# Appendix L

Multimodal Transportation Impact Analysis Report

# San Luis Ranch Specific Plan

# Multimodal Transportation Impact Analysis Report

Prepared for:

City of San Luis Obispo

Prepared by:

omni · means
ENGINEERING SOLUTIONS

# SAN LUIS RANCH SPECIFIC PLAN
# MULTIMODAL TRANSPORTATION IMPACT ANALYSIS REPORT

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**November 2016**

**65-6457-09**
**R2117TIA003.docx**

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# Executive Summary

This study has been prepared by Omni-Means to evaluate the potential multimodal transportation impacts associated with development of the San Luis Ranch Specific Plan (Project) located in San Luis Obispo County. The Project is located on a 131.3-acre site (previously known as Dalidio Ranch) in the City of San Luis Obispo's Sphere of Influence. The Project site would be annexed by the City upon approval of the Specific Plan. The site is located between US 101 and Madonna Road, located roughly midway between the existing US 101 interchanges at Los Osos Valley Road and Madonna Road. The mixed-use Project proposes to develop 580 single-family and multifamily residential units, a 200-room hotel, and 250,000 square feet of commercial (retail and office) space.

In keeping with City policies and requirements for transportation impact analysis, this study quantifies impacts to all modes of travel (auto, bike, pedestrian, and transit), and estimates project generation of new person trips using all modes of travel available. Due to the large size of the Project and the mix of proposed on-site land uses, the Project's trip generation estimates also consider internally capture trips between different uses, such as residential to commercial, and commercial to commercial. Table ES-1 presents a summary of the Project's trip generation, by mode.

**TABLE ES-1:**
**CUMULATIVE PROJECT TRIP GENERATION SUMMARY**

| Category | AM Peak Hour Trips | Share | PM Peak Hour Trips | Share |
|---|---|---|---|---|
| Internal Person Trips | 68 | 6.4% | 382 | 19.8% |
| External Person Trips | 1,009 | 93.6% | 1,544 | 80.2% |
| **Total Person Trips** | **1,077** | **100%** | **1,926** | **100%** |
| **External Trips by Mode** | **AM Peak Hour Trips** | **Share** | **PM Peak Hour Trips** | **Share** |
| Automobile (Total Persons) | 914 | 90.5% | 1,435 | 93% |
| *Automobile (Total Cars)* | *648* | *N/A* | *882* | *N/A* |
| Bicycle | 34 | 3.4% | 32 | 2.1% |
| Pedestrian | 50 | 4.9% | 56 | 3.6% |
| Transit | 12 | 1.2% | 20 | 1.3% |
| **Total External Trips** | **1,009** | **100%** | **1,544** | **100%** |

## Multimodal Analysis and Performance Metrics

For automobile travel mode, intersection capacity analysis was performed using HCM 2010 methodologies in Synchro. Performance is measured in delay-based level-of-service (LOS), and impact significance is measured by either the creation of a new deficiency, or the worsening of a pre-project deficient condition by a threshold change in approach or movement volume-to-capacity. This means that an intersection that has been determined to operate unacceptably without the project will only be considered a project-specific impact if the project adds a certain level of traffic to that location. Bicycle and pedestrian intersection LOS is based on a "score" determined through HCM 2010 methods, implemented through Synchro. As with auto mode, a threshold change in score was utilized to determine impact significance at intersections where pedestrian or bicycle LOS is identified as deficient in the pre-project condition.

Queuing analysis was performed using SimTraffic, and impact significance was measured by either the creation of a new queuing deficiency, or the exacerbation of an existing queuing deficiency. Absent a threshold metric to determine project impact at locations where queues exceed storage capacity in the pre-project condition, any queuing issue that is identified in the pre-project condition is considered a significant project impact regardless of how much the queue capacity impact is increased with the addition of project traffic.

Roadway segment analysis was performed using HCM 2010 methodologies in a Multimodal LOS (MMLOS) spreadsheet developed by Omni-Means. For auto mode, the performance metric is LOS based on segment travel speed. Impact significance was measured by either the creation of a new roadway segment deficiency or the worsening of a pre-project deficient segment by a threshold decrease in travel speed. This means that a roadway segment that has been determined to operate unacceptably without the project will only be considered a project-specific impact if the project reduces travel speed by a certain level along that location. For pedestrian, bicycle, and transit modes, LOS is based on a "score" determined through HCM 2010 methods. As with roadway segment, impact significance was measured by either the creation of a new deficiency or by a threshold degradation of segment score where a pre-project deficiency is identified.

## Bicycle, Pedestrian, and Transit "Impact" Findings

Based on current California Environmental Quality Act (CEQA) guidelines, automotive LOS is currently the travel mode being used as the basis for CEQA impact and significance findings. CEQA is also currently undergoing changes with the adoption of Senate Bill 743, which replaces automotive level of service with Vehicle Miles Traveled as the environmental impact metric. Unlike the automotive mode, the bicycle, pedestrian, and transit impact analysis is performed at the discretion of the City of San Luis Obispo on an informational basis to ensure broad disclosure of possible existing and future pre-project conditions and project impacts. The current HCM 2010 methodology for non-motorized impacts has limited contextual application on higher-volume roadway segments, for example HCM does not consider various potential mitigation measures such as class IV bike lanes or parallel class I facilities. High automotive traffic volumes make it difficult to mitigate pedestrian and bicycle impacts without significant changes to the built environment that go well beyond the provision of appropriate crosswalks and sidewalks. Until HCM methodologies are modified to account for these shortfalls, the City's transportation impact study guidelines provide for consideration of mitigation measures not yet fully incorporated into the HCM methodology to address mitigating pedestrian and bicycle LOS impacts.

