pipeline Projects) Traffic Volumes

This Proposed LCP Buildout scenario within the Marina del Rey LCP area also includes the changes contemplated due to the Pipeline Projects. A summary of the major development zones (MDZs) including the associated parcels and the amount of potential development allocated to each MDZ is included below:

Major Development Zone (MDZ) 1
Parcels: 1, 3, 112, 113, BR, 7, 8, 9, 111, 10, 12, 13, FF (proposed to become Parcel 14), 15, 18, 20, 95, 100, 101, 102, 103, 104, DS, LLS, AL-1, K-6
Potential Development Available within this Zone -

- Residential Units: 1,497 dwelling units
- Hotel: 288 rooms
- Retail: 53,000 square feet of retail spaces
- Restaurant: 340 restaurant seats
- Congregate Care: 15 dwelling units

Major Development Zone (MDZ) 2
Parcels: 27, 28, 30, 33, 91, 97, 140, 141, 145, IR, H, JS, NR (proposed to be merged into Parcel 33), 125, 128, 129, OT (proposed to become Parcel 147), P, Q, RR, 21, 22, GR
Potential Development Available within this Zone –

- Residential Units: 292 dwelling units
- Hotel: 217 rooms
- Retail: 42,000 square feet of retail space
- Restaurant: 410 restaurant seats
- Congregate Care: 114 dwelling units
- Fire Station Expansion

Major Development Zone (MDZ) 3

Parcels: 40, 94, 130, 131, 132, 133, 134, SS, 41, 42, 43, 44, 45 (new parcel created from a portion of Parcel 44), 75, 76, 150, UR, 47, 48, 49, 50, 52, 53, 54, 77, EE, GG (proposed to be merged into Parcel 52), 55, 56, 61, BB, W, 62, 64, 65, XT, 51, 200

Potential Development Available within this Zone –

- Residential Units: 255 dwelling units
- Retail: 178,741 square feet of retail space
- Restaurant: 573 restaurant seats
- Office: 26,000 square feet of office space
- Dry Stack: 375 spaces
- Library: 3,000 square feet
- Ferry Terminal Site

Proposed Local Coastal Program Buildout - Overall Total Potential Development (including Pipeline Projects)

- Residential Units: 2,044 dwelling units
- Hotel: 505 rooms
- Visitor-Serving Commercial: 273,741 square feet of retail space
- Restaurant: 1,323 restaurant seats
- Congregate Care: 129 dwelling units
- Office: 26,000 square feet of office space
- Dry Stack: 375 spaces
- Library: 3,000 square feet
- Ferry Terminal Site
- Fire Station Expansion

Trip Generation Estimates

The trip generation was determined for each of the MDZs. For daily trips and the morning peak hour, trips generation rates provided in the *ITE, Trip Generation Informational Report (8th Edition)* were utilized. For the evening peak hour, trip generation rates for the various uses in the Marina specified in *Appendix G of the Marina del Rey Local Implementation Program of the LCP* were used. Table 8 presents details of the trip generation including type of use, size, applicable rate and trip generation estimates.

TABLE 8
PROPOSED LCP BUILDOUT TRIP GENERATION ESTIMATES BY MAJOR DEVELOPMENT ZONE

MDZ#	Parcels in DZ	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
1	1, 3, 112, 113,BR,7,8,9,111	Residential	1,497 DU	9,956	153	610	763	318	170	488
	10,12,13,FF [1],15,18,20,95,	Hotel	288 rooms	2,353	98	63	161	54	48	102
	100,101,102,103,104,DS,	Retail	53 KSF	2,275	32	21	53	115	120	235
	LLS, AL-1, K-6	Restaurant	340 seats	972	5	5	10	57	28	85
		Congregate Care	15 DU	30	1	0	1	2	1	3
		MDZ 1 Trip Generation Total		**15,586**	**289**	**699**	**988**	**546**	**367**	**913**
2	21,22,GR,27,28,30,33,91,97,	Residential	292 DU	1,942	30	119	149	62	33	95
	140,141,145,IR,H,JS,NR [2]	Hotel	217 rooms	1,773	74	48	122	41	36	77
	125,128,129,OT [3],P,Q,RR	Retail	42 KSF	1,804	26	16	42	91	95	186
		Restaurant	410 seats	1,173	6	6	12	69	34	103
		Congregate Care	114 DU	230	4	3	7	10	9	19
		Fire Station	n/a	0	0	0	0	0	0	0
		MDZ 2 Trip Generation Total		**6,922**	**140**	**192**	**332**	**273**	**207**	**480**
3	40,94,130,131,132,133,134	Residential	255 DU	1,696	26	104	130	54	29	83
	SS,41,42,43,44,75,76,150	Retail	178.741 KSF	7,675	108	70	178	389	405	794
	UR,47,48,49,50,52,53,54,	Restaurant	573 seats	1,639	10	8	18	97	47	144
	77,EE,GG [4],55,56,61,BB,	Office	26 KSF	286	35	5	40	10	47	57
	W,62,64,65,XT,51,200	Dry Storage Spaces	375 spaces	125	12	6	18	2	16	18
		Library	3 KSF	169	2	1	3	7	7	14
		Ferry Terminal	n/a	0	0	0	0	0	0	0
		MDZ 3 Trip Generation Total		**11,590**	**193**	**194**	**387**	**559**	**551**	**1,110**
		LCP Amendment Total Trip Generation		**34,098**	**622**	**1,085**	**1,707**	**1,378**	**1,125**	**2,503**
		Trip Generation Rates [5]								
		Residential	Per dwelling unit	6.65	20%	80%	0.51	65%	35%	0.326
		Hotel	Per room	8.17	61%	39%	0.56	53%	47%	0.353
		Congregate Care	Per dwelling unit	2.02	59%	41%	0.06	55%	45%	0.17
		Retail/VSC	Per 1,000 s.f.	42.94	61%	39%	1.00	49%	51%	4.44
		Restaurant	Per seat	2.86	50%	50%	0.03	67%	33%	0.25
		Office	Per 1,000 s.f.	11.01	88%	12%	1.55	17%	83%	2.21
		Library	Per 1,000 s.f.	56.24	71%	29%	1.04	48%	52%	4.74
		Dry Storage Spaces [6]	Per space	0.334	65%	35%	0.048	8%	92%	0.048

[1] Parcel FF proposed to become Parcel 14.
[2] Parcel NR proposed to be merged into Parcel 33.
[3] Parcel OT proposed to become Parcel 147.
[4] Parcel GG proposed to be merged into Parcel 52.
[5] PM peak hour trip generation rates from *Appendix G-Transportation Improvement Program of Marina del Rey Local Implementation Program* .
Daily and AM trip generations rates and PM distribution split is based on *ITE, Trip Generation, 8th Edition, Informational Report*
[6] Trip generation for dry storage spaces from *Traffic Analysis for Dry Stack Boat Storage* , Linscott, Law & Greenspan, Engineers, February 28, 2008.

From Table 8, it can be observed that the trip generation for MDZ 1 would result in a total of approximately 15,586 daily trips of which 988 trips (289 inbound, 699 outbound) would occur during the morning peak hour and 913 trips (546 inbound, 367 outbound) would occur during the evening peak hour.

The trip generation for MDZ 2 would result in a total of approximately 6,922 daily trips of which 332 trips (140 inbound, 192 outbound) would occur during the morning peak hour and 480 trips (273 inbound, 207 outbound) would occur during the evening peak hour.

The trip generation for MDZ 3 would result in a total of approximately 11,590 daily trips of which 387 trips (193 inbound, 194 outbound) would occur during the morning peak hour and 1,110 trips (559 inbound, 551 outbound) would occur during the evening peak hour.

Table 8 summarizes the Proposed LCP Buildout by Major Development Zone. It also summarizes the total trip generation of the Proposed LCP Buildout (including Pipeline Projects), by MDZ, as noted above.

The Proposed LCP Buildout scenario would generate less than the amount of trips in the approved LCP during the evening peak hour. As indicated in the table, the Proposed LCP Buildout trip generation would result in an overall total of approximately 34,098 daily trips of which 1,707 trips (622 inbound, 1,085 outbound) would occur during the morning peak hour and 2,503 trips (1,378 inbound, 1,125 outbound) would occur during the evening peak hour.

Trip Distribution and Assignment

Using the same trip distribution and assignment process described earlier in this chapter, the Proposed LCP Buildout only traffic volumes were developed. These traffic volumes are attached in Appendix G.

Utilizing the traffic volumes presented in Appendix G and the Future Ambient (2020) traffic forecasts, the Future Ambient (2020) with the Proposed LCP Buildout traffic projections were developed. These traffic projections are also attached in Appendix G.

Future Ambient (2020) with Proposed LCP Buildout Traffic Conditions Analysis

The Future Ambient (2020) with Proposed LCP Buildout (including Pipeline Projects) peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized on Table 9. They are also presented in Figures 11 and 12 for AM and PM peak hours, respectively. As indicated in the table, all 20 analyzed intersections in the morning peak hour and 10 of the 20 intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F.

These locations include the following:

PM Peak Hour

- Via Marina/Washington Boulevard – LOS E
- Via Marina/Admiralty Way – LOS F
- Palawan Way/Admiralty Way – LOS E
- Lincoln Boulevard/Washington Boulevard – LOS E
- Admiralty Way/Mindanao Way – LOS F
- Lincoln Boulevard/Mindanao Way – LOS E
- Lincoln Boulevard/Fiji Way – LOS E
- Mindanao Way/Marina Expressway (SR-90) Eastbound – LOS E
- Culver Boulevard/Jefferson Boulevard – LOS E
- Washington Boulevard/Palawan Way – LOS E

Capacity calculation worksheets for Future Ambient (2020) with Proposed LCP Buildout (including pipeline projects) are attached in Appendix G of the report.

TABLE 9
SUMMARY OF LEVEL OF SERVICE ANALYSIS - PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)

Map #	INTERSECTION	Peak Hour	1991/1994 Study [2] Future Ambient (2010) w/ Approved LCP Development without Mitigations V/C	1991/1994 Study [2] Future Ambient (2010) w/ Approved LCP Development without Mitigations LOS	2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) without Improvements V/C	2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) without Improvements LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.04	F	0.74	C	-0.30
		PM	1.38	F	0.97	E	-0.41
2	Via Marina & Admiralty Way	AM	0.85	D	0.63	B	-0.22
		PM	1.23	F	1.04	F	-0.19
3	Via Marina & Panay Way	AM	0.81	D	0.65	B	-0.16
		PM	0.74	C	0.47	A	-0.27
4	Via Marina & Marquesas Way	AM	0.45	A	0.43	A	-0.02
		PM	0.53	A	0.35	A	-0.18
5	Via Marina & Tahiti Way	AM	0.58	A	0.31	A	-0.27
		PM	0.53	A	0.19	A	-0.34
6	Via Marina & Bora Bora Way [1]	AM	0.49	A	0.41	A	-0.09
		PM	0.46	A	0.35	A	-0.11
7	Palawan Way & Admiralty Way	AM	0.92	E	0.68	B	-0.24
		PM	1.34	F	0.93	E	-0.41
8	Lincoln Boulevard & Washington Boulevard	AM	1.47	F	0.86	D	-0.62
		PM	1.62	F	0.98	E	-0.64
9	Lincoln Boulevard & Marina Expressway	AM	1.21	F	0.78	C	-0.43
		PM	1.37	F	0.77	C	-0.60
10	Admiralty Way & Bali Way	AM	0.81	D	0.51	A	-0.30
		PM	1.28	F	0.76	C	-0.52
11	Lincoln Boulevard & Bali Way	AM	0.83	D	0.45	A	-0.38
		PM	1.17	F	0.68	B	-0.50

TABLE 9 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)

			1991/1994 Study [2] Future Ambient (2010) w/ Approved LCP Development without Mitigations		2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) without Improvements		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	0.92	E	0.85	D	-0.07
		PM	1.18	F	1.01	F	-0.17
13	Lincoln Boulevard & Mindanao Way	AM	1.21	F	0.84	D	-0.37
		PM	1.25	F	0.96	E	-0.29
14	Admiralty Way & Fiji Way	AM	0.78	C	0.28	A	-0.50
		PM	1.08	F	0.51	A	-0.57
15	Lincoln Boulevard & Fiji Way	AM	0.83	D	0.61	B	-0.22
		PM	1.07	F	0.92	E	-0.15
16	Mindanao Way & Marina Expressway EB	AM	1.18	F	0.82	D	-0.36
		PM	1.33	F	0.90	E	-0.43
17	Mindanao Way & Marina Expressway WB	AM	0.81	D	0.47	A	-0.34
		PM	1.07	F	0.68	B	-0.40
18	Culver Boulevard & Jefferson Boulevard	AM	1.34	F	0.89	D	-0.45
		PM	1.48	F	0.95	E	-0.53
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.37	F	0.61	B	-0.76
		PM	1.46	F	0.78	C	-0.68
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.90	D	-
		PM	n/a	-	0.98	E	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

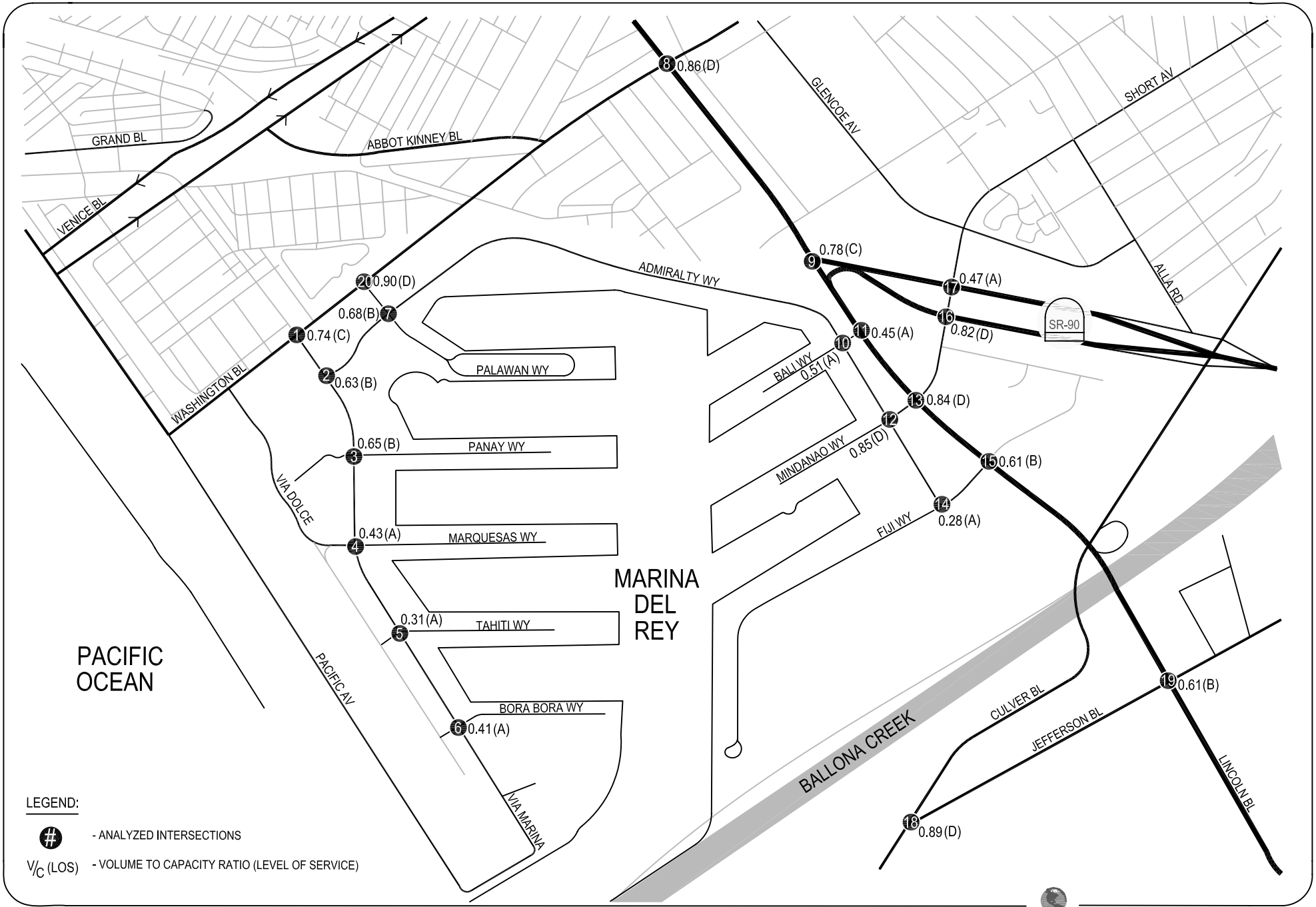

FIGURE 11
FUTURE AMBIENT (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)
AM PEAK HOUR LEVELS OF SERVICE

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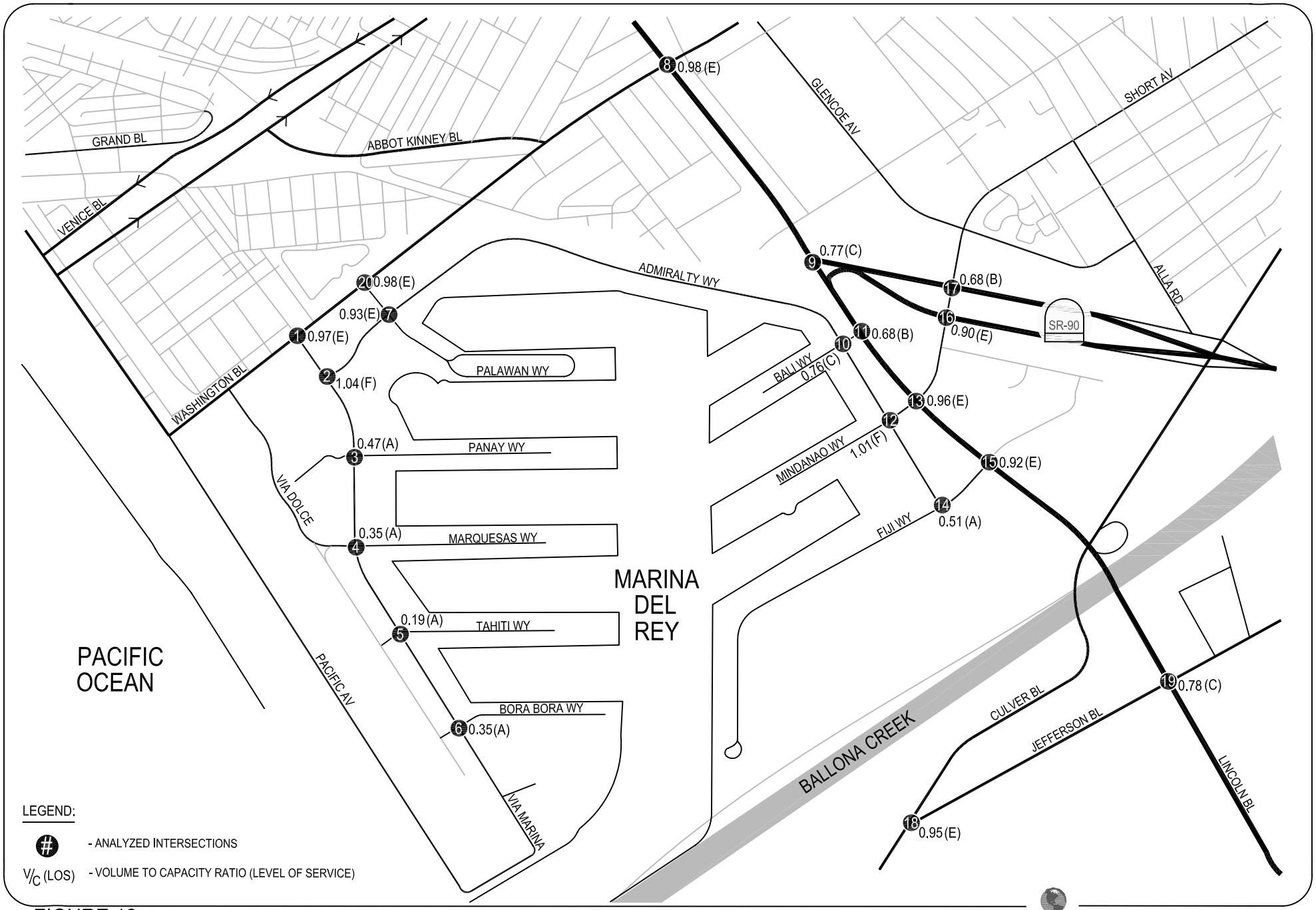


FIGURE 12
FUTURE AMBIENT (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)
PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

COMPARISON TO AMBIENT WITH APPROVED LCP PROJECT CONDITIONS IN THE 1991/94 DKS STUDY

Table 9 also compares the Future Ambient (2020) with Proposed LCP Buildout conditions to the Future Ambient (2010) with the Approved LCP Project conditions from the 1991/1994 DKS Study. As indicated in the table, all of the analyzed intersections under Future Ambient (2020) with Proposed LCP Buildout conditions are projected to operate at better V/C ratios and levels of service than the Future Ambient (2010) with LCP conditions. These scenarios do not include any transportation improvement measures.