## Prado Road Overcrossing Only Vs. Full Access Interchange Findings

As part of this traffic impact study a complete and thorough assessment of the Prado Rd. Interchange and its timing was completed. The study concluded that an Overcrossing with only NB ramps would provide for adequate operations under existing and near term conditions; however a full access interchange with both NB and SB Ramps could be differed until buildout conditions. The Overcrossing with only NB ramps would be needed as part of Phase 2 of the San Luis Ranch development.

# Impacts & Mitigation Summary

The San Luis Ranch Project was evaluated under three scenarios; existing + project conditions, near term + project conditions, and cumulative + project conditions. Existing + project conditions reflect the impacts if the entire project were constructed today. Because the project is proposed to be built out over a 5-10 year period the project was also evaluated under near term + project conditions to also reflect other growth and infrastructure improvements anticipated to occur during that time. The combination of analysis of existing and near term conditions provides the basis for establishing phase triggers for project mitigation requirements and project proposed infrastructure. Cumulative + project conditions reflect the impacts of the project under the planned buildout of the City.

**TABLE ES-2 EXISTING & NEAR-TERM IMPACTS & MITIGATIONS**

| EXISTING & NEAR TERM + PROJECT IMPACTS & MITIGATION MEASURES | | | | |
|---|---|---|---|---|
| | **Location** | **Impact** | **Mitigation** | **Trigger** |
| Int. #1 | Madonna & LOVR | Volume Exceeds Lane Capacity<br>Unacceptable Level of Service | Construct Prado Overpass | Phase 2 |
| Int. #2 | Madonna & Oceanaire | Volume Exceeds Lane Capacity | Construct Prado Overpass | Phase 2 |
| Int. #3 | Madonna & Dalidio/Prado | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | a. Extend Madonna WB Left to 310'<br>b. Install 2nd 310' Madonna WB Left<br>c. Install Dedicated EB Madonna Right<br>d. Prohibit WB Madonna U-Turns<br>e. Reconfigure and Optimize Signal Timing with Split Phasing<br>f. Install 2nd Prado/Dalidio NB Left | Phase 1<br>Phase 1<br>Phase 1<br>Phase 1<br>Phase 1<br>With Prado Construction |
| Int. #4 | Madonna & El Mercado | Volume Exceeds Lane Capacity | Int. #3 Mitigation | Phase 1 |
| Int. #5 | Madonna & US 101 SB Ramp | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Construct Prado Overpass<br>Extend EB Madonna Left to Madonna Inn to 150' | Phase 2<br>Phase 1 |
| Int. #6 | Madonna & US 101 NB Ramp | Volume Exceeds Lane Capacity | Construct Prado Overpass | Phase 2 |
| Int. #7 | Madonna & Higuera | Volume Exceeds Lane Capacity | Construct Prado Overpass & NB Ramps | Phase 2 |
| Int. #9 | LOVR & Froom | Volume Exceeds Lane Capacity | Install Dedicated EB Froom Right Turn 230'<br>Extend WB Froom Right Turn to 110'<br>Construct 2nd WB Froom Left turn Lane | With Froom Bridge Construction<br>With Froom Bridge Construction<br>With Froom Bridge Construction |
| Int. #10 | LOVR & Autopark | Unacceptable Level of Service | Signalize Intersection<br>Construct Prado Overpass | Phase 1<br>Phase 2 |
| Int. #11 | LOVR & Calle Joaquin | Volume Exceeds Lane Capacity | Construct Prado Overpass | Phase 2 |
| Int. #12 | LOVR & SB 101 Ramps | Volume Exceeds Lane Capacity | Extend Off-Ramp Left Turn Pocket to 320' | Phase 1 |
| Int. #13 | LOVR & NB 101 Ramps | Volume Exceeds Lane Capacity | Construct Prado Overpass | Phase 2 |
| Int. #14 | LOVR & Higuera | Volume Exceeds Lane Capacity | Extend EB LOVR Right Turn Pocket to 180' | Phase 1 |
| Int. #15 | Higuera & Suburban | Volume Exceeds Lane Capacity | Construct Prado Overpass | Phase 2 |
| Int. #16 | Higuera & Tank Farm | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Construct Prado Overpass<br>Extend NB Right and Install Channelized / Yield Control | Phase 2<br>Phase 1 |
| Int. #18 | Prado & Higuera | Volume Exceeds Lane Capacity | Construct 2nd Higuera NB Left<br>Extend WB Prado Right to 410' | Phase 1<br>Phase 1 |
| Int. #21 | Prado/Dalidio & Driveway | Unacceptable Level of Service | Construct Multilane Roundabout | With Intersection Construction |
| Int. #25 | Prado/Dalidio & Froom | Unacceptable Level of Service | Construct Multilane Roundabout | With Intersection Construction |
| Seg. #1 | Madonna (LOVR to Higuera) | Unacceptable Level of Service | Construct Prado Overpass | Phase 2 |
| Seg. #7 | Higuera (Madonna to Prado) | Unacceptable Level of Service | Construct Parallel Class I Path | With Prado Construction |
| Seg. #13 | LOVR (Madonna to Froom) | Unacceptable Level of Service | Construct Prado Overpass | Phase 2 |
| Seg. #17 | LOVR (NB Ramps to Higuera | Unacceptable Level of Service | Construct Prado Overpass & NB Ramps | Phase 2 |
| Seg. #18 | Prado/Dalidio (Froom to Higuera) | Unacceptable Level of Service | Construct Parallel Class I Path | With Prado Construction |
| Seg. #20 | Prado/Dalidio (Froom to Madonna) | Unacceptable Level of Service | Construct Parallel Class I Path | With Prado Construction |