A discussion of the transportation improvement measures and ensuing traffic conditions is provided in Chapter VI.

V. FUTURE CUMULATIVE TRAFFIC CONDITIONS

This chapter provides details of the development of travel forecasts for future (2020) cumulative conditions, cumulative with pipeline projects conditions and cumulative with proposed LCP buildout conditions and assessments of these forecasts. Appropriate comparisons to corresponding analyses in the 1991/94 DKS Study where available are also presented in this chapter.

The estimates for cumulative (2020) conditions without the Proposed Project were first developed using the future ambient (2020) forecasts and the traffic associated with the related projects in the vicinity of the project study area. These Cumulative (2020) traffic estimates have been analyzed and compared to the Cumulative (2010) Conditions presented in the 1991/94 DKS Study and results of this assessment have been presented in this chapter.

Traffic forecasts of Cumulative (2020) Conditions with the Proposed Pipeline Projects and with the Proposed LCP Buildout Conditions (including Pipeline Projects) have been developed in this chapter and capacity analyses of these forecasts have been conducted in this chapter. Comparative evaluations of these traffic conditions with the Cumulative (2010) Conditions presented in the 1991/94 DKS Study have also been conducted and the results of the same are presented in this chapter.

Descriptions of each of these analyses elements follow:

CUMULATIVE (2020) TRAFFIC CONDITIONS

The assessment of Cumulative (2020) traffic conditions involved the following three tasks:

- Cumulative (2020) traffic projections
- Analysis of Cumulative (2020) traffic conditions
- Comparison of Cumulative (2020) conditions with the Cumulative (2010) conditions presented in the 1991/1994 DKS Study

A brief discussion of each of the above tasks follows:

Cumulative (2020) Traffic Projections

The future cumulative (2020) traffic consists of traffic growth due to two primary sources: background ambient traffic growth and growth due to related projects within and in the vicinity of the Project study area. The ambient growth was estimated as described in Chapter 3. The related projects growth was estimated using the following methodology:

- Development projects that are planned and expected to be in place within the same timeframe as the Proposed Project and located within and in the vicinity of the Proposed Project study area were identified.

- Data describing related projects in the area was solicited from the County of Los Angeles, City of Los Angeles and City of Culver City. This list was compiled and reviewed by Los Angeles County Department of Beaches and Harbors staff and was finalized through coordination. The summary of related projects included in this study is included in Appendix H. The locations of these projects are also shown in an Exhibit H-1 attached in Appendix H.

- The trip generation estimates for the related projects were developed using trip generation rates contained in the ITE, Trip Generation Informational Report, 8th Edition, the City of Los Angeles Coastal Transportation Corridor Specific Plan (CTCSP) rates and West Los Angeles Transportation Improvement and Mitigation Specific Plan rates.

- These related project trips were assigned to the roadway network to obtain related projects only traffic volumes. The related projects only traffic volume forecasts at each of the analysis intersections within the study area are provided in Exhibit H-2 in Appendix H of this report.

The related projects' traffic estimates shown in Appendix H Exhibit H-2 were added to the Future Ambient (2020) traffic volumes in Appendix D to obtain the Cumulative (2020) traffic volumes. The Cumulative (2020) traffic volumes at each of the analysis intersections during the peak hours are also attached in Appendix I. These volumes represent Cumulative (2020) conditions.

Cumulative (2020) Traffic Conditions Analysis

The Cumulative (2020) peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized in Table 10 and presented in Figures 13 and 14, for AM and PM peak hours, respectively. As indicated in the table, 18 of the 20 analyzed intersections in the morning peak

hour and 17 of the 20 intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F. They include the following:

AM Peak Hour

- Lincoln Boulevard/Washington Boulevard – LOS E
- Culver Boulevard/Jefferson Boulevard – LOS E

PM Peak Hour

- Lincoln Boulevard/Washington Boulevard – LOS E
- Lincoln Boulevard/Mindanao Way – LOS E
- Culver Boulevard/Jefferson Boulevard – LOS F

COMPARISON TO CUMULATIVE CONDITIONS (WITH NO MARINA DEVELOPMENT) IN THE 1991/1994 DKS STUDY

Table 10 also compares the Cumulative (2020) conditions to the Cumulative (2010) conditions (with no Marina Development) from the 1991/1994 DKS Study. As indicated in the table, all of the analyzed intersections under Cumulative (2020) conditions are projected to operate at better V/C ratios and levels of service than the Cumulative (2010) conditions described in the 1991/1994 DKS Study.

Capacity calculation worksheets for Cumulative (2020) conditions are attached in Appendix I of the report.

TABLE 10
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) Conditions V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.06	F	0.60	A	-0.46
		PM	1.68	F	0.80	C	-0.89
2	Via Marina & Admiralty Way	AM	0.79	C	0.51	A	-0.28
		PM	1.27	F	0.86	D	-0.41
3	Via Marina & Panay Way	AM	0.74	C	0.41	A	-0.33
		PM	0.72	C	0.32	A	-0.40
4	Via Marina & Marquesas Way	AM	0.46	A	0.28	A	-0.19
		PM	0.58	A	0.24	A	-0.35
5	Via Marina & Tahiti Way	AM	0.53	A	0.28	A	-0.25
		PM	0.55	A	0.18	A	-0.37
6	Via Marina & Bora Bora Way [1]	AM	0.44	A	0.37	A	-0.07
		PM	0.45	A	0.34	A	-0.11
7	Palawan Way & Admiralty Way	AM	0.93	E	0.44	A	-0.49
		PM	1.38	F	0.75	C	-0.63
8	Lincoln Boulevard & Washington Boulevard	AM	1.94	F	0.91	E	-1.03
		PM	2.40	F	0.98	E	-1.42
9	Lincoln Boulevard & Marina Expressway	AM	1.77	F	0.87	D	-0.90
		PM	2.04	F	0.85	D	-1.19
10	Admiralty Way & Bali Way	AM	0.84	D	0.38	A	-0.46
		PM	1.32	F	0.57	A	-0.75
11	Lincoln Boulevard & Bali Way	AM	1.08	F	0.50	A	-0.58
		PM	1.49	F	0.65	B	-0.84

TABLE 10 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) Conditions V/C	LOS	Difference in V/C
12	Admiralty Way & Mindanao Way	AM	1.00	E	0.53	A	-0.47
		PM	1.26	F	0.75	C	-0.51
13	Lincoln Boulevard & Mindanao Way	AM	1.51	F	0.76	C	-0.75
		PM	1.73	F	0.93	E	-0.80
14	Admiralty Way & Fiji Way	AM	0.86	D	0.24	A	-0.62
		PM	1.20	F	0.41	A	-0.79
15	Lincoln Boulevard & Fiji Way	AM	1.39	F	0.64	B	-0.75
		PM	1.62	F	0.88	D	-0.74
16	Mindanao Way & Marina Expressway EB	AM	1.26	F	0.74	C	-0.52
		PM	1.56	F	0.86	D	-0.70
17	Mindanao Way & Marina Expressway WB	AM	0.94	E	0.44	A	-0.50
		PM	1.33	F	0.63	B	-0.70
18	Culver Boulevard & Jefferson Boulevard	AM	1.62	F	0.94	E	-0.69
		PM	1.88	F	1.06	F	-0.82
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.88	F	0.78	C	-1.10
		PM	2.30	F	0.90	D	-1.40
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.75	C	-
		PM	n/a	-	0.79	C	-

[1] Unsignalized intersections - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

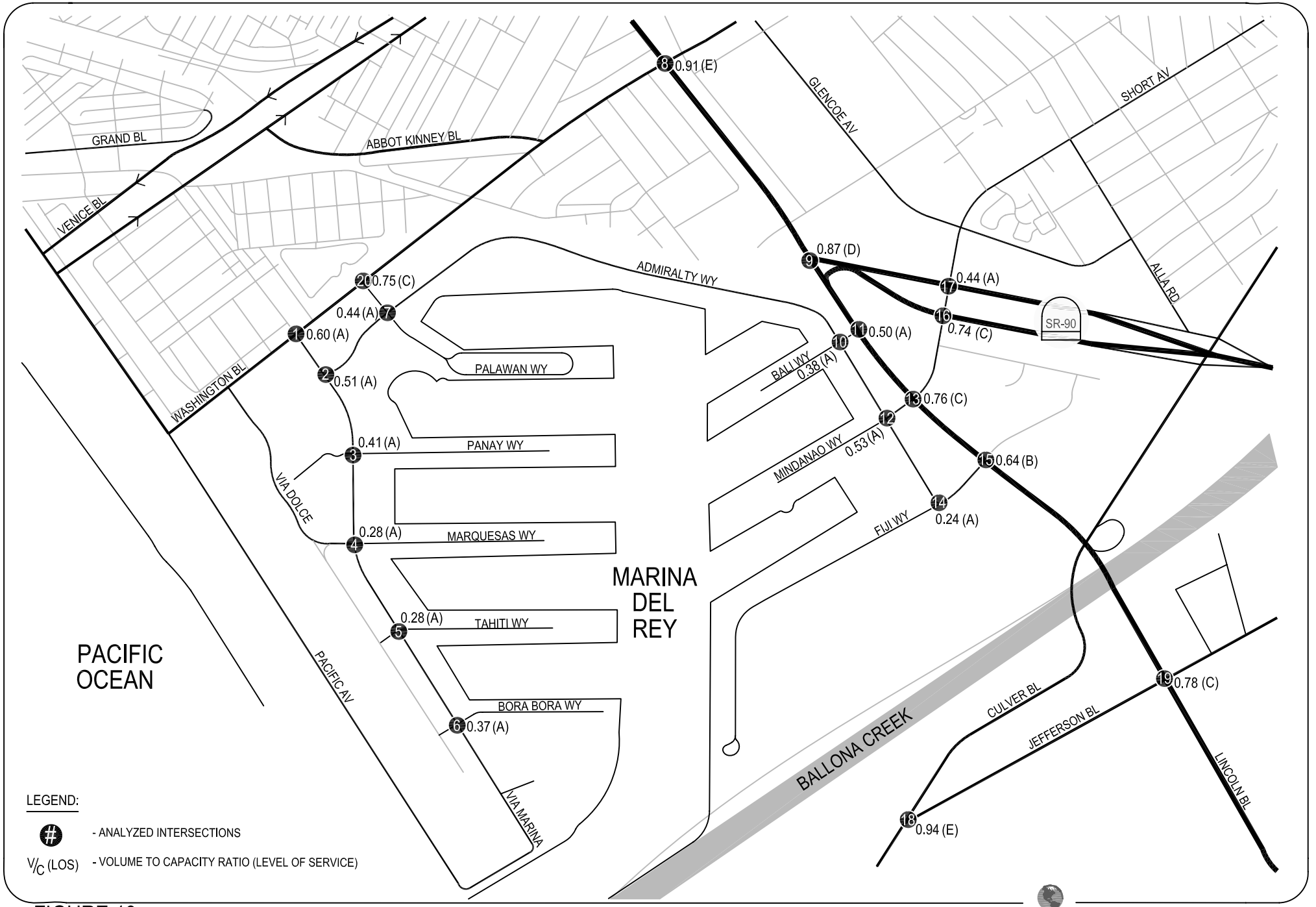


FIGURE 13
CUMULATIVE (2020) LEVELS OF SERVICE - AM PEAK HOUR

RAJU Associates, Inc.

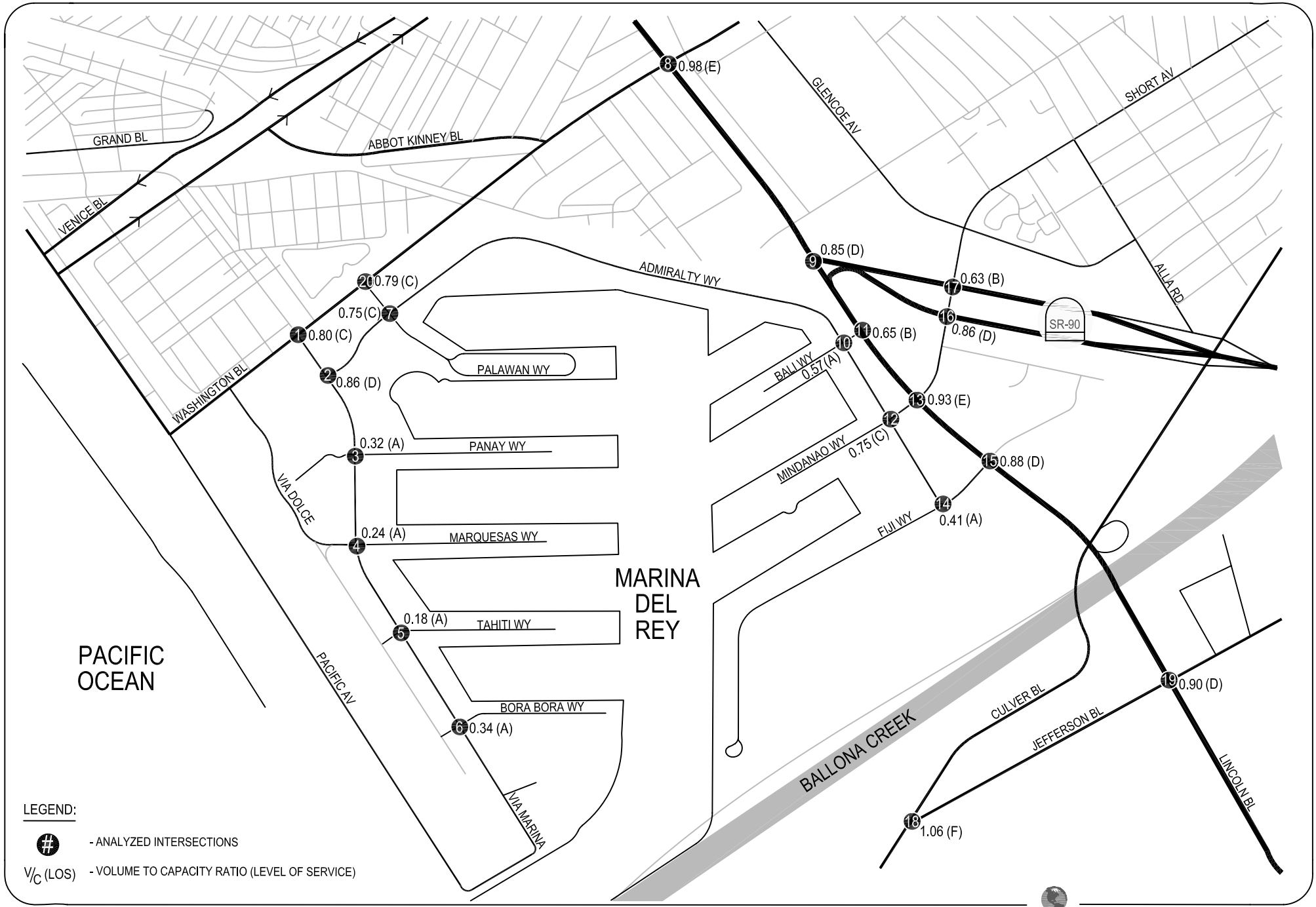


FIGURE 14
CUMULATIVE (2020) LEVELS OF SERVICE - PM PEAK HOUR

RAJU Associates, Inc.

CUMULATIVE (2020) WITH PIPELINE PROJECTS TRAFFIC CONDITIONS

The Cumulative (2020) with Pipeline Projects traffic forecasts were first developed by adding the Pipeline Projects only traffic volumes to the Cumulative (2020) traffic forecasts developed as described in the previous section. The Cumulative (2020) with LCP Amendment Project (Pipeline Projects) traffic volumes are attached in Appendix J.

These peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized on Table 11. These results are also presented in Figures 15 and 16 for AM and PM peak hours, respectively. From the table, it can be observed that 18 of the 20 analyzed intersections in the morning peak hour and 13 of the 20 intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F. The locations that are operating at LOS E or F include the following:

AM Peak Hour

- Lincoln Boulevard/Washington Boulevard - LOS E
- Culver Boulevard/Jefferson Boulevard- LOS E

PM Peak Hour

- Via Marina/Admiralty Way – LOS E
- Lincoln Boulevard/Washington Boulevard - LOS F
- Admiralty Way/Mindanao Way – LOS E
- Lincoln Boulevard/Mindanao Way – LOS F
- Lincoln Boulevard/Fiji Way – LOS E
- Lincoln Boulevard/Jefferson Boulevard – LOS E
- Culver Boulevard/Jefferson Boulevard- LOS F

Capacity calculation worksheets for Cumulative (2020) with Pipeline Projects conditions are attached in Appendix J of the report.