**TABLE ES-3 CUMULATIVE IMPACTS & MITIGATIONS**

| CUMULATIVE + PROJECT IMPACTS & MITIGATION MEASURES | | | |
|---|---|---|---|
| **Location** | | **Impact** | **Mitigation** |
| Int. #1 | Madonna & LOVR | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Extend NB LOVR Right to 295'<br>Extend SB Madonna Left to 395' |
| Int. #2 | Madonna & Oceanaire | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Extend WB Madonna Right to 200' |
| Int. #3 | Madonna & Prado/Dalidio | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Extend EB Madonna Left to 145' |
| Int. #4 | Madonna & El Mercado | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation |
| Int. #5 | Madonna & 101 SB | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct NB & SB Ramps |
| Int. #6 | Madonna & 101 NB | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct NB & SB Ramps |
| Int. #8 | Higuera & South | Volume Exceeds Lane Capacity | Extend NB Higuera Left Turn Pocket to 120'<br>Extend EB South St Right Turn Pocket to 100' |
| Int. #9 | LOVR & Froom | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation |
| Int. #10 | LOVR & Auto Park | Unacceptable Level of Service | Existing & Near Term Mitigation |
| Int. #11 | LOVR & Calle Joaquin | Volume Exceeds Lane Capacity | Construct Prado NB & SB Ramps |
| Int. #12 | LOVR & 101 SB | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct Prado Overpass with NB & SB Ramps |
| Int. #13 | LOVR & 101 NB | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct NB & SB Ramps |
| Int. #14 | LOVR & Higuera | Unacceptable Level of Service<br>Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct Prado Overpass with NB & SB Ramps |
| Int. #16 | Higuera & Tank Farm | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation<br>Construct NB & SB Ramps |
| Int. #18 | Higuera & Tank Farm | Volume Exceeds Lane Capacity | Existing & Near Term Mitigation |
| Seg. #1 | Madonna (Higuera - LOVR) | Unacceptable Level of Service | Existing & Near Term Mitigation<br>Construct NB & SB Ramps |
| Seg. #5-#6 | Madonna (SB Ramps - Higuera) | Unacceptable Level of Service | Construct Prado Overpass with NB & SB Ramps |
| Seg. #7 | Higuera (Madonna to Prado) | Unacceptable Level of Service | Existing & Near Term Mitigation |
| Seg. #15-#16 | LOVR (Calle Joaquin - 101 NB) | Unacceptable Level of Service | Construct Prado Overpass with NB & SB Ramps |
| Seg. #24 | Prado/Dalidio (Driveway - Froom) | Unacceptable Level of Service | Construct Prado Overpass with NB & SB Ramps |

# Introduction

The City of San Luis Obispo has retained Omni-Means to perform a Multimodal Transportation Impact Study (TIS) for the proposed San Luis Ranch Specific Plan. The proposed mixed-use development is located on a 131.3-acre site in unincorporated San Luis Obispo County, adjacent to the City of San Luis Obispo, and within the City's Sphere of Influence (SOI). The site is generally bounded by Madonna Road, Dalidio Drive, and US Highway 101. The site is part of an agricultural reserve that has historically been used as farmland. Consistent with the requirements of the General Plan, the San Luis Ranch Specific Plan must be adopted by the City Council prior to annexation of the Plan Area. The City would annex the Plan Area with project approval. The San Luis Ranch Specific Plan is proposing a mix of residential, commercial, hotel, and office uses while preserving substantial areas of open and agricultural space. This multimodal transportation impact study would evaluate the proposed 580-Unit Alternative of the San Luis Ranch Specific Plan to determine any operational or safety impacts to the surrounding infrastructure. This Multimodal TIS presents the projected transportation operations and impacts associated with development of the project under *Existing*, *Near Term*, and *Cumulative Conditions* for vehicular, pedestrian, bicycle, and transit related impacts, and the mitigation measures required to mitigate impacts to less than significant.

## Intersections

The City of San Luis Obispo has identified and pre-selected twenty (20) existing intersections for analysis. In addition, intersections 21-28 are project-only intersections that would be constructed in conjunction with the proposed project and which would be evaluated either as part of the plus project conditions only.

1. Madonna Road / Los Osos Valley Road
2. Madonna Road / Oceanaire Drive
3. Madonna Road / Dalidio Drive
4. Madonna Road / El Mercado
5. Madonna Road / US 101 Southbound Ramps
6. Madonna Road / US 101 Northbound Ramps
7. Madonna Road / Higuera Street
8. Higuera Street / South Street
9. Los Osos Valley Road / Froom Ranch Way
10. Los Osos Valley Road / Auto Park Way
11. Los Osos Valley Road / Calle Joaquin
12. Los Osos Valley Road / US 101 Southbound Ramps
13. Los Osos Valley Road / US 101 Northbound Ramps
14. Los Osos Valley Road / S. Higuera Street
15. S. Higuera Street / Suburban Drive
16. S. Higuera Street / Tank Farm Road
17. S. Higuera Street / Granada Drive
18. S. Higuera Street / Prado Road
19. S. Higuera Street / Margarita Avenue
20. Prado Road / US 101 Northbound Ramps/Elks Lane

### *Future Intersections*

21. Froom Ranch Way / Dalidio Drive (*Future*)
22. Madonna Road / Project Driveway #1 (*Project Internal*)

23. Froom Ranch Way / Project Driveway #2 (*Project Internal*)
24. Dalidio Drive / US 101 SB Ramps (*Future*)
25. Dalidio Drive / Project Shopping Center Driveway (*Project Internal*)
26. Dalidio Drive / Post Office Driveway / Promenade (*Access Management*)
27. Froom Ranch Way / Hotel Project Driveway (*Project Internal*)
28. Froom Ranch Way / Project Driveway #3 (*Project Internal*)

## Roadway Segments

Ten (10) arterial roadways have been identified and pre-selected by the City of San Luis Obispo for analysis. For the purpose of this analysis, the segments have been broken up into 24 separate segments in between major intersections, as follows:

Madonna Road:

1. Los Osos Valley Road to Oceanaire Drive
2. Oceanaire Drive to Dalidio Drive
3. Dalidio Drive to El Mercado
4. El Mercado to US 101 Southbound Ramps
5. US 101 Southbound Ramps to US 101 Northbound Ramps
6. US 101 Northbound Ramps to Higuera Street

S. Higuera Street:

7. Madonna Road to Margarita Avenue
8. Margarita Avenue to Prado Road
9. Prado Road to Granada Drive
10. Granada Drive to Tank Farm Road
11. Tank Farm Road to Suburban Road
12. Suburban Road to Los Osos Valley Road

Los Osos Valley Road:

13. Madonna Road to Froom Ranch Way
14. Froom Ranch Way to Calle Joaquin
15. Calle Joaquin to US 101 Southbound Ramps
16. US 101 Southbound Ramps to US 101 Northbound Ramps
17. US 101 Northbound Ramps to S. Higuera Street

Prado Road

18. US 101 Northbound Ramps to Higuera Street

Froom Ranch Way

19. Los Osos Valley Road to Dick's Sporting Goods Driveway
21. Dick's Sporting Goods Driveway to Dalidio Drive (*Future*)

Dalidio Drive

20. Madonna Road to Froom Ranch Way (*Future*)
22. US 101 Northbound Ramps to US 101 Southbound Ramps (*Future*)

23. US 101 Southbound Ramps to Froom Ranch Way (*Future*)
24. Froom Ranch Way to Shopping Center Driveway (*Future*)

The *Future* roadway segments, which are either internal to the project or new roadways depending on the analysis scenario, are evaluated in between traffic signals or major cross-section changes.

## Highway Segments

Two highway mainline segments have been identified and pre-selected by the City of San Luis Obispo and Caltrans for analysis. Average Daily Traffic (ADT) counts were obtained from Caltrans for the two following segments:

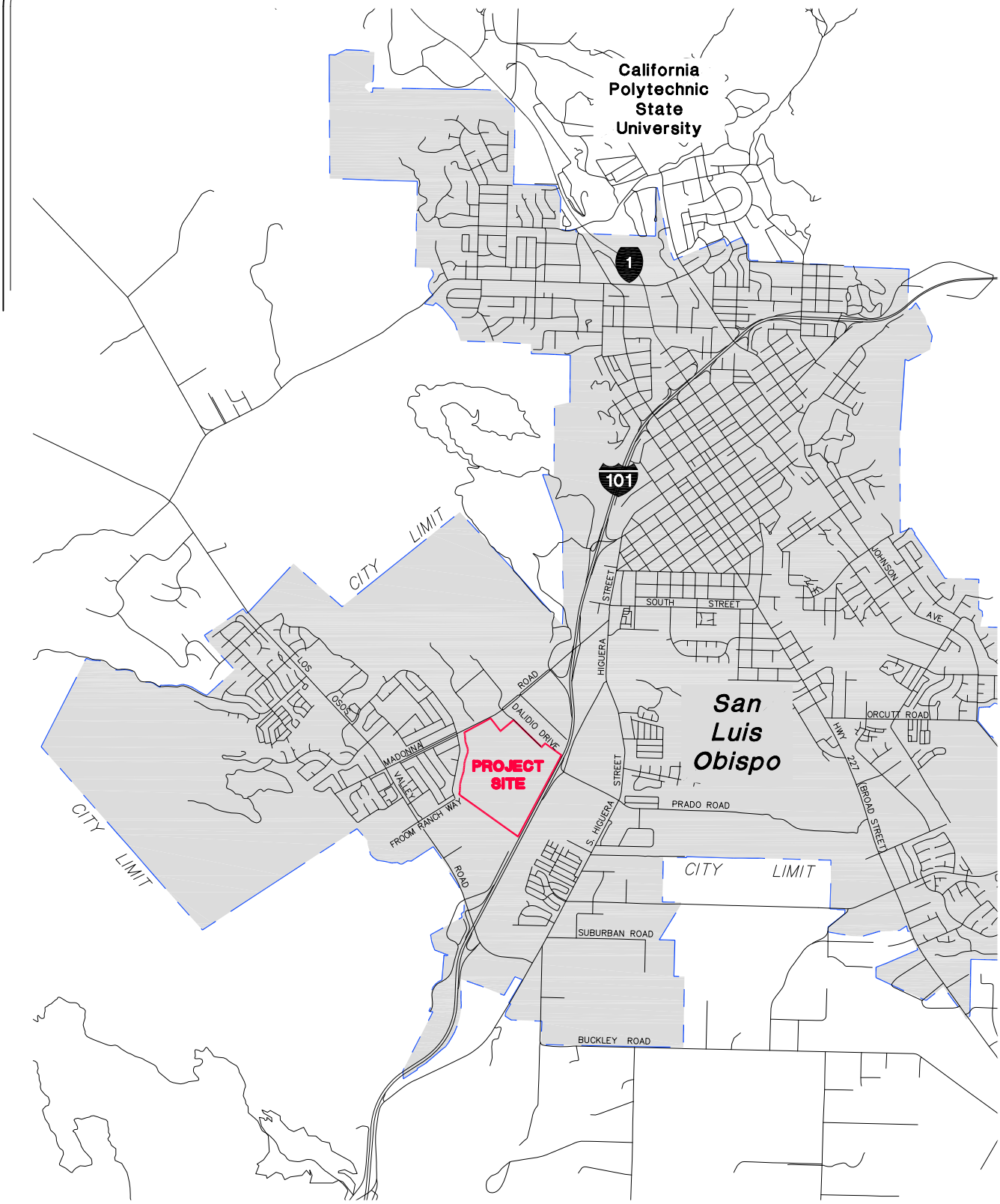
1. US 101 between Los Osos Valley Road and Prado Road
2. US 101 between Prado Road and Madonna Road

The study locations above were analyzed for weekday AM and PM peak hours for both intersections and roadway segments using vehicular, bicycle, and pedestrian counts collected either from the City's on-line traffic counts database or by Omni-Means. The following traffic scenarios were analyzed as part of this study:

- Existing Conditions
- Existing Plus Project Conditions
- Near Term (Year 2025) Conditions
- Near Term Plus Project Conditions
- Cumulative (Year 2035) Full Build Prado Road Interchange Conditions
- Cumulative Full Build Prado Road Interchange Plus Project Conditions
- Cumulative (Year 2035) Prado Road Overcrossing Conditions
- Cumulative Prado Road Overcrossing Plus Project Conditions

Existing conditions establishes the baseline conditions for the year 2014 traffic operations, when the traffic counts were collected, at the study locations. Existing Plus Project conditions is an analysis scenario in which project-related traffic impacts are examined in comparison to the Existing conditions. The Near Term conditions is an analysis scenario in which the City's approved, pending and potential land development projects are assumed to be in place, in roughly 10 years (Year 2025). The Near Term Plus Project conditions is an analysis scenario in which project-related traffic impacts are examined in comparison to the Near Term conditions.

Cumulative conditions establish the conditions that would exist at build-out of the City's General Plan, representing approximately twenty years out (Year 2035). Cumulative Plus Project conditions is an analysis scenario in which project-related traffic impacts are examined in comparison to Cumulative conditions. Two cumulative scenarios have been included in this study. The Cumulative Full Build Prado Road Interchange analysis scenarios consider a full access diamond interchange to be constructed at Prado Road, in addition to all other City roadway improvements. The Cumulative Year 2035 Prado Road Overcrossing scenarios consider an overcrossing to be constructed over US 101 connecting Prado Road to Dalidio Drive and the existing US 101 Northbound ramps to be removed, in addition to all other City roadway improvements in place. In both cumulative scenarios, improvements to the City's transportation infrastructure system are assumed to be constructed, consistent with the General Plan Circulation Element. Figure 1 presents the study area and vicinity map.




San Luis Ranch Specific Plan Multimodal TIS

Figure 1

# Study Area Map

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# Multimodal Analysis Methodology and Technical Parameters

The following section outlines the analysis methodology and technical parameters used to quantify operations for all transportation modes in the TIS.