TABLE 11
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS WITH LCP AMENDMENT (PIPELINE PROJECTS)

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) with LCP Amendment (Pipeline Projects) V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.06	F	0.64	B	-0.42
		PM	1.68	F	0.86	D	-0.82
2	Via Marina & Admiralty Way	AM	0.79	C	0.57	A	-0.23
		PM	1.27	F	0.94	E	-0.33
3	Via Marina & Panay Way	AM	0.74	C	0.45	A	-0.29
		PM	0.72	C	0.34	A	-0.38
4	Via Marina & Marquesas Way	AM	0.46	A	0.39	A	-0.07
		PM	0.58	A	0.29	A	-0.29
5	Via Marina & Tahiti Way	AM	0.53	A	0.28	A	-0.25
		PM	0.55	A	0.19	A	-0.37
6	Via Marina & Bora Bora Way [1]	AM	0.44	A	0.37	A	-0.07
		PM	0.45	A	0.34	A	-0.11
7	Palawan Way & Admiralty Way	AM	0.93	E	0.56	A	-0.37
		PM	1.38	F	0.86	D	-0.52
8	Lincoln Boulevard & Washington Boulevard	AM	1.94	F	0.94	E	-1.00
		PM	2.40	F	1.03	F	-1.37
9	Lincoln Boulevard & Marina Expressway	AM	1.77	F	0.88	D	-0.89
		PM	2.04	F	0.88	D	-1.16
10	Admiralty Way & Bali Way	AM	0.84	D	0.43	A	-0.41
		PM	1.32	F	0.66	B	-0.66
11	Lincoln Boulevard & Bali Way	AM	1.08	F	0.52	A	-0.56
		PM	1.49	F	0.70	B	-0.79

TABLE 11 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS WITH LCP AMENDMENT (PIPELINE PROJECTS)

			1991/1994 Approved Study [2] Cumulative (2010) Conditions		2009 Study Cumulative (2020) with LCP Amendment (Pipeline Projects)		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	1.00	E	0.70	B	-0.30
		PM	1.26	F	0.92	E	-0.34
13	Lincoln Boulevard & Mindanao Way	AM	1.51	F	0.83	D	-0.68
		PM	1.73	F	1.00	F	-0.73
14	Admiralty Way & Fiji Way	AM	0.86	D	0.28	A	-0.58
		PM	1.20	F	0.47	A	-0.74
15	Lincoln Boulevard & Fiji Way	AM	1.39	F	0.68	B	-0.71
		PM	1.62	F	0.97	E	-0.66
16	Mindanao Way & Marina Expressway EB	AM	1.26	F	0.82	D	-0.44
		PM	1.56	F	0.90	D	-0.66
17	Mindanao Way & Marina Expressway WB	AM	0.94	E	0.46	A	-0.48
		PM	1.33	F	0.68	B	-0.65
18	Culver Boulevard & Jefferson Boulevard	AM	1.62	F	0.94	E	-0.68
		PM	1.88	F	1.06	F	-0.82
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.88	F	0.78	C	-1.10
		PM	2.30	F	0.91	E	-1.40
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.80	D	-
		PM	n/a	-	0.90	D	-

[1] Unsignalized intersections - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

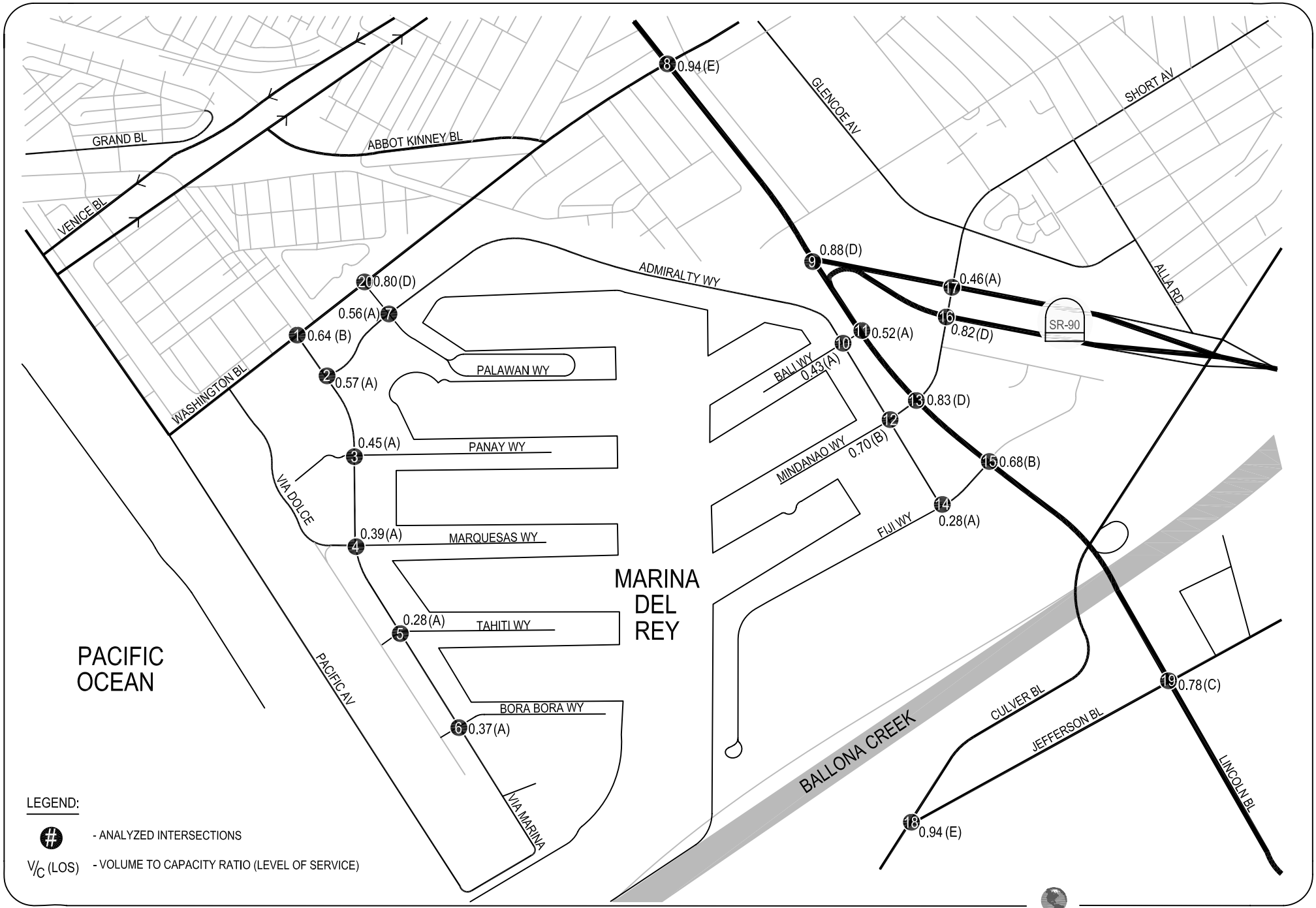


FIGURE 15
CUMULATIVE (2020) WITH PIPELINE PROJECTS AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

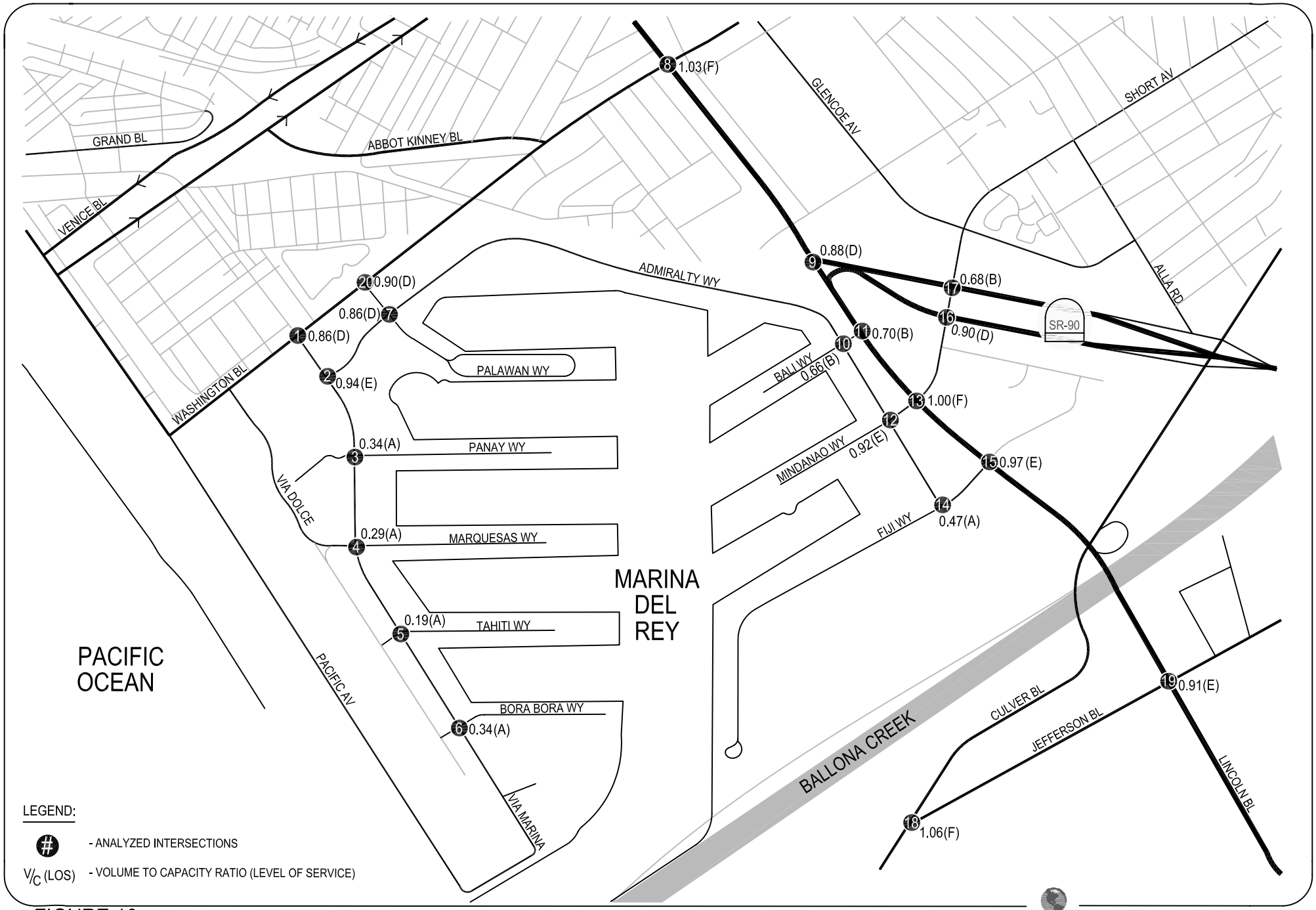


FIGURE 16
CUMULATIVE (2020) WITH PIPELINE PROJECTS PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

COMPARISON TO CUMULATIVE CONDITIONS (WITH NO MARINA DEVELOPMENT) IN THE 1991/94 DKS STUDY

Table 11 also compares the Cumulative (2020) with LCP Amendment Pipeline Projects conditions to the Cumulative (2010) conditions (with no Marina Development) described in the approved 1991/1994 DKS Study. It can be observed from this comparison that all of the analyzed intersections under Cumulative (2020) with LCP Amendment Pipeline Projects conditions are projected to operate at better V/C ratios and levels of service than the Cumulative (2010) conditions (with no Marina Development) from the approved 1991/1994 DKS Study.

CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) TRAFFIC CONDITIONS

The Cumulative (2020) with Proposed LCP Buildout (including Pipeline Projects) traffic forecasts were first developed by adding the Proposed LCP Buildout only traffic volumes to the Cumulative (2020) traffic forecasts developed as described in the previous section. The Cumulative (2020) with Proposed LCP Buildout (including Pipeline Projects) traffic volumes are attached in Appendix K.

These peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized on Table 12. These results are also presented in Figures 17 and 18 for AM and PM peak hours, respectively. From the tables, it can be observed that 14 of the 20 analyzed intersections in the morning peak hour and 8 of the 20 intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F. The locations that are operating at LOS E or F include the following:

<u>AM Peak Hour</u>

- Lincoln Boulevard/Washington Boulevard - LOS E
- Lincoln Boulevard/Marina Expressway – LOS E
- Lincoln Boulevard/Mindanao Way – LOS E
- Mindanao Way/Marina Expressway EB - LOSE
- Culver Boulevard/Jefferson Boulevard- LOS E
- Washington Boulevard/Palawan Way – LOS E

TABLE 12
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)

			1991/1994 Approved Study [2] Cumulative (2010) Conditions		2009 Study Cumulative (2020) w/Proposed LCP Buildout (incl. Pipeline Projects)		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
1	Via Marina & Washington Boulevard	AM	1.06	F	0.77	C	-0.29
		PM	1.68	F	0.99	E	-0.69
2	Via Marina & Admiralty Way	AM	0.79	C	0.66	B	-0.13
		PM	1.27	F	1.07	F	-0.20
3	Via Marina & Panay Way	AM	0.74	C	0.66	B	-0.08
		PM	0.72	C	0.48	A	-0.24
4	Via Marina & Marquesas Way	AM	0.46	A	0.44	A	-0.02
		PM	0.58	A	0.36	A	-0.22
5	Via Marina & Tahiti Way	AM	0.53	A	0.32	A	-0.21
		PM	0.55	A	0.20	A	-0.35
6	Via Marina & Bora Bora Way [1]	AM	0.44	A	0.42	A	-0.02
		PM	0.45	A	0.36	A	-0.09
7	Palawan Way & Admiralty Way	AM	0.93	E	0.71	C	-0.22
		PM	1.38	F	0.97	E	-0.41
8	Lincoln Boulevard & Washington Boulevard	AM	1.94	F	0.98	E	-0.96
		PM	2.40	F	1.13	F	-1.27
9	Lincoln Boulevard & Marina Expressway	AM	1.77	F	0.91	E	-0.86
		PM	2.04	F	0.93	E	-1.11
10	Admiralty Way & Bali Way	AM	0.84	D	0.54	A	-0.30
		PM	1.32	F	0.79	C	-0.53
11	Lincoln Boulevard & Bali Way	AM	1.08	F	0.55	A	-0.53
		PM	1.49	F	0.77	C	-0.72

TABLE 12 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE CONDITIONS WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)

			1991/1994 Approved Study [2] Cumulative (2010) Conditions		2009 Study Cumulative (2020) w/Proposed LCP Buildout (incl. Pipeline Projects)		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	1.00	E	0.88	D	-0.12
		PM	1.26	F	1.06	F	-0.21
13	Lincoln Boulevard & Mindanao Way	AM	1.51	F	0.92	E	-0.59
		PM	1.73	F	1.08	F	-0.65
14	Admiralty Way & Fiji Way	AM	0.86	D	0.31	A	-0.56
		PM	1.20	F	0.54	A	-0.67
15	Lincoln Boulevard & Fiji Way	AM	1.39	F	0.71	C	-0.68
		PM	1.62	F	1.03	F	-0.59
16	Mindanao Way & Marina Expressway EB	AM	1.26	F	0.92	E	-0.35
		PM	1.56	F	0.95	E	-0.61
17	Mindanao Way & Marina Expressway WB	AM	0.94	E	0.50	A	-0.44
		PM	1.33	F	0.74	C	-0.59
18	Culver Boulevard & Jefferson Boulevard	AM	1.62	F	0.94	E	-0.68
		PM	1.88	F	1.06	F	-0.82
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.88	F	0.79	C	-1.09
		PM	2.30	F	0.91	E	-1.39
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.92	E	-
		PM	n/a	-	1.00	F	-

[1] Unsignalized intersections - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

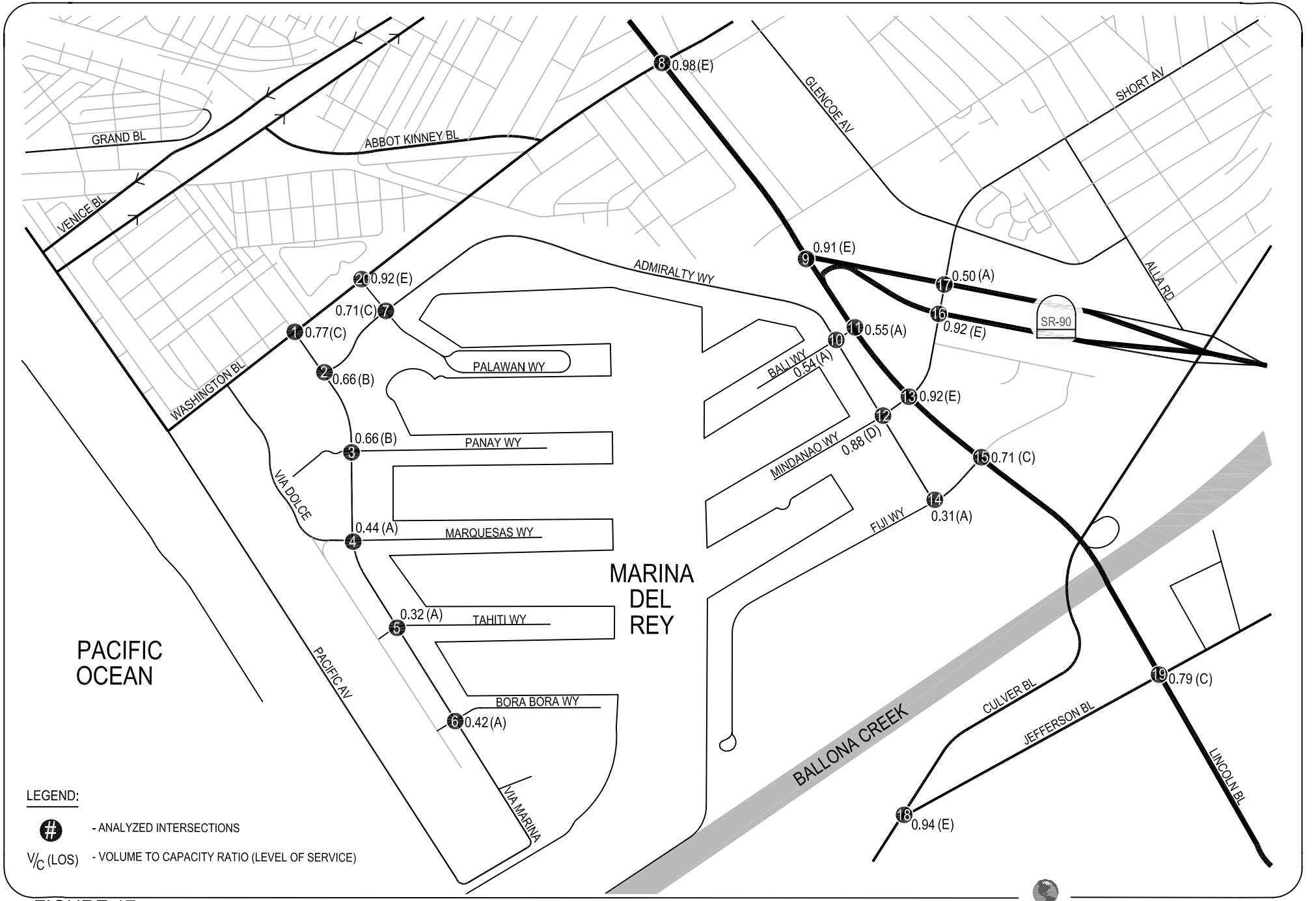


FIGURE 17
CUMULATIVE (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)
AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

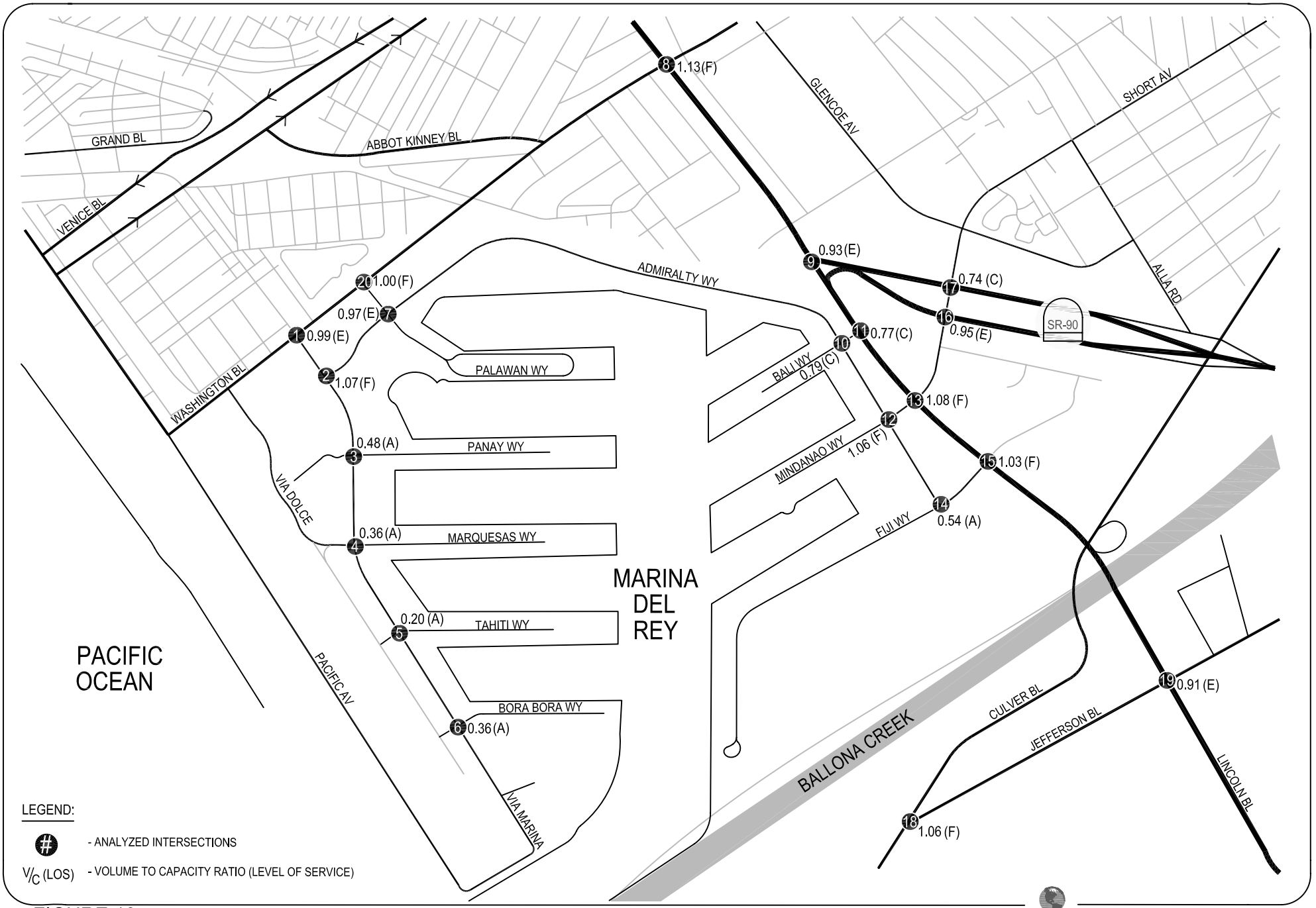


FIGURE 18
CUMULATIVE (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS)
PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

PM Peak Hour

- Via Marina/Admiralty Way – LOS E
- Via Marina/Admiralty Way – LOS F
- Palawan Way/Admiralty Way – LOS E
- Lincoln Boulevard/Washington Boulevard - LOS F
- Lincoln Boulevard/Marina Expressway – LOS E
- Admiralty Way/Mindanao Way – LOS F
- Lincoln Boulevard/Mindanao Way – LOS F
- Lincoln Boulevard/Fiji Way – LOS F
- Mindanao Way/Marina Expressway EB – LOS E
- Lincoln Boulevard/Jefferson Boulevard – LOS E
- Culver Boulevard/Jefferson Boulevard – LOS F
- Palawan Way/Washington Boulevard – LOS F

Capacity calculation worksheets for Cumulative (2020) with Proposed LCP Buildout (including Pipeline Projects) conditions are attached in Appendix K of the report.

COMPARISON TO CUMULATIVE (2010) CONDITIONS (WITH NO MARINA DEVELOPMENT) IN THE 1991/94 DKS STUDY

Table 12 also compares the Cumulative (2020) with Proposed LCP Buildout conditions to the Cumulative (2010) conditions (with no Marina Development) from the 1991/1994 DKS Study. As indicated in the table, all of the analyzed intersections under Cumulative (2020) with Proposed LCP Buildout conditions are projected to operate at better V/C ratios and levels of service than the Cumulative (2010) conditions (with no Marina Development) in the 1991/94 DKS Study. These scenarios do not include any transportation improvement measures.

A discussion of the transportation improvement measures and ensuing traffic conditions is provided in the next chapter.

VI. ASSESSMENT OF TRANSPORTATION IMPROVEMENT MEASURES

The Proposed Project (LCP Amendment) includes changes to the transportation improvement measures that were previously approved as part of the Local Coastal Program. These changes are being advanced in reaction to the changes due to proposed pipeline projects as well as the prevailing and projected future traffic conditions in the region. This chapter addresses the traffic conditions including the effects due to these changes and compares the same to projected traffic conditions with the approved LCP and its mitigation measures in the 1991/1994 DKS Study.

The approved LCP included a Transportation Improvement Program. A detailed description of this improvement program (from *Appendix G of the Local Implementation Program*) is attached in Appendix L-1. The Transportation Improvement Program included three Categories of circulation system improvements – Category 1 improvements consisted of potential internal Marina del Rey improvements; Category 2 improvements were reserved for Area A; and Category 3 improvements consisted of improvements that could be employed to mitigate the cumulative impacts of development in the LCP study area on the regional transportation system serving Marina Del Rey and adjacent areas.

Several updates and changes to this improvement program are being advanced as part of this proposed LCP Amendment. As part of the LCP Amendment, two sets of improvements are being proposed. They include the Revised Set of Intersection Improvement Projects and improvements to regional transportation system.

The Revised Set of Intersection Improvement Projects are described in detail in the following section. The improvements to the regional transportation system would include elements such as intersection improvements at Washington Boulevard/Palawan Way and Lincoln Boulevard/SR 90 Expressway Extension, SR 90 Expressway Extension to Admiralty Way, transit system improvements including regional transit and shuttle system improvements, transportation system management and transportation demand management program improvements. All these potential improvements can only go forward with the agreement of all the agencies including the City of Los Angeles and Caltrans.

LCP AMENDMENT TRANSPORTATION IMPROVEMENTS

The Revised Set of Intersection Improvement Projects being advanced as part of this LCP Amendment (Proposed Project) include the following:

1. Via Marina/Admiralty Way Intersection Improvement Alternatives

    a. Alternative A - The improvement at this intersection includes a third westbound left-turn lane and a second southbound left-turn lane. The westbound approach would provide three left-turn lanes and two right-turn lanes. The southbound approach would provide dual left-turn lanes and two through lanes.
    b. Alternative B - Realign this intersection to make Admiralty Way and Via Marina Way roadway segment south of Admiralty to become east-west roadways and make Via Marina Way north of Admiralty Way to "T" intersect into this roadway. The westbound Admiralty Way roadway would have two through lanes and a right-turn lane. The eastbound re-aligned Via Marina roadway would provide two through lanes and dual left-turn lanes. The re-aligned Via Marina Way southbound approach would provide dual left-turn lanes and a separate right-turn lane

Replace the Admiralty Way 5-Lane Project, recommended as part of the Local Coastal Program, with key intersection improvements (described below) that achieve similar improved operating results.

2. Palawan Way/Admiralty Way Intersection Improvement Alternatives

    a. Alternative A - The southbound approach at this intersection will be restriped to provide a left-turn lane, a shared left-through lane and a separate right-turn lane. The northbound approach would be restriped to provide a shared left-though lane and a shared through-right turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.
    b. Alternative B - Provide an additional lane on the southbound approach. The southbound approach would provide dual left-turn lanes, one through lane and a

separate right-turn lane. The northbound approach would be restriped to provide a shared left-though lane and a separate right-turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.

3. Admiralty Way/Bali Way - The improvement at this intersection includes a second southbound left-turn lane. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane.

4. Admiralty Way/Mindanao Way - The improvement at this intersection includes a second southbound left-turn lane and an additional lane on the eastbound approach. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane. The eastbound approach would provide a left-turn lane, a shared left-through lane and a shared through-right lane. The improvement also includes restriping the westbound approach to provide a left-turn lane, a shared left-through-right lane, and a separate right-turn lane. The east-west signal phase would continue to operate as a split phase due to the lane configurations.

Table 13 provides a description of Intersection Lane Geometry at each of the 20 analyzed intersections for the following three scenarios / conditions:

- Before Improvements
- Proposed LCP Amendment with Improvements
- Approved LCP with Mitigations

As noted above, the LCP Amendment includes the Revised Set of Intersection Improvement Projects within Marina del Rey. With the improvements in place and including improvements at Palawan Way/Washington Boulevard (consisting of provision of a traffic signal and restriping the Palawan Way approach at this intersection), traffic shifts would occur at the study intersections of Via Marina-Ocean Avenue / Washington Boulevard, Via Marina / Admiralty Way and Palawan Way / Admiralty Way. Both scenarios with and without the Washington Boulevard / Palawan Way signalization improvement have been evaluated. The resulting volumes for both scenarios are shown in Appendix M and represent the Future Ambient (2020) with LCP Amendment with Improvements traffic volumes.

FUTURE AMBIENT (2020) WITH LCP AMENDMENT (PIPELINE PROJECTS) AND TRANSPORTATION IMPROVEMENTS TRAFFIC ANALYSIS AND EVALUATION

The Future Ambient (2020) with LCP Amendment with the Revised Set of Intersection Improvement Projects peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized in Table 14. These results are also presented in Figures 19 and 20 for AM and PM peak hours, respectively. As indicated in the table, with the Washington Boulevard / Palawan Way intersection improvement and all the other transportation improvements described in the previous section, all 20 study intersections during the morning peak hour and 19 of the 20 intersections during the evening peak hour are projected to operate at LOS D or better. The remaining intersection (Culver Boulevard / Jefferson Boulevard) is projected to operate at LOS E.

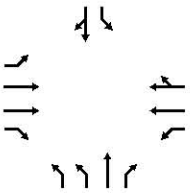
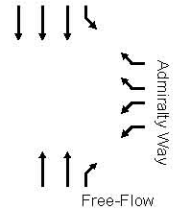
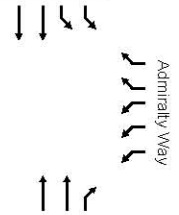
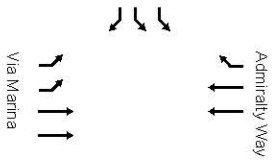
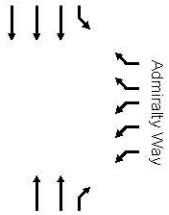
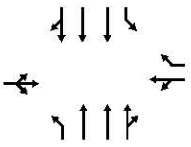
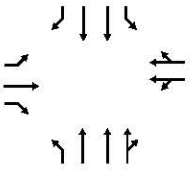
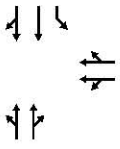
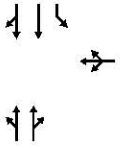
For the scenario without the Washington Boulevard / Palawan Way intersection improvement, it can also be observed from Table 14 that all 20 intersections in the morning peak hour and the same 19 of the 20 intersections in the evening peak hour are projected to operate at level of service (LOS) D or better. The capacity calculation worksheets for Future Ambient (2020) with LCP Amendment with the Revised Set of Intersection Improvement Projects are attached in Appendix M of the report.

COMPARISON TO FUTURE AMBIENT (2010) CONDITIONS IN THE 1991/94 DKS STUDY

Table 14 also compares the Future Ambient (2020) with LCP Amendment with the Revised Set of Intersection Improvement Projects to the Future Ambient (2010) conditions from the 1991/1994 DKS Study.

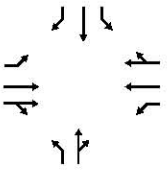
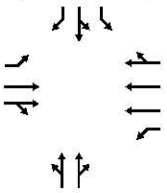
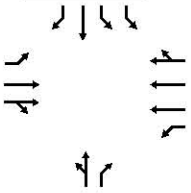
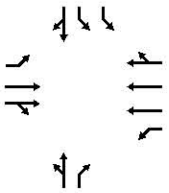
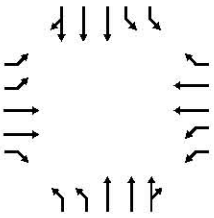
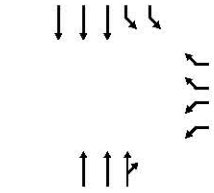
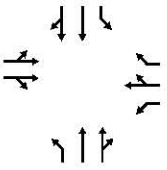
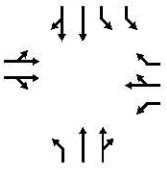
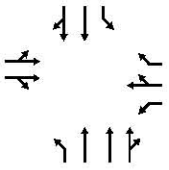
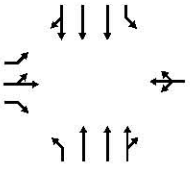
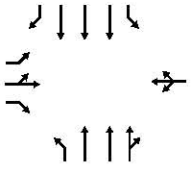
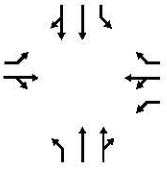
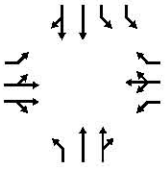
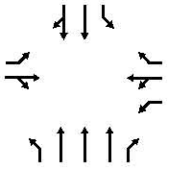
As indicated, all of the analyzed intersections under Future Ambient (2020) with LCP Amendment (Pipeline Projects) with the Revised Set of Intersection Improvement Projects are projected to operate at better V/C ratios and levels of service than the Future Ambient (2010) conditions in the 1991/94 DKS Study.

TABLE 13
SUMMARY OF INTERSECTION LANE GEOMETRY - WITHOUT AND WITH IMPROVEMENTS

	STREET	2009 CONDITIONS [1]	2009 STUDY PROPOSED AMENDMENT WITH IMPROVEMENTS [1]	1991/1994 DKS STUDY APPROVED LCP WITH MITIGATIONS
1	N/S: Via Marina-Ocean Av E/W: Washington Bl (Traffic Signal)		Same as Existing	Same as Existing
2	N/S: Via Marina E/W: Admiralty Wy (Traffic Signal)		ALTERNATIVE A  ALTERNATIVE B Via Marina 	
3	N/S: Via Marina E/W: Panay Wy (Traffic Signal)		Same as Existing	Same as Existing
4	N/S: Via Marina E/W: Marquesas Wy (Traffic Signal)		Same as Existing	Same as Existing
5	N/S: Via Marina E/W: Tahiti Wy (Traffic Signal)		Same as Existing	Same as Existing
6	N/S: Via Marina E/W: Bora Bora Wy (Stop-Controlled on minor approach)		Same as Existing	Same as Existing

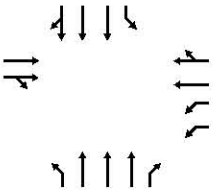
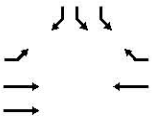
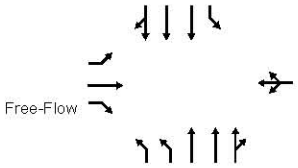
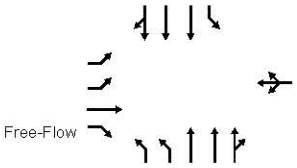
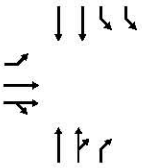
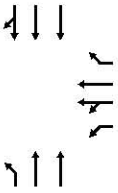
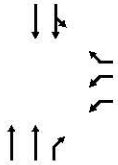
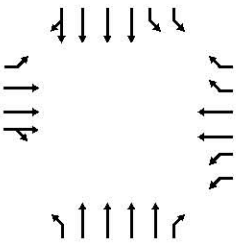
[1] All signalized intersections include ATSAC and ATCS credit of 0.10.

TABLE 13 (continued)
SUMMARY OF INTERSECTION LANE GEOMETRY - WITHOUT AND WITH IMPROVEMENTS

	STREET	2009 CONDITIONS [1]	2009 STUDY PROPOSED AMENDMENT WITH IMPROVEMENTS [1]	1991/1994 DKS STUDY APPROVED LCP WITH MITIGATIONS
7	N/S: Palawan Wy E/W: Admiralty Wy (Traffic Signal)		ALTERNATIVE A  ALTERNATIVE B 	
8	N/S: Lincoln Bl E/W: Washington Bl (Traffic Signal)		Same as Existing	Same as Existing
9	N/S: Lincoln Bl E/W: SR-90 On/Off Ramps (Traffic Signal)		Same as Existing	Same as Existing
10	N/S: Admiralty Wy E/W: Bali Wy (Traffic Signal)			
11	N/S: Lincoln Bl E/W: Bali Wy (Traffic Signal)		Same as Existing	
12	N/S: Admiralty Wy E/W: Mindanao Wy (Traffic Signal)			

[1] All signalized intersections include ATSAC and ATCS credit of 0.10.