## Applicable Multimodal Level of Service Policies

### City of San Luis Obispo Policy

The City of San Luis Obispo *Circulation Element* contains Level of Service (LOS) policies for all modes of transportation. The City's goal is to maintain the LOS objective. However if the project causes the LOS to exceed the minimum LOS standard, the project is considered to have caused an impact.

Table 1 shows the standard acceptable LOS threshold by mode.

**TABLE 1:**
**LOS OBJECTIVE AND MINIMUM STANDARD FOR ALL MODES OF TRANSPORTATION**

| Travel Mode | Objective LOS | Minimum LOS Standard |
|---|---|---|
| Bicycle | B | D |
| Pedestrian | B | C |
| Transit | C | Baseline LOS or LOS D, whichever is lower |
| Vehicle | C | E (Downtown), D (All Other Routes) |

Consistent with City policies, the LOS threshold for bicyclist has been LOS "D", pedestrian LOS threshold has been LOS "C", transit LOS threshold has been the lower of baseline LOS or LOS "D", and vehicle LOS threshold has been "D". The objective LOS for bicycle and pedestrian modes is LOS "B", and for transit and vehicle modes is LOS "C".

### Caltrans Policy

In addition to the City's policies, Caltrans has also established the measure of effectiveness (MOE) for the evaluation of impacts in CEQA level projects on State facilities. Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) contains the following policy pertaining to the LOS standards within Caltrans jurisdiction:

> *The Level of Service (LOS) for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.) Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.*

Consistent with Caltrans policy, the study considers LOS D as the standard acceptable threshold for State highway facilities, such as US 101 and ramp terminals.

## Significance Thresholds by Mode

### Caltrans Significance Threshold

Based on standard industry practice, the project is considered to have a significant impact if it would:

- Result in a facility that will operate at an acceptable LOS in the *No Project* condition to deteriorate to an unacceptable LOS in the *Plus Project* condition; or,
- Increase the density by more than 5% at a facility that will operate at an unacceptable LOS in the

Consistent with the City's adopted Multimodal Transportation Impact Study Guidelines, the project impacts are considered significant if:

### Automobiles: Intersections

A. Signalized Intersections: Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards and the V/C ratio is increased by 0.01 or more.

B. Unsignalized Intersections: Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards, the V/C ratio is increased by 0.01 or more, and a traffic signal warrant analysis is satisfied.

C. Project traffic causes or exacerbates 95th percentile turning movement queues exceeding available turn pocket capacity.

D. The project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards for the overall intersection or individual lane groups.

### Automobiles: Segments

A. Project traffic causes minimum LOS standards for either direction to be exceeded or further degrades already exceeded LOS standards and the average segment speed decreases by 1 mph or more.

B. The project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards.

### Pedestrian, Bike, & Transit: Intersections & Segments

A. Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards and there is contextual significance to the impact.

B. Pedestrians & Bicycles: The project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards.

## Modal Priorities

In addition to maintaining minimum LOS, the City's Circulation Element has established priorities for various modes such that construction, expansion, or alteration of one mode should not degrade the LOS of a higher priority mode. Project impacts are considered significant if the project proposes to improve a lower priority mode resulting in the degradation of a higher priority mode. Also, if a project's mitigation would result in the degradation of higher priority mode that shall be considered a residual impact and addressed as well. The City's established different Modal LOS Priorities by area are presented in Table 2.

**TABLE 2:**
**MODAL PRIORITY RANKING**

| Complete Street Areas | Priority Mode Ranking | |
|---|---|---|
| Downtown & Upper Monterey Street | 1. Pedestrians | 3. Transit |
| | 2. Bicycles | 4. Vehicle |
| Residential Corridors & Neighborhoods | 1. Pedestrians | 3. Vehicle |
| | 2. Bicycles | 4. Transit |
| **Commercial Corridors & Areas** | **1. Vehicles** | **3. Transit** |
| | **2. Bicycles** | **4. Pedestrians** |
| Regional Arterial and Highway Corridors | 1. Vehicles | 3. Bicycles |
| | 2. Transit | 4. Pedestrians |

Based on Table 2, the proposed project would fall under the Regional Arterial and Highway Corridors Priority Mode Ranking for multi-modal level of service (MMLOS), meaning vehicular impacts will carry the most significance. This ranking prioritizes the modes of transportation in the following order: vehicles, transit, bicycles, and pedestrians.

## Traffic Safety

A safety assessment is conducted for the study intersections and segments based on the project's potential operational and geometric affects, including turn pocket queue spillbacks and a functional area analysis of project driveways in close proximity to other intersections on collector and arterial roadways.

A. Project traffic affects the operational characteristics of an existing intersection or segment such that the collision rate, per million entering vehicles for intersections and per million vehicle miles for segments, would be likely to increase.

B. Project proposed significant new or modified infrastructure is predicted to have a collision rate as indicated above higher than the median collision rate as reported in the City's most current annual traffic survey report for the same facility classification type.

## Neighborhood Traffic Analysis

Since this project includes new local residential streets, an evaluation of neighborhood traffic conditions is included. Project impacts are considered significant if the maximum neighborhood ADT or speed thresholds established from the Circulation Element are exceeded or the project adds traffic to a neighborhood already exceeds the ADT threshold. The ADT and speed thresholds established in the Circulation Element are as follows:

- Local Residential – maximum ADT is 1,500 vpd and maximum speed is 25 mph;
- Residential Collector – maximum ADT is 3,000 vpd and maximum speed is 25 mph.

**SB 743: Vehicle Miles Traveled Analysis**

CEQA is currently undergoing significant changes with respect to how transportation impacts are considered as an environmental issue. Under SB 743 the California Office of Planning and Research is developing VMT or vehicle miles travelled as the new criteria to replace auto level of service as an environmental impact metric under CEQA. Official thresholds have not yet been adopted; therefore this analysis reports VMT for the project but does not identify impacts or mitigations associated with VMT in the absence of adopted measures.

## Mitigation Measures

When significant impacts are identified as part of the traffic impact analysis mitigation measures shall be included to address those impacts. The impact study should establish the legal nexus between the project and the mitigation measures. The traffic study's description of each mitigation measure should include the following:

1. Comparison Table of impacted locations listing conditions (i.e. LOS) with and without mitigation.
2. Figure schematically depicting location and nature of each mitigation measure and description of implementation feasibility (i.e. ROW requirements, constructability, etc.)
3. If specifically scoped planning level cost estimation of each mitigation measure, timing/phasing of measures, and equitable share calculation.

**Intersection Control Type Selection**

The City's General Plan Circulation Element policies for traffic management on the *Street Network* (Policy 7.1.2) and *Streetscapes and Major Roadways* (Policy 9.2.6) establish that where feasible, roundabouts shall be the City's preferred intersection control alternative due to the vehicle speed reduction, safety, improved aesthetics, reduction in impervious surface areas, additional landscaping areas, and operational benefits of roundabouts. Per these policies, roundabout control should be the first and preferred mitigation measure considered when there are not unworkable right-of-way issues, environmental factors, or other design constraints. When roundabout control is infeasible, consideration and evaluation of multi-way stop control or signalized control should utilize the California MUTCD's appropriate warrants.

# Multimodal Level of Service Methodologies

Traffic operations were be quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection, or roadway segment, representing progressively worsening traffic conditions. Levels of Service were calculated for all intersection control types, urban street segments, and freeway segments using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Fifth Edition, 2010* (HCM 2010). The HCM methodologies for intersections were implemented using Synchro (version 9). The Synchro Outputs can be found in the Appendix . SimTraffic software was used to report the 95$^{th}$ percentile queues and are included in the Appendix. Roundabout analysis is conducted using SIDRA 6 software, if applicable. The urban street segment analysis is conducted manually using a spreadsheet which Omni-means has created to formulate the equations set forth in

Chapter 17: *Urban Street Segments* of the HCM 2010, and the inputs and outputs of the spreadsheet can be found in the Appendix. The HCM methodologies for basic freeway segments and ramp junctions were implemented using Highway Capacity Software (*HCS 2010, McTrans*), and is included in the Appendix. The vehicular delay-based LOS criteria for different types of intersection control are outlined in Table 3.

**TABLE 3:**
**INTERSECTION LOS CRITERIA FOR VEHICLES**

| Level of Service | Type of Flow | Delay | Maneuverability | Stopped Delay/Vehicle (sec) | |
|---|---|---|---|---|---|
| | | | | Signalized/ Roundabouts | Unsignalized/ All-Way Stop |
| A | Stable Flow | Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all. | Turning movements are easily made, and nearly all drivers find freedom of operation. | < 10.0 | < 10.0 |
| B | Stable Flow | Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay. | Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles. | >10.0 and < 20.0 | >10.0 and < 15.0 |
| C | Stable Flow | Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping. | Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted. | >20.0 and < 35.0 | >15.0 and < 25.0 |
| D | Approaching Unstable Flow | The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. | Maneuverability is severely limited during short periods due to temporary back-ups. | >35.0 and < 55.0 | >25.0 and < 35.0 |
| E | Unstable Flow | Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. | There are typically long queues of vehicles waiting upstream of the intersection. | >55.0 and < 80.0 | >35.0 and < 50.0 |
| F | Forced Flow | Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors. | Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions. | > 80.0 | > 50.0 |

*References: 2010 Highway Capacity Manual*

Peak hour traffic signal warrant analysis is completed for deficient intersections which are currently two-way or all-way stop controlled. The term “signal warrants” refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise unsignalized intersection. This study has employed the signal warrant criteria presented in the latest edition of the Federal Highway Administration’s (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD),* as amended by the *MUTCD 2014 California Supplement,* for all study intersections. The signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, frequency of accidents, location of school areas etc. Both the FHWA’s MUTCD and the *MUTCD 2014 California Supplement* indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. The ultimate decision to signalize an intersection should be determined after careful analysis of all intersection and area characteristics. This traffic study specifically utilizes the Peak-Hour-Volume based Warrant 3 as one representative type of traffic signal warrant analysis. Warrant 3 criteria are essentially identical for both the FHWA’s MUTCD and the *MUTCD 2014 California Supplement*. Since Warrant 3 provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating at above 40 mph), study intersections which use this specialized criteria are clearly identified. For the purposes of this study, the warrant criteria for intersections with urban characteristics are used and are included in the Appendix as necessary.