TABLE 13 (continued)
SUMMARY OF INTERSECTION LANE GEOMETRY - WITHOUT AND WITH IMPROVEMENTS

	STREET	2009 CONDITIONS [1]	2009 STUDY PROPOSED AMENDMENT WITH IMPROVEMENTS [1]	1991/1994 DKS STUDY APPROVED LCP WITH MITIGATIONS
13	N/S: Lincoln Bl E/W: Mindanao Wy (Traffic Signal)		Same as Existing	Same as Existing
14	N/S: Admiralty Wy E/W: Fiji Wy (Traffic Signal)	Free-Flow  Free-Flow	Same as Existing	Widen SB Appoach Provide 3 through lanes
15	N/S: Lincoln Bl E/W: Fiji Wy (Traffic Signal)	 Free-Flow	Same as Existing	 Free-Flow
16	N/S: Mindanao Wy E/W: Marina Expressway (SR-90) East (Traffic Signal)		Same as Existing	Same as Existing
17	N/S: Mindanao Wy E/W: Marina Expressway (SR-90) West (Traffic Signal)		Same as Existing	Same as Existing
18	N/S: Culver Bl E/W: Jefferson Bl (Traffic Signal)	 Free-Flow	Same as Existing	Same as Existing
19	N/S: Lincoln Bl E/W: Jefferson Bl (Traffic Signal)		Same as Existing	Same as Existing

[1] All signalized intersections include ATSAC and ATCS credit of 0.10.

TABLE 13 (continued)
SUMMARY OF INTERSECTION LANE GEOMETRY - WITHOUT AND WITH IMPROVEMENTS

	STREET	2009 CONDITIONS [1]	2009 STUDY PROPOSED AMENDMENT WITH IMPROVEMENTS [1]	1991/1994 DKS STUDY APPROVED LCP WITH MITIGATIONS
20	N/S: Palawan Way E/W: Washington Bl	Stop-controlled	Add Signal w/ATSAC & ATCS [2]	Same as Existing

[1] All signalized intersections include ATSAC and ATCS credit of 0.10.
[2] Not a part of the Revised Set of Intersection Improvements

TABLE 14
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Ambient (2010) Conditions V/C	LOS	2009 Study Ambient (2020) with LCP Amendment (Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	0.75	C	0.49	A	-0.26
		PM	1.05	F	0.73	C	-0.32
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.56	A	0.30	A	-0.26
		PM	0.91	E	0.51	A	-0.40
					Alternative B		
					0.41	A	-0.15
					0.61	B	-0.30
3	Via Marina & Panay Way	AM	0.63	B	0.44	A	-0.19
		PM	0.59	A	0.33	A	-0.26
4	Via Marina & Marquesas Way	AM	0.35	A	0.38	A	0.03
		PM	0.44	A	0.29	A	-0.15
5	Via Marina & Tahiti Way	AM	0.46	A	0.27	A	-0.19
		PM	0.43	A	0.18	A	-0.26
6	Via Marina & Bora Bora Way [1]	AM	0.38	A	0.36	A	-0.02
		PM	0.37	A	0.33	A	-0.04
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.75	C	0.48	A	-0.27
		PM	1.16	F	0.77	C	-0.39
					Alternative B		
					0.48	A	-0.27
					0.72	C	-0.44
8	Lincoln Boulevard & Washington Boulevard	AM	1.41	F	0.80	C	-0.61
		PM	1.67	F	0.89	D	-0.78
9	Lincoln Boulevard & Marina Expressway	AM	1.16	F	0.75	C	-0.41
		PM	1.34	F	0.73	C	-0.61
10	Admiralty Way & Bali Way	AM	0.63	B	0.41	A	-0.22
		PM	1.08	F	0.62	B	-0.46
11	Lincoln Boulevard & Bali Way	AM	0.80	C	0.46	A	-0.34
		PM	1.14	F	0.61	B	-0.53

TABLE 14 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Ambient (2010) Conditions V/C	LOS	2009 Study Ambient (2020) with LCP Amendment (Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
12	Admiralty Way & Mindanao Way	AM	0.88	D	0.47	A	-0.41
		PM	1.10	F	0.69	B	-0.41
13	Lincoln Boulevard & Mindanao Way	AM	1.24	F	0.77	C	-0.47
		PM	1.26	F	0.88	D	-0.38
14	Admiralty Way & Fiji Way	AM	0.35	A	0.25	A	-0.10
		PM	0.55	A	0.44	A	-0.11
15	Lincoln Boulevard & Fiji Way	AM	0.80	C	0.58	A	-0.22
		PM	1.18	F	0.85	D	-0.33
16	Mindanao Way & Marina Expressway EB	AM	1.20	F	0.73	C	-0.47
		PM	1.32	F	0.86	D	-0.46
17	Mindanao Way & Marina Expressway WB	AM	0.83	D	0.43	A	-0.40
		PM	1.14	F	0.62	B	-0.52
18	Culver Boulevard & Jefferson Boulevard	AM	1.28	F	0.89	D	-0.39
		PM	1.40	F	0.95	E	-0.45
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.42	F	0.59	A	-0.83
		PM	1.38	F	0.78	C	-0.61
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.46	A	-
		PM	n/a	-	0.44	A	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

TABLE 14 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Ambient (2010) Conditions V/C	LOS	2009 Study Ambient (2020) with LCP Amendment (Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
WITHOUT PALAWAN WAY/WASHINGTON BOULEVARD IMPROVEMENT							
1	Via Marina & Washington Boulevard	AM	0.75	C	0.61	B	-0.14
		PM	1.05	F	0.84	D	-0.21
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.56	A	0.40	A	-0.17
		PM	0.91	E	0.56	A	-0.36
					Alternative B		
					0.59	A	0.03
					0.66	B	-0.25
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.75	C	0.48	A	-0.27
		PM	1.16	F	0.78	C	-0.38
					Alternative B		
					0.48	A	-0.27
					0.73	C	-0.44
20	Palawan Way & Washington Boulevard [1]	AM	n/a	-	0.77	C	-
		PM	n/a	-	0.88	D	-

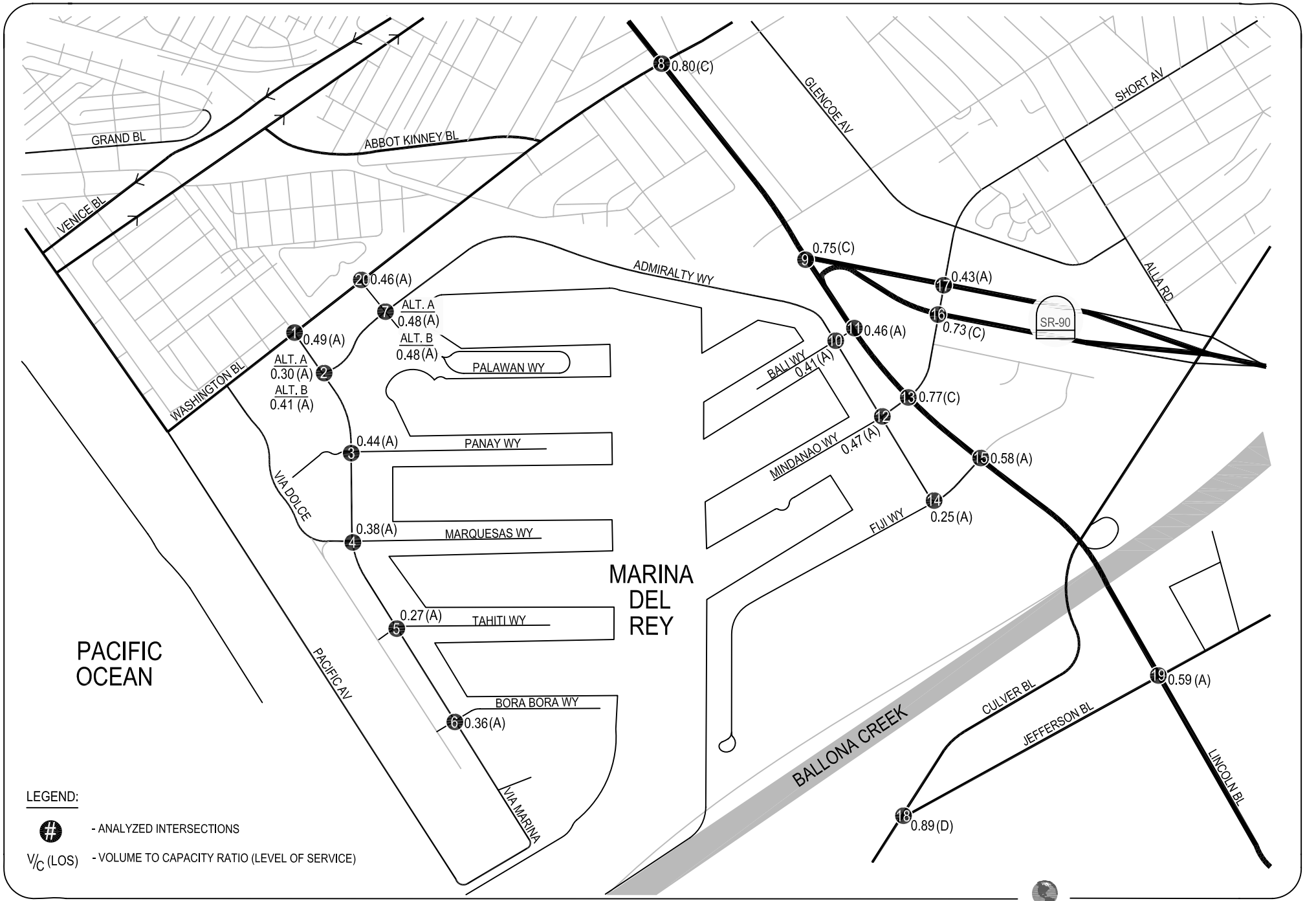


FIGURE 19
FUTURE AMBIENT (2020) WITH PIPELINE PROJECTS AND IMPROVEMENTS
AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

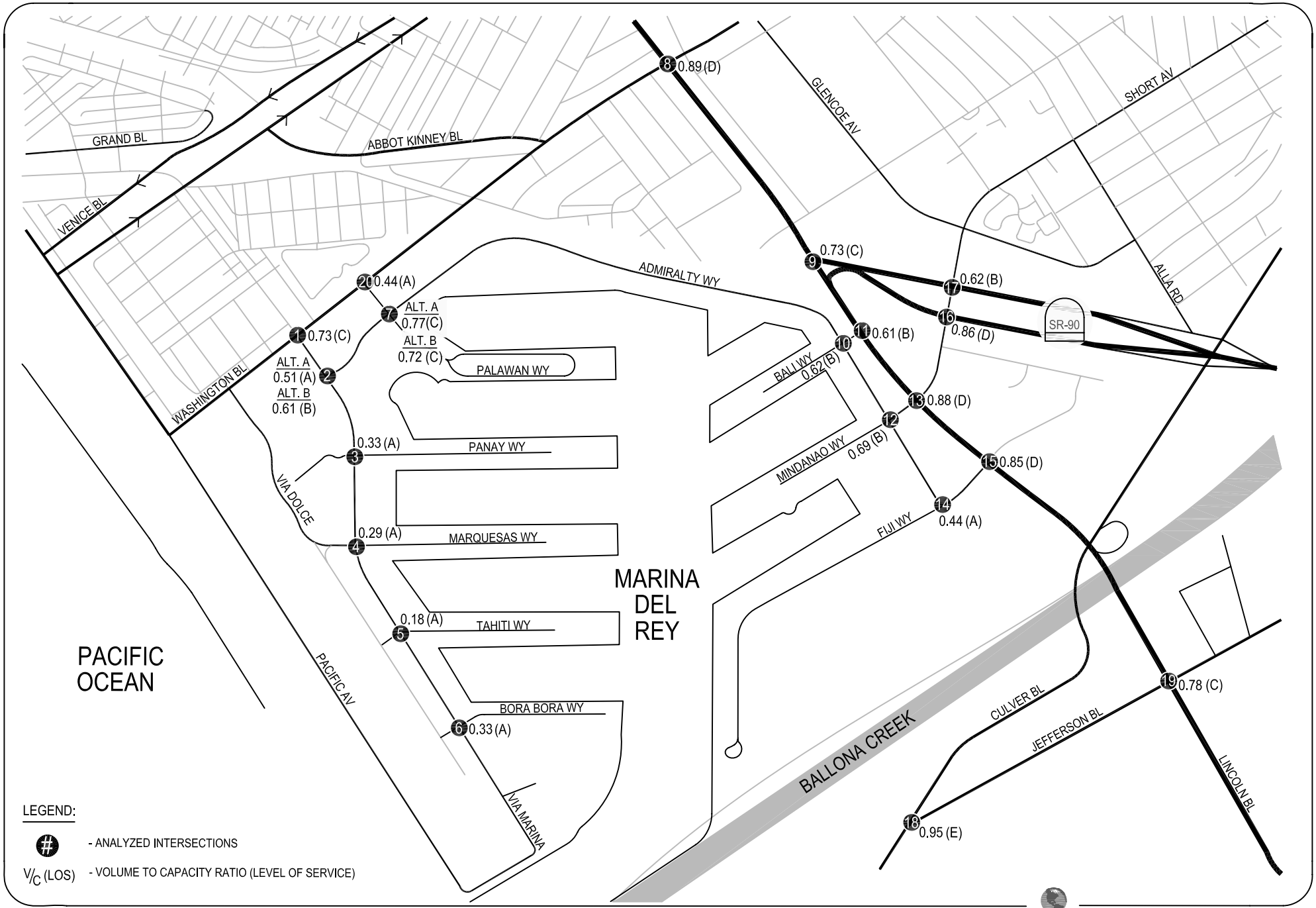


FIGURE 20
FUTURE AMBIENT (2020) WITH PIPELINE PROJECTS AND IMPROVEMENTS
PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND TRANSPORTATION IMPROVEMENTS TRAFFIC ANALYSIS AND EVALUATION

With the improvements in place and including improvements at Palawan Way/Washington Boulevard (consisting of provision of a traffic signal and restriping the Palawan Way approach at this intersection), traffic shifts would occur at the study intersections of Via Marina-Ocean Avenue / Washington Boulevard, Via Marina / Admiralty Way and Palawan Way / Admiralty Way. Both Future Ambient (2020) with Proposed LCP Buildout (including Pipeline Projects) and the Revised Set of Intersection Improvement Projects scenarios with and without the Washington Boulevard / Palawan Way signalization improvement have been evaluated. The resulting volumes for both scenarios are shown in Appendix N and represent the Future Ambient (2020) with Proposed LCP Buildout (including Pipeline Projects) with the Revised Set of Intersection Improvement Projects traffic volumes.

These peak hour traffic volumes were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized in Table 15. These results are also presented in Figures 21 and 22 for AM and PM peak hours, respectively. As indicated in the table, with the Washington Boulevard / Palawan Way intersection improvement and all the other transportation improvements described in the previous section, all 20 study intersections during the morning peak hour and 15 of the 20 intersections during the evening peak hour are projected to operate at LOS D or better. The remaining intersections in the evening peak hour are projected to operate at LOS E or F as listed below.

<u>PM Peak Hour</u>

- Lincoln Boulevard / Washington Boulevard – LOS E
- Lincoln Boulevard / Mindanao Way – LOS E
- Lincoln Boulevard / Fiji Way – LOS E
- Mindanao Way / Marina Expressway EB – LOS E
- Culver Boulevard / Jefferson Boulevard – LOS F

TABLE 15
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Study [2] Future Ambient (2010) w/Approved LCP Development with Mitigations V/C	LOS	2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.04	F	0.63	B	-0.41
		PM	1.38	F	0.86	D	-0.52
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.63	B	0.38	A	-0.25
		PM	0.82	D	0.60	B	-0.22
					Alternative B		
					0.50	A	-0.13
					0.73	C	-0.09
3	Via Marina & Panay Way	AM	0.81	D	0.65	B	-0.16
		PM	0.74	C	0.47	A	-0.27
4	Via Marina & Marquesas Way	AM	0.45	A	0.43	A	-0.02
		PM	0.53	A	0.35	A	-0.18
5	Via Marina & Tahiti Way	AM	0.58	A	0.31	A	-0.27
		PM	0.53	A	0.19	A	-0.34
6	Via Marina & Bora Bora Way [1]	AM	0.49	A	0.41	A	-0.09
		PM	0.46	A	0.35	A	-0.11
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.79	C	0.63	B	-0.16
		PM	0.94	E	0.88	D	-0.06
					Alternative B		
					0.61	B	-0.18
					0.82	D	-0.12
8	Lincoln Boulevard & Washington Boulevard	AM	1.47	F	0.86	D	-0.62
		PM	1.47	F	0.98	E	-0.49
9	Lincoln Boulevard & Marina Expressway	AM	1.21	F	0.78	C	-0.43
		PM	1.21	F	0.77	C	-0.44
10	Admiralty Way & Bali Way	AM	0.81	D	0.48	A	-0.33
		PM	0.98	E	0.74	C	-0.24
11	Lincoln Boulevard & Bali Way	AM	0.82	D	0.47	A	-0.35
		PM	1.04	F	0.68	B	-0.37

TABLE 15 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

			1991/1994 Study [2] Future Ambient (2010) w/Approved LCP Development with Mitigations		2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) with Improvements		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	0.78	C	0.57	A	-0.21
		PM	1.00	F	0.81	D	-0.19
13	Lincoln Boulevard & Mindanao Way	AM	1.21	F	0.86	D	-0.35
		PM	1.25	F	0.95	E	-0.30
14	Admiralty Way & Fiji Way	AM	0.60	B	0.28	A	-0.32
		PM	0.83	D	0.51	A	-0.32
15	Lincoln Boulevard & Fiji Way	AM	0.83	D	0.61	B	-0.22
		PM	1.07	F	0.92	E	-0.15
16	Mindanao Way & Marina Expressway EB	AM	1.18	F	0.82	D	-0.36
		PM	1.33	F	0.90	E	-0.43
17	Mindanao Way & Marina Expressway WB	AM	0.81	D	0.47	A	-0.34
		PM	1.07	F	0.68	B	-0.40
18	Culver Boulevard & Jefferson Boulevard	AM	1.34	F	0.89	D	-0.45
		PM	1.48	F	0.95	E	-0.53
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.37	F	0.61	B	-0.76
		PM	1.46	F	0.78	C	-0.68
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.54	A	-
		PM	n/a	-	0.50	A	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

TABLE 15 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

			1991/1994 Study [2] Future Ambient (2010) w/Approved LCP Development with Mitigations		2009 Study Future (2020) with Proposed LCP Buildout (incl. Pipeline Projects) with Improvements		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
WITHOUT PALAWAN WAY/WASHINGTON BOULEVARD IMPROVEMENT							
1	Via Marina & Washington Boulevard	AM	1.04	F	0.74	C	-0.30
		PM	1.38	F	0.97	E	-0.41
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.63	B	0.45	A	-0.18
		PM	0.82	D	0.65	B	-0.17
					Alternative B		
					0.65	B	0.02
					0.77	C	-0.05
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.79	C	0.63	B	-0.16
		PM	0.94	E	0.89	D	-0.05
					Alternative B		
					0.61	B	-0.18
					0.83	D	-0.11
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.90	D	-
		PM	n/a	-	0.98	E	-

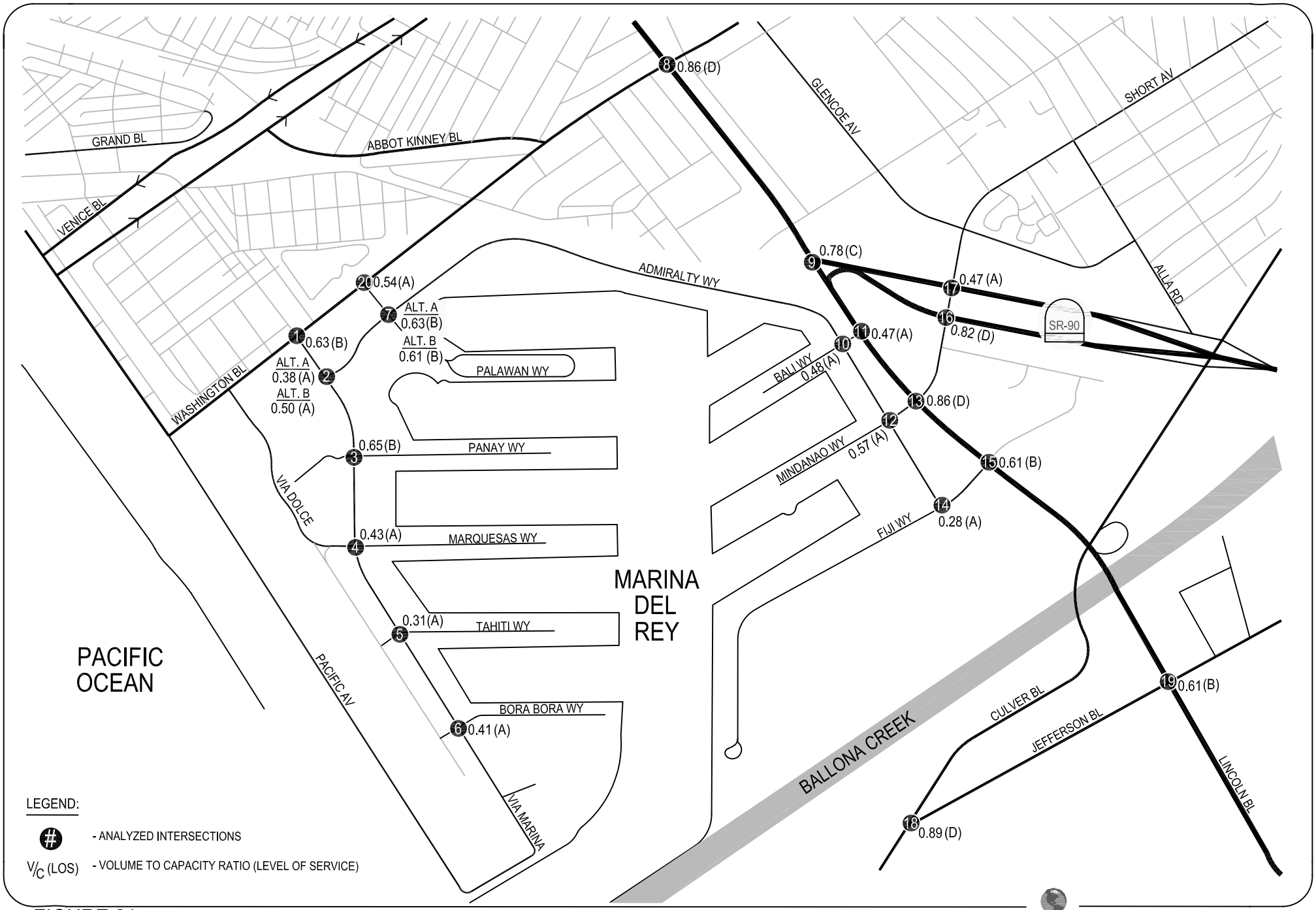


FIGURE 21
FUTURE AMBIENT (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

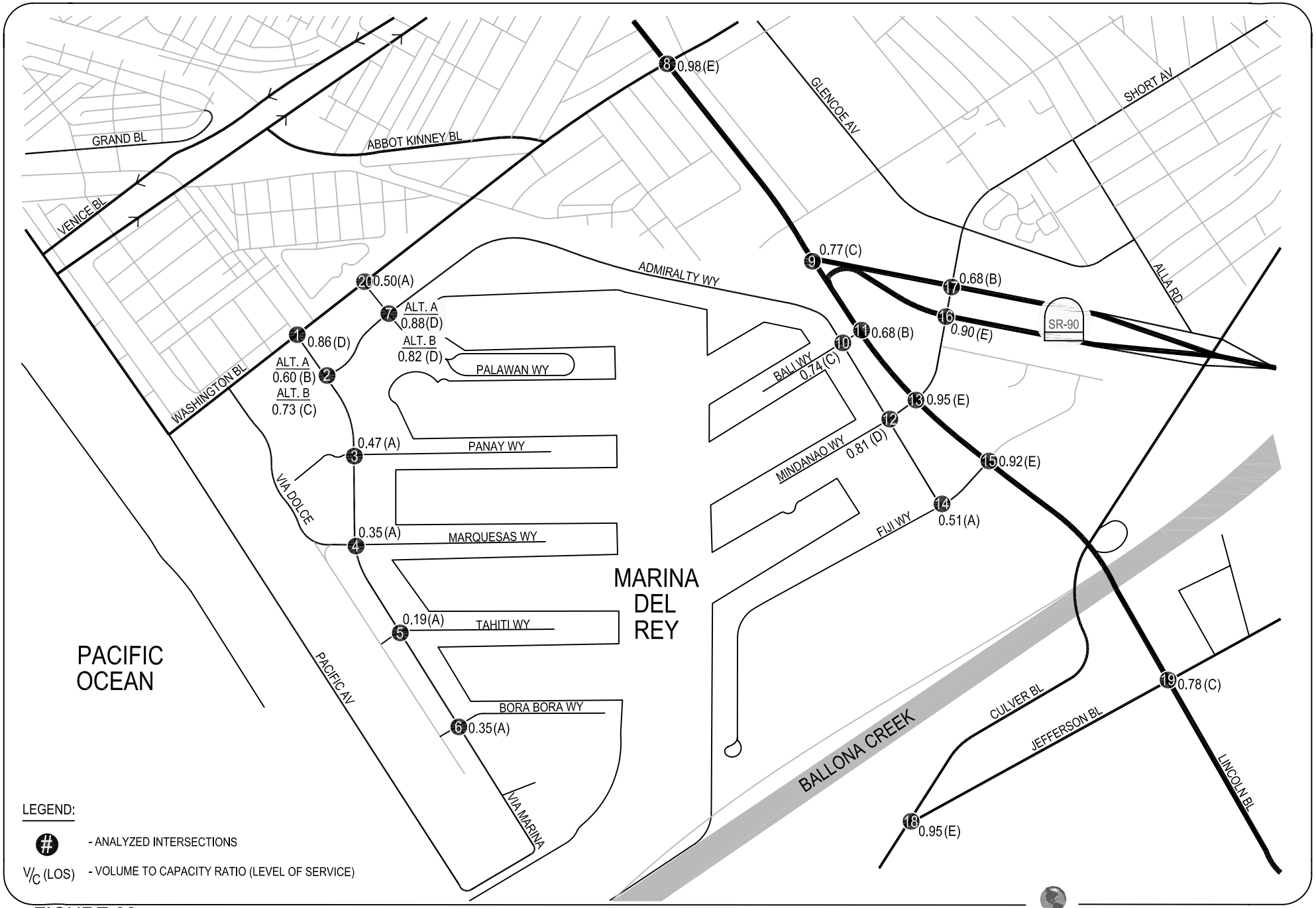


FIGURE 22
FUTURE AMBIENT (2020) PLUS PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

For the scenario without the Washington Boulevard / Palawan Way intersection improvement, it can also be observed from Table 15 that all 20 intersections in the morning peak hour and 13 of the 20 intersections in the evening peak hour are projected to operate at level of service (LOS) D or better. In addition to the locations listed under the scenario with Washington Boulevard / Palawan Way intersection improvement, the other locations that would be operating at failing levels of service under this scenario would be:

PM Peak Hour

- Palawan Way / Washington Boulevard – LOS F
- Via Marina Way / Washington Boulevard – LOS E

The capacity calculation worksheets for Future Ambient (2020) with Proposed LCP Buildout with Improvement conditions (with and without the Washington / Palawan intersection improvement) are attached in Appendix N of the report.

COMPARISON TO FUTURE AMBIENT (2010) APPROVED LCP WITH MITIGATIONS CONDITIONS IN THE 1991/94 DKS STUDY

Table 15 also compares the Future Ambient (2020) with Proposed LCP Buildout (including Pipeline Projects) with the Revised Set of Intersection Improvement Projects to the Future Ambient (2010) with Approved LCP with Mitigation conditions from the 1991/1994 DKS Study. Comparisons of V/C ratios and Levels of Service at each of the analysis locations under the two scenarios during AM and PM peak hours, respectively, are also provided in Figures 23 and 24.

As indicated, all of the analyzed intersections under Future Ambient (2020) with Proposed LCP Buildout (including Pipeline Projects) with the Revised Set of Intersection Improvement Projects are projected to operate at better V/C ratios and levels of service than the Future Ambient (2010) with Approved LCP and Mitigations conditions in the 1991/94 DKS Study.

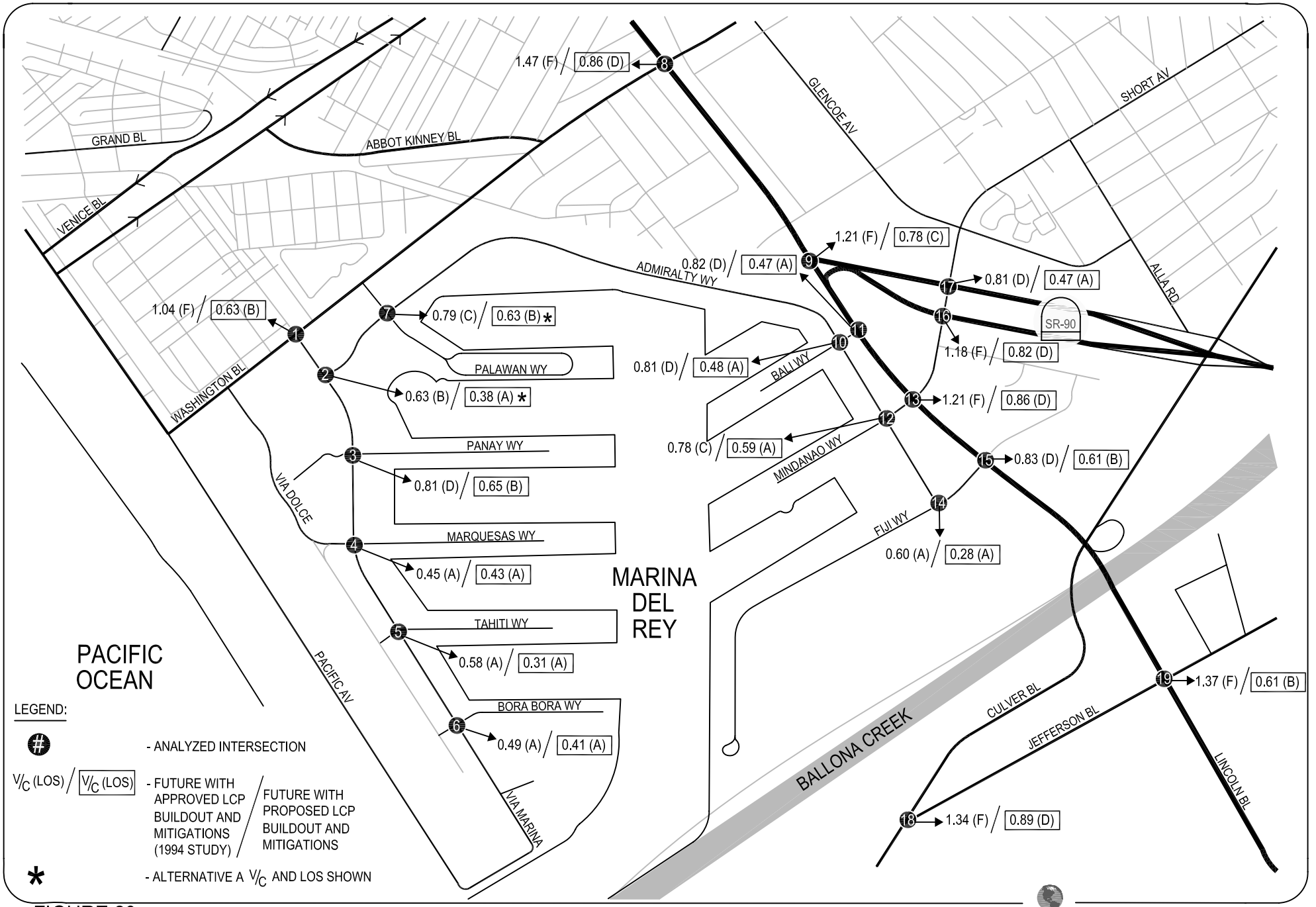


FIGURE 23
FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT CONDITIONS AND IMPROVEMENTS VS. APPROVED LCP BUILDOUT AND MITIGATIONS (1991/94 STUDY) - AM PEAK HOUR

RAJU Associates, Inc.

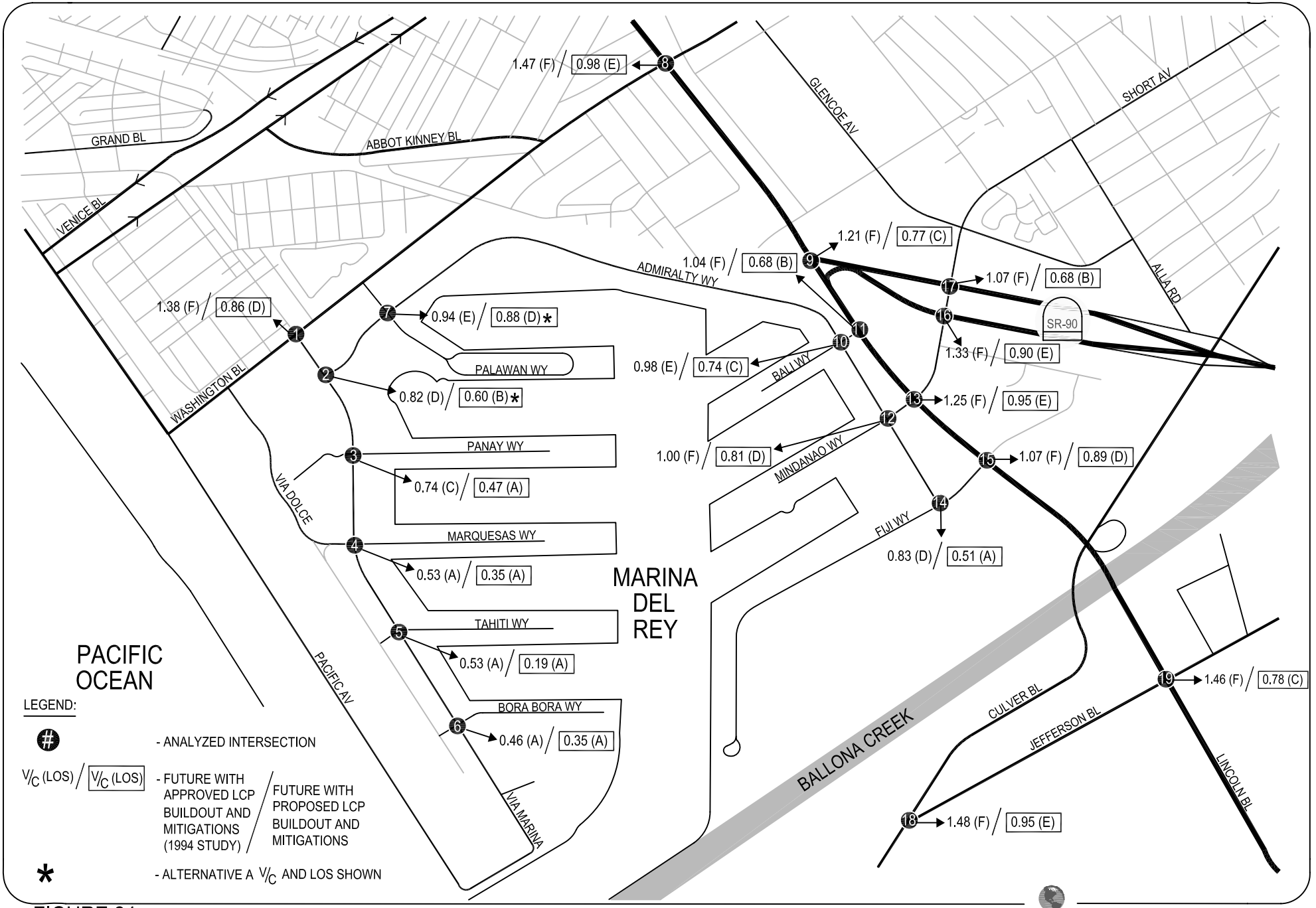


FIGURE 24
FUTURE AMBIENT (2020) WITH PROPOSED LCP BUILDOUT CONDITIONS AND IMPROVEMENTS VS. APPROVED LCP BUILDOUT AND MITIGATIONS (1991/94 STUDY) - PM PEAK HOUR

RAJU Associates, Inc.

CUMULATIVE (2020) WITH LCP AMENDMENT (PIPELINE PROJECTS) AND TRANSPORTATION IMPROVEMENTS TRAFFIC ANALYSIS AND EVALUATION

The Future Cumulative (2020) with LCP Amendment (Pipeline Projects) with the Revised Set of Intersection Improvement Projects peak hour traffic volumes (attached in Appendix O) were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized in Table 16. These results are also presented in Figures 25 and 26 for AM and PM peak hours, respectively. The capacity calculation worksheets are also included in Appendix O.

As indicated in the Table 16, with the Washington Boulevard / Palawan Way intersection improvement and all the other transportation improvements described in the previous section, 18 of the 20 study intersections during the morning peak hour and 15 of the 20 intersections during the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F as listed below.

AM Peak Hour

- Lincoln Boulevard / Washington Boulevard – LOS E
- Culver Boulevard / Jefferson Boulevard – LOS E

PM Peak Hour

- Lincoln Boulevard / Washington Boulevard – LOS F
- Lincoln Boulevard / Mindanao Way – LOS E
- Lincoln Boulevard / Fiji Way – LOS E
- Culver Boulevard / Jefferson Boulevard – LOS F
- Lincoln Boulevard / Jefferson Boulevard – LOS E

For the scenario without the Washington Boulevard / Palawan Way intersection improvement, but with all the other transportation improvements within the Marina, the same number of intersections would be operating at LOS D or better as those projected under the conditions with the Washington Boulevard / Palawan Way intersection improvement.

TABLE 16
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) with LCP Amendment (Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.06	F	0.52	A	-0.54
		PM	1.68	F	0.78	C	-0.90
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.79	C	0.32	A	-0.47
		PM	1.27	F	0.53	A	-0.74
					Alternative B		
					0.43	A	-0.36
					0.64	B	-0.63
3	Via Marina & Panay Way	AM	0.74	C	0.45	A	-0.29
		PM	0.72	C	0.34	A	-0.38
4	Via Marina & Marquesas Way	AM	0.46	A	0.39	A	-0.07
		PM	0.58	A	0.29	A	-0.29
5	Via Marina & Tahiti Way	AM	0.53	A	0.28	A	-0.25
		PM	0.55	A	0.19	A	-0.37
6	Via Marina & Bora Bora Way [1]	AM	0.44	A	0.37	A	-0.07
		PM	0.45	A	0.34	A	-0.11
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.93	E	0.51	A	-0.42
		PM	1.38	F	0.79	C	-0.59
					Alternative B		
					0.51	A	-0.42
					0.74	C	-0.64
8	Lincoln Boulevard & Washington Boulevard	AM	1.94	F	0.94	E	-1.00
		PM	2.40	F	1.03	F	-1.37
9	Lincoln Boulevard & Marina Expressway	AM	1.77	F	0.88	D	-0.89
		PM	2.04	F	0.88	D	-1.16
10	Admiralty Way & Bali Way	AM	0.84	D	0.42	A	-0.42
		PM	1.32	F	0.65	B	-0.67
11	Lincoln Boulevard & Bali Way	AM	1.08	F	0.55	A	-0.53
		PM	1.49	F	0.70	B	-0.79

TABLE 16 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

			1991/1994 Approved Study [2] Cumulative (2010) Conditions		2009 Study Cumulative (2020) with LCP Amendment (Pipeline Projects) with Improvements		Difference in
Map #	INTERSECTION	Peak Hour	V/C	LOS	V/C	LOS	V/C
12	Admiralty Way & Mindanao Way	AM	1.00	E	0.49	A	-0.51
		PM	1.26	F	0.73	C	-0.53
13	Lincoln Boulevard & Mindanao Way	AM	1.51	F	0.85	D	-0.66
		PM	1.73	F	1.00	E	-0.74
14	Admiralty Way & Fiji Way	AM	0.86	D	0.28	A	-0.58
		PM	1.20	F	0.47	A	-0.74
15	Lincoln Boulevard & Fiji Way	AM	1.39	F	0.68	B	-0.71
		PM	1.62	F	0.97	E	-0.66
16	Mindanao Way & Marina Expressway EB	AM	1.26	F	0.82	D	-0.44
		PM	1.56	F	0.90	D	-0.66
17	Mindanao Way & Marina Expressway WB	AM	0.94	E	0.46	A	-0.48
		PM	1.33	F	0.68	B	-0.65
18	Culver Boulevard & Jefferson Boulevard	AM	1.62	F	0.94	E	-0.68
		PM	1.88	F	1.06	F	-0.82
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.88	F	0.78	C	-1.10
		PM	2.30	F	0.91	E	-1.40
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.49	A	-
		PM	n/a	-	0.45	A	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

TABLE 16 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH LCP AMENDMENT (PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) with LCP Amendment (Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
WITHOUT PALAWAN WAY/WASHINGTON BOULEVARD IMPROVEMENT							
1	Via Marina & Washington Boulevard	AM	1.06	F	0.64	B	-0.42
		PM	1.68	F	0.86	D	-0.82
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.79	C	0.41	A	-0.39
		PM	1.27	F	0.58	A	-0.69
					Alternative B		
					0.60	B	-0.19
					0.68	B	-0.59
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.93	E	0.51	A	-0.42
		PM	1.38	F	0.80	C	-0.58
					Alternative B		
					0.50	A	-0.43
					0.74	C	-0.64
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.80	D	-
		PM	n/a	-	0.90	D	-

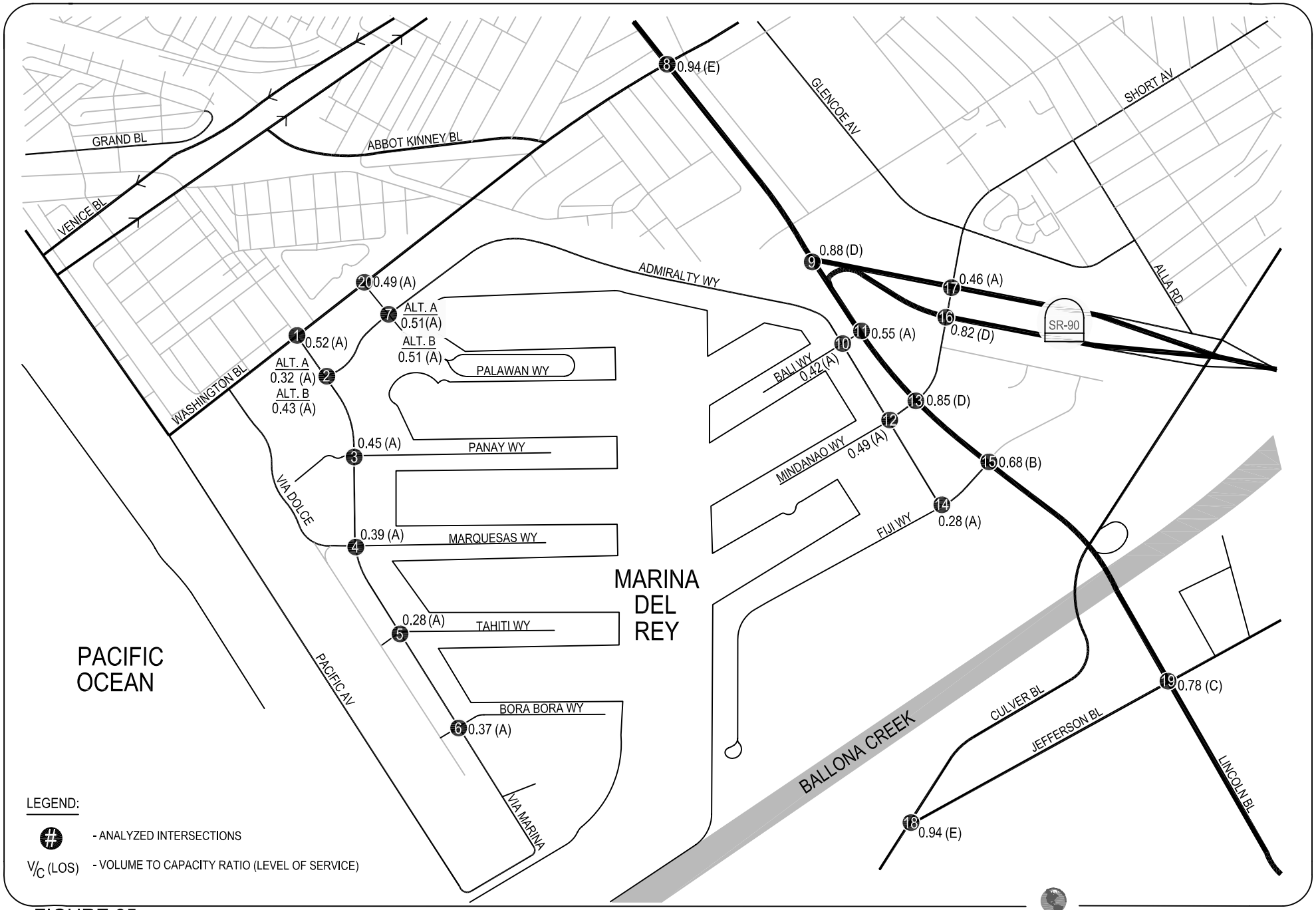


FIGURE 25
CUMULATIVE (2020) WITH PIPELINE PROJECTS AND IMPROVEMENTS
AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

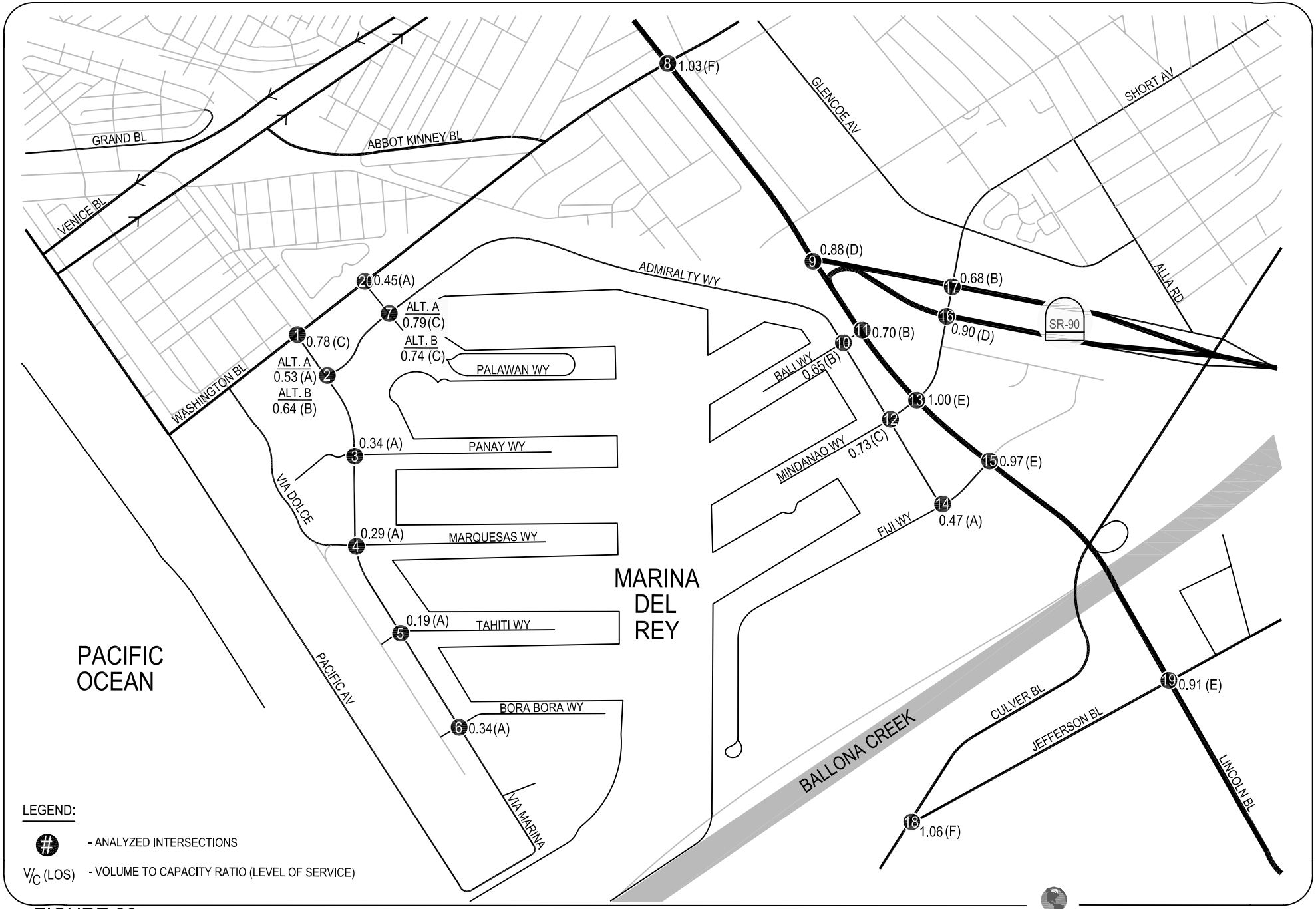


FIGURE 26
CUMULATIVE (2020) WITH PIPELINE PROJECTS AND IMPROVEMENTS
PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

COMPARISON OF FUTURE CUMULATIVE (2020) WITH LCP AMENDMENT WITH TRANSPORTATION IMPROVEMENTS TO FUTURE CUMULATIVE (2010) WITH NO MARINA DEVELOPMENT CONDITIONS IN THE 1991/94 DKS STUDY

Table 16 also compares the Future Cumulative (2020) with LCP Amendment (Pipeline Projects) with the Revised Set of Intersection Improvement Projects to the Future Cumulative (2010) with no Marina Development conditions from the 1991/1994 DKS Study (since there was no cumulative analysis with Marina development in the DKS Study). As indicated, all of the analyzed intersections under Future Cumulative (2020) with LCP Amendment (Pipeline Projects) with the Revised Set of Intersection Improvement Projects are projected to operate at better V/C ratios and levels of service than the Future Cumulative (2010) with no Marina Development conditions in the 1991/94 DKS Study.

CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND TRANSPORTATION IMPROVEMENTS TRAFFIC ANALYSIS AND EVALUATION

The Future Cumulative (2020) with the Proposed LCP Buildout (including Pipeline Projects) with the Revised Set of Intersection Improvement Projects peak hour traffic volumes (attached in Appendix P) were analyzed to determine the volume to capacity (V/C) ratio and LOS at each of the analyzed intersections. The results of this analysis are summarized in Table 17. These results are also presented in Figures 27 and 28 for AM and PM peak hours, respectively. The level of service worksheets are also attached in Appendix P.

As indicated in the Table 17, with the Washington Boulevard / Palawan Way intersection improvement and all the other transportation improvements described in the previous section, 15 of the 20 study intersections during the morning peak hour and 12 of the 20 intersections during the evening peak hour are projected to operate at LOS D or better. The remaining intersections are projected to operate at LOS E or F as listed below.

<u>AM Peak Hour</u>

- Lincoln Boulevard / Washington Boulevard – LOS E
- Lincoln Boulevard / Marina Expressway – LOS E
- Lincoln Boulevard / Mindanao Way – LOS E
- Marina Expressway EB / Mindanao Way – LOS E
- Culver Boulevard / Jefferson Boulevard – LOS E

TABLE 17
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) with Proposed LCP Development (incl. Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
1	Via Marina & Washington Boulevard	AM	1.06	F	0.66	B	-0.40
		PM	1.68	F	0.89	D	-0.79
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.79	C	0.40	A	-0.39
		PM	1.27	F	0.63	B	-0.64
					Alternative B		
					0.53	A	-0.26
					0.75	C	-0.52
3	Via Marina & Panay Way	AM	0.74	C	0.66	B	-0.08
		PM	0.72	C	0.48	A	-0.24
4	Via Marina & Marquesas Way	AM	0.46	A	0.44	A	-0.02
		PM	0.58	A	0.36	A	-0.22
5	Via Marina & Tahiti Way	AM	0.53	A	0.32	A	-0.21
		PM	0.55	A	0.20	A	-0.35
6	Via Marina & Bora Bora Way [1]	AM	0.44	A	0.42	A	-0.02
		PM	0.45	A	0.36	A	-0.09
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.93	E	0.66	B	-0.27
		PM	1.38	F	0.91	E	-0.48
					Alternative B		
					0.64	B	-0.29
					0.84	D	-0.54
8	Lincoln Boulevard & Washington Boulevard	AM	1.94	F	0.98	E	-0.96
		PM	2.40	F	1.13	F	-1.27
9	Lincoln Boulevard & Marina Expressway	AM	1.77	F	0.91	E	-0.86
		PM	2.04	F	0.93	E	-1.11
10	Admiralty Way & Bali Way	AM	0.84	D	0.49	A	-0.35
		PM	1.32	F	0.78	C	-0.54
11	Lincoln Boulevard & Bali Way	AM	1.08	F	0.58	A	-0.50
		PM	1.49	F	0.77	C	-0.72

TABLE 17 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	1991/1994 Approved Study [2] Cumulative (2010) Conditions LOS	2009 Study Cumulative (2020) with Proposed LCP Development (incl. Pipeline Projects) with Improvements V/C	2009 Study Cumulative (2020) with Proposed LCP Development (incl. Pipeline Projects) with Improvements LOS	Difference in V/C
12	Admiralty Way & Mindanao Way	AM	1.00	E	0.58	A	-0.42
		PM	1.26	F	0.85	D	-0.41
13	Lincoln Boulevard & Mindanao Way	AM	1.51	F	0.94	E	-0.57
		PM	1.73	F	1.07	F	-0.66
14	Admiralty Way & Fiji Way	AM	0.86	D	0.31	A	-0.56
		PM	1.20	F	0.54	A	-0.67
15	Lincoln Boulevard & Fiji Way	AM	1.39	F	0.71	C	-0.68
		PM	1.62	F	1.03	F	-0.59
16	Mindanao Way & Marina Expressway EB	AM	1.26	F	0.92	E	-0.35
		PM	1.56	F	0.95	E	-0.61
17	Mindanao Way & Marina Expressway WB	AM	0.94	E	0.50	A	-0.44
		PM	1.33	F	0.74	C	-0.59
18	Culver Boulevard & Jefferson Boulevard	AM	1.62	F	0.94	E	-0.68
		PM	1.88	F	1.06	F	-0.82
19	Lincoln Boulevard & Jefferson Boulevard	AM	1.88	F	0.79	C	-1.09
		PM	2.30	F	0.91	E	-1.39
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.56	A	-
		PM	n/a	-	0.52	A	-

[1] Unsignalized intersection - stop-controlled on minor approach(es).
[2] Source: *Marina del Rey Traffic Study,* DKS Associates, January 1991
and *Marina del Rey Traffic Study Addendum-Final Report,* DKS Associates, May 1994

TABLE 17 (continued)
SUMMARY OF LEVEL OF SERVICE ANALYSIS - FUTURE CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS

Map #	INTERSECTION	Peak Hour	1991/1994 Approved Study [2] Cumulative (2010) Conditions V/C	LOS	2009 Study Cumulative (2020) with Proposed LCP Development (incl. Pipeline Projects) with Improvements V/C	LOS	Difference in V/C
WITHOUT PALAWAN WAY/WASHINGTON BOULEVARD IMPROVEMENT							
1	Via Marina & Washington Boulevard	AM	1.06	F	0.77	C	-0.29
		PM	1.68	F	0.99	E	-0.69
					Alternative A		
2	Via Marina & Admiralty Way	AM	0.79	C	0.46	A	-0.33
		PM	1.27	F	0.67	B	-0.60
					Alternative B		
					0.66	B	-0.13
					0.80	C	-0.48
					Alternative A		
7	Palawan Way & Admiralty Way	AM	0.93	E	0.66	B	-0.27
		PM	1.38	F	0.91	E	-0.47
					Alternative B		
					0.64	B	-0.29
					0.85	D	-0.53
20	Palawan Way & Washington Boulevard	AM	n/a	-	0.92	E	-
		PM	n/a	-	1.00	F	-

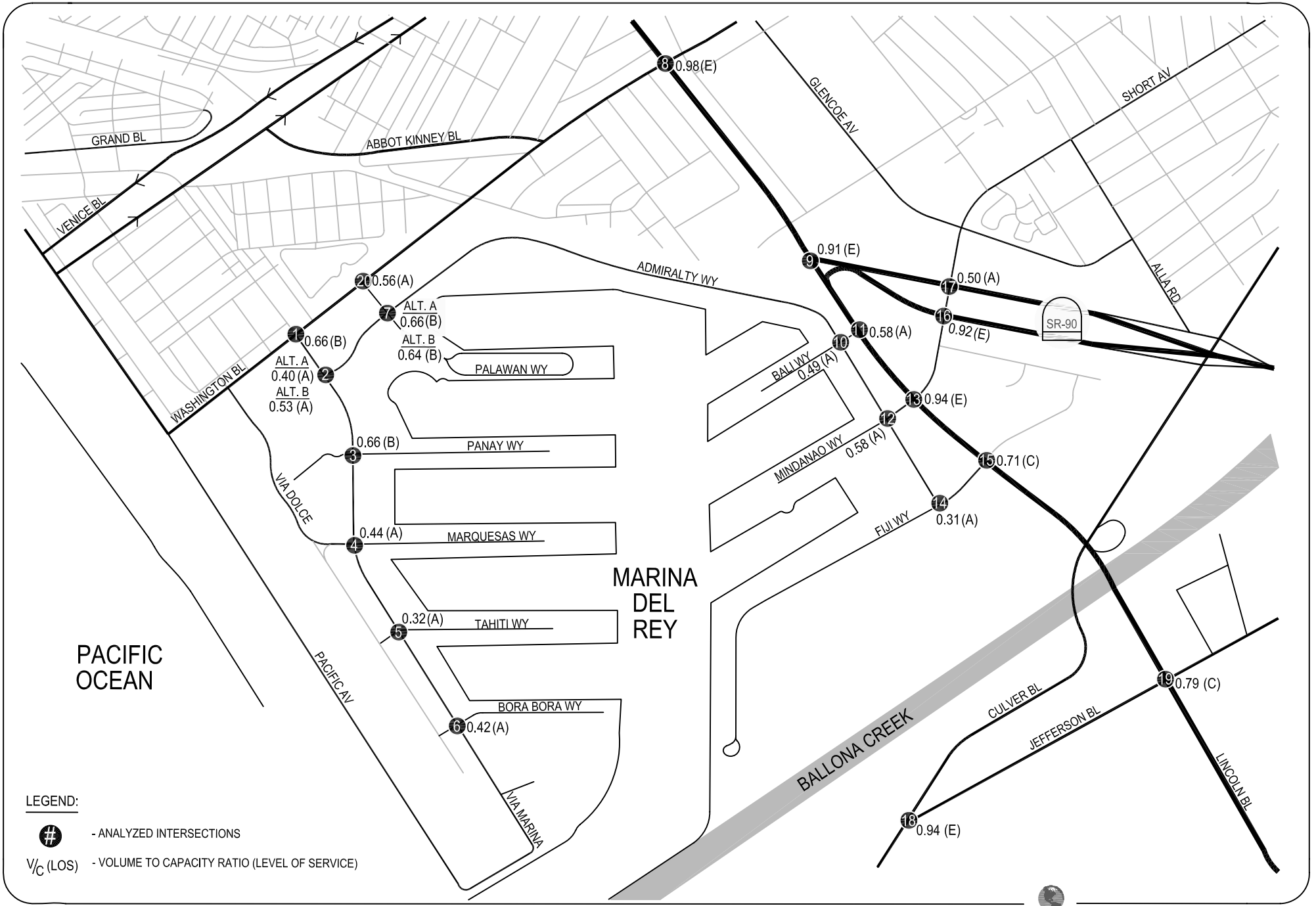


FIGURE 27
CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS AM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

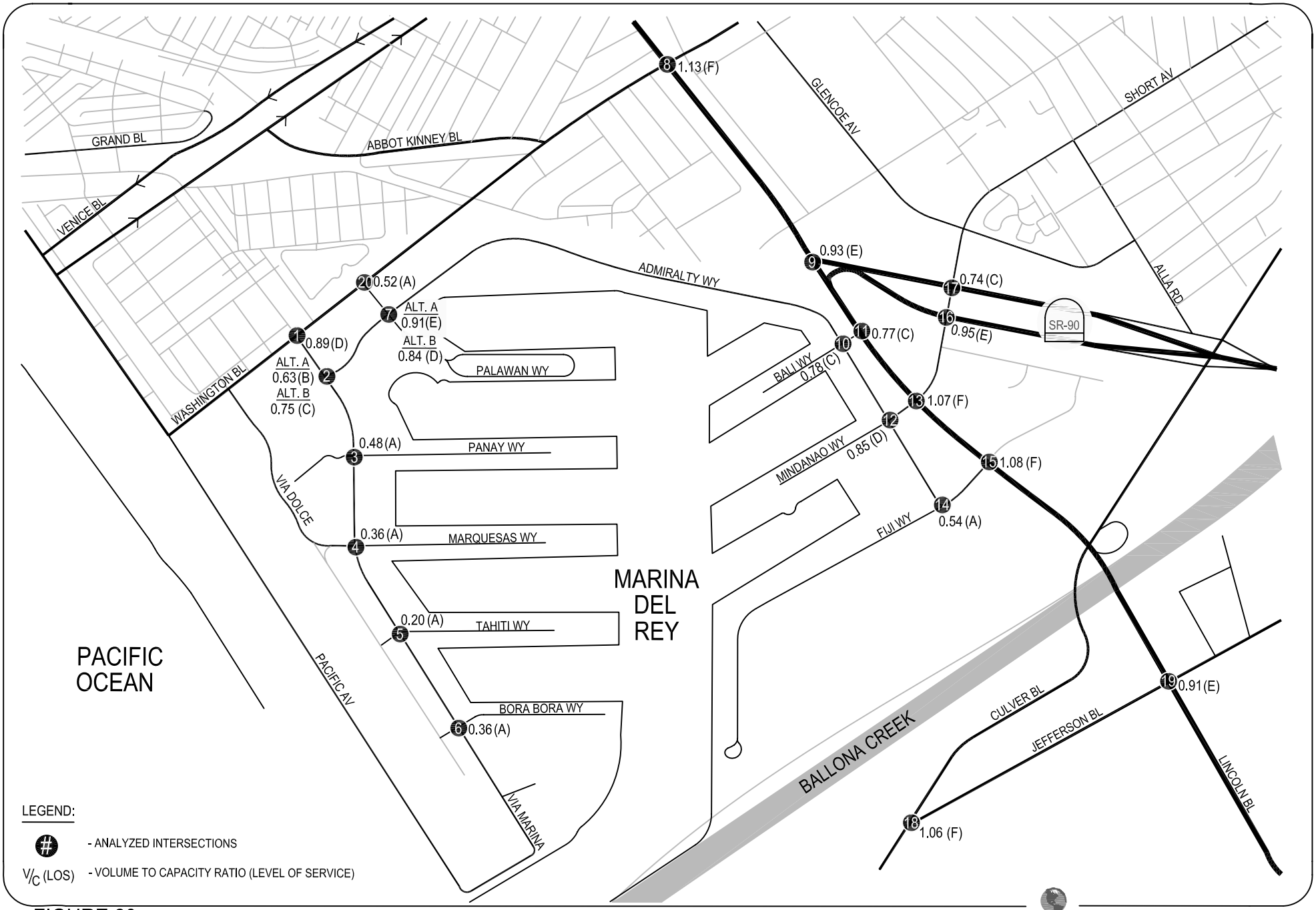


FIGURE 28
CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT (INCLUDING PIPELINE PROJECTS) AND IMPROVEMENTS PM PEAK HOUR LEVELS OF SERVICE

RAJU Associates, Inc.

PM Peak Hour

- Palawan Way / Admiralty Way – LOS E
- Lincoln Boulevard / Washington Boulevard – LOS F
- Lincoln Boulevard / Marina Expressway – LOS E
- Lincoln Boulevard / Mindanao Way – LOS F
- Lincoln Boulevard / Fiji Way – LOS F
- Marina Expressway EB / Mindanao Way – LOS E
- Culver Boulevard / Jefferson Boulevard – LOS F
- Lincoln Boulevard / Jefferson Boulevard – LOS E

For the scenario without the Washington Boulevard / Palawan Way intersection improvement, but with all the other transportation improvements within the Marina, the number of intersections that would be operating at LOS D or better would be less than those projected under the conditions with the Washington Boulevard / Palawan Way intersection improvement. In addition to the above locations, the other locations that would be operating at failing levels of service would be:

AM Peak Hour

- Palawan Way / Washington Boulevard – LOS E

PM Peak Hour

- Palawan Way / Washington Boulevard – LOS F
- Via Marina Way / Washington Boulevard – LOS E

COMPARISON OF FUTURE CUMULATIVE (2020) WITH PROPOSED LCP BUILDOUT WITH TRANSPORTATION IMPROVEMENTS TO FUTURE CUMULATIVE (2010) WITH NO MARINA DEVELOPMENT CONDITIONS IN THE 1991/94 DKS STUDY

Table 17 also compares the Future Cumulative (2020) with Proposed LCP Buildout (including Pipeline Projects) with the Revised Set of Intersection Improvement Projects to the Future Cumulative (2010) with no Marina Development conditions from the 1991/1994 DKS Study (since there was no Cumulative scenario with Marina Development in the DKS Study). As indicated, all of the analyzed intersections under Future Cumulative (2020) with LCP Amendment (Pipeline Projects) with the Revised Set of Intersection Improvement Projects are projected to operate at better V/C ratios and levels of service than the Future Cumulative (2010) with no Marina Development conditions in the 1991/94 DKS Study.

VII. SUMMARY OF CONCLUSIONS

This study was undertaken to assess the Marina del Rey Local Coastal Program (LCP) Amendment conditions and provide guidance relative to improvement measures that may be required to alleviate traffic conditions within Marina del Rey. Raju Associates, Inc. performed this detailed study and the following summarizes the results and findings of this analysis:

- The study area for this project is bounded by Washington Boulevard on the north, Jefferson Boulevard on the south, Pacific Ocean on the west and Lincoln Boulevard on the east. These locations fall within the County of Los Angeles and City of Los Angeles. Also included are the intersections of SR 90 and Mindanao Way.

- Current traffic counts were conducted at each of the analysis intersections during both the morning and evening peak hours. A comparison of these counts with those conducted in the 1991/1994 DKS Study indicate that the current traffic counts have decreased overall by 5% and 8% during the morning and evening peak hours, respectively. This implies that the ambient growth projected in the 1991/1994 DKS Study has not occurred in this region.

- Currently, all 20 of the analyzed intersection locations are operating at levels of service (LOS) D or better during the morning and evening peak hours, with 19 of them operating a LOS C or better. Typically, in urban areas, LOS D is considered as acceptable operations. In the 1991/1994 DKS Study, "existing conditions" analysis identified that 3 locations during the morning peak hour and 9 locations during the evening peak hour were operating at congested or failing levels of service (LOS E or F). A comparison between the two indicates that the current operations at all of the analysis locations are equivalent to or better than the base conditions projected in the 1991/1994 DKS Study.

- In the Future Ambient (2020) conditions, all 20 locations in the morning peak hour and 19 of the 20 locations in the evening peak hour are projected to operate at LOS D or better. The remaining intersection is projected to operate at LOS E. The Future Ambient (2020) conditions has been forecast to operate better than the Future Ambient (2010) conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The Proposed Pipeline Projects' trip generation would result in a total of approximately 1,163 trips (610 inbound, 553 outbound) during the evening peak hour. The Pipeline Projects account for approximately 46% of the overall LCP Buildout remaining (unbuilt) uses' trip generation.

- In the Future Ambient (2020) with LCP Amendment (Pipeline Projects) conditions (without improvements), all 20 of the analyzed intersections in the morning peak hour and 18 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections in the evening peak hour are projected to operate at LOS E. The Future Ambient (2020) with LCP Amendment conditions have been forecast to operate better than the Future Ambient (2010) conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The LCP Amendment includes changes to the transportation improvement measures within the Marina del Rey area. Specific intersection improvement updates have been investigated, in addition to or in lieu of the Category 1 (internal Marina) improvements in the approved LCP. Alternate additional improvement measures have also been developed at several intersections in order to provide improved operating conditions.

- A description of the improvements, known as the Revised Set of Intersection Improvement Projects is provided below.

  1. <u>Via Marina/Admiralty Way Intersection Improvement Alternatives</u>
     a. Alternative A - The improvement at this intersection includes a third westbound left-turn lane and a second southbound left-turn lane. The westbound approach would provide three left-turn lanes and two right-turn lanes. The southbound approach would provide dual left-turn lanes and two through lanes.
     b. Alternative B - Realign this intersection to make Admiralty Way and Via Marina Way roadway segment south of Admiralty to become east-west roadways and make Via Marina Way north of Admiralty Way to "Tee" intersect into this roadway. The westbound Admiralty Way roadway would have two through lanes and a separate right-turn lane. The eastbound re-aligned Via Marina roadway would provide two through lanes and dual left-turn lanes. The re-aligned Via Marina Way southbound approach would provide dual left-turn lanes and a separate right-turn lane.

  Replace the Admiralty Way 5-lane corridor improvement and Admiralty Way/Fiji Way intersection improvement recommended as part of the Local Coastal Program (LCP) with key intersection improvements (described below) that achieve similar improved operating results.

  2. <u>Palawan Way/Admiralty Way Intersection Improvement Alternatives</u>
     a. Alternative A - The southbound approach at this intersection will be restriped to provide a left-turn lane, a shared left-through lane and a separate right-turn lane. The northbound approach would be restriped to provide a shared left-through lane and a shared through-right turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.
     b. Alternative B - Provide an additional lane by restriping the southbound approach. The southbound approach would provide dual left-turn lanes, one through lane

and a separate right-turn lane. The northbound approach would be restriped to provide a shared left-through lane and a separate right-turn lane. A third through lane would be provided in the westbound direction. The westbound approach would provide a left-turn lane, two through lanes and a shared through-right lane. The north-south signal phasing would operate as a split phase due to the lane configurations.

3. Admiralty Way/Bali Way - The improvement at this intersection includes a second southbound left-turn lane. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane.

4. Admiralty Way/Mindanao Way - The improvement at this intersection includes a second southbound left-turn lane and an additional lane on the eastbound approach. The southbound approach would provide dual left-turn lanes, one through lane, and a shared through-right lane. The eastbound approach would provide a left-turn lane, a shared left-through lane and a shared through-right lane. The improvement also includes restriping the westbound approach to provide a left-turn lane, a shared left-through-right lane, and a separate right-turn lane. The east-west signal phase would operate as a split phase due to the lane configurations.

- In the Future Ambient (2020) with LCP Amendment conditions (with the Revised Set of Intersection Improvement Projects), all 20 of the analyzed intersections in the morning peak hour and 19 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersection (Culver Boulevard at Jefferson Boulevard) is projected to continue to operate at LOS E in the evening peak hour. The Future Ambient (2020) with LCP Amendment and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Future Ambient conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- The proposed overall LCP Buildout including the Pipeline Projects Amendment would generate slightly less than the amount of trips generated by the LCP uses approved but not built yet, from the 1991/94 DKS Study, during the evening peak hour. The Proposed LCP Buildout trip generation would result in a total of approximately 2,503 trips (1,378 inbound, 1,125 outbound) during the evening peak hour. This is equivalent to approximately 91% of the approved PM peak hour trips in the LCP.

- In the Future Ambient (2020) with proposed LCP Buildout (including Pipeline Projects prior to any of the improvements) conditions, all 20 of the analyzed intersections in the morning peak hour and 10 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The remaining intersections in the evening peak hour are projected to operate at LOS E or F. The Future Ambient (2020) with LCP Buildout conditions has been forecast to operate better than the Future Ambient (2010) plus approved LCP conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future Ambient (2020) with LCP Buildout conditions (with the Revised Set of Intersection Improvement Projects), all 20 of the analyzed intersections in the morning peak hour and 15 of the 20 analyzed intersections in the evening peak hour are projected to operate at LOS D or better. The Future Ambient (2020) with LCP Buildout and the

Revised Set of Intersection Improvement Projects have been forecast to operate better than the Future Ambient plus approved LCP and mitigations conditions projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- A cumulative analysis of future 2020 conditions with all related projects was performed and compared to the cumulative analysis conditions in the 1991/1994 DKS Study. In the Cumulative (2020) conditions, 18 and 17 of the 20 analyzed intersections are projected to operate at LOS D or better during the morning and evening peak hours, respectively. The remaining intersections are projected to operate at LOS E or F. The Cumulative (2020) conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Amendment (Pipeline Projects) conditions, 18 and 13 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. The Cumulative (2020) with LCP Amendment conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Amendment (Pipeline Projects) conditions (with the Revised Set of Intersection Improvement Projects), 18 and 15 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. The Cumulative (2020) with LCP Amendment and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with Proposed LCP Buildout (including Pipeline Projects) conditions, 14 and 8 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. Again, the Cumulative (2020) with LCP Buildout conditions have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In the Future (2020) Cumulative with LCP Buildout conditions (with the Revised Set of Intersection Improvement Projects), 15 and 12 of the 20 analyzed intersections would be operating at acceptable levels of service (LOS D or better) during the morning and evening peak hours, respectively. Again, the Cumulative (2020) with LCP Buildout and the Revised Set of Intersection Improvement Projects have been forecast to operate better than the Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study during both the morning and evening peak hours at all of the analyzed intersections.

- In summary, the proposed LCP Amendment (with Pipeline Projects) as well as the proposed LCP Buildout traffic conditions with the Revised Set of Intersection Improvement

Projects would result in better operating conditions at all analysis locations than the future conditions with the approved LCP in the 1991/1994 DKS Study. Accordingly, the Revised Set of Intersection Improvement Projects would provide sufficient capacity for the five Pipeline Projects and for the proposed LCP buildout traffic conditions. Further, the Future Cumulative (2020) with both the proposed Amendment and proposed Buildout conditions are also projected to operate better than the Future Cumulative (2010) conditions (with no Marina development) projected in the 1991/1994 DKS Study.

- As part of this LCP Amendment, the number of development zones is proposed to be reduced to three major development zones within the Marina del Rey Local Coastal Plan area. This reduction of the number of development zones to three does not cause any substantial change in traffic operating conditions described for any of the scenarios summarized above.