Table 4 presents the LOS thresholds for the automobile mode on urban street segments.

**TABLE 4:**
**AUTOMOBILE SEGMENT LOS CRITERIA**

| Travel Speed as a Percentage of Base Free Flow Speed (%) | LOS by Volume-to-Capacity Ratio[a] | |
|---|---|---|
| | ≤1 | ≥1 |
| >85 | A | F |
| >67-85 | B | F |
| >50-67 | C | F |
| >40-50 | D | F |
| >30-40 | E | F |
| ≤30 | F | F |

a. Volume-to-Capacity Ratio of through movement at downstream boundary intersction

Table 5 presents the pedestrian LOS thresholds, and Table 6 presents the LOS thresholds for bicycles and transit.

**TABLE 5:**
**PEDESTRIAN LOS CRITERIA**

| Ped LOS Score | LOS by Average Pedestrian Space ($ft^2/p$) | | | | | |
|---|---|---|---|---|---|---|
| | >60 | >40-60 | >24-40 | >15-24 | >8.0-15[a] | <8.0[a] |
| ≤2.00 | A | B | C | D | E | F |
| >2.00-2.75 | B | B | C | D | E | F |
| >2.75-3.5 | C | C | C | D | E | F |
| >3.5-4.25 | D | D | D | D | E | F |
| >4.25-5.00 | E | E | E | E | E | F |
| >5.00 | F | F | F | F | F | F |

*Notes: 1. Based on Highway Capacity Manual, Fifth Edition, Transportation Research Board, 2010.*

*2. All volume thresholds are approximate and assume ideal roadway characteristics. Actual thresholds for each LOS listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange*

[a] *In Cross-Flow situations, the LOS E/F threshold is 13 $ft^2/p$*

**TABLE 6:**
**BICYCLE AND TRANSIT LOS CRITERIA**

| LOS Criteria for Bicycle and Transit Modes | |
|---|---|
| LOS | LOS SCORE |
| A | ≤2.00 |
| B | >2.00-2.75 |
| C | >2.75-3.5 |
| D | >3.50-4.25 |
| E | >4.25-5.00 |
| F | >5.00 |

*Notes:*
*1. Based on Highway Capacity Manual, Fifth Edition, Transportation Research Board, 2010.*
*2. Also used for Ped and Bike LOS for intersections analysis*

Table 7 presents the LOS thresholds for the basic freeway segments.

**TABLE 7:**
**BASIC FREEWAY SEGMENTS LOS CRITERIA**

| Segment Type | Density (pc/mi/ln) | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| Freeway | 11 | 18 | 26 | 35 | 45 |
| Merge | 10 | 20 | 28 | 35 | 45 |
| Diverge | 10 | 20 | 28 | 35 | 45 |
| Weave | 10 | 20 | 28 | 35 | 45 |

*Notes: 1. Based on Highway Capacity Manual, Fifth Edition, Transportation Research Board, 2010.*

# Technical Analysis Parameters

The following section details the multimodal technical analysis parameters. All parameters not listed should be assumed as default values or calculated based on parameters listed. The City maintains "Master" Synchro networks for the AM, Midday (MID), and PM peak hours which have be used to develop the project Synchro files for the AM and PM peak hour study periods. Modifications to reflect existing condition have been made as necessary and documented.

### *Vehicular Parameters*

Synchro 9 *(Trafficware)* has been used to implement HCM 2010 analysis methodologies for vehicular delay at the study intersections. For signalized and all-way stop-controlled intersections, LOS determination is based on the calculated average delay for all approaches and movements. For a two-way stop-controlled intersection, an LOS determination is based upon the calculated average delay for all movements of the worst performing approach. SimTraffic software has been used to conduct the 95$^{th}$ percentile queuing analysis based on 5 runs of 60 simulation minutes with a seeding time of 15 minutes. The queues have been evaluated for impacts to turning pocket storage capacity and closely spaced intersections. Table 8 presents the main technical parameter assumptions that have been used in Synchro 9. Any parameters not included in Table 8 use the values included in the City's "Master" network or software default values.

**TABLE 8:**
**VEHICULAR TECHNICAL LOS PARAMETERS**

| Parameter | Assumption |
|---|---|
| 1. Peak Hour Factor | Intersection Overall, based on existing counts |
| 2. Heavy Vehicle Percentage | 2%, except to/from US 101 Ramps will us 10% |
| 3. Signal Timings | City 'Master' Synchro Networks (Unless otherwise noted) |
| 4. Grades | 2 percent of less for all intersections |

The cycle lengths and signal timings for the study intersections were not changed from the City's "Master" Synchro networks except at the following intersections: Higuera Street/Prado Road and Higuera Street/Tank Farm Road. The Synchro "Master Network" for these intersections has signal phasing that does not reflect the existing conditions, based on aerial imagery. The intersection of Higuera Street/Prado Road is changed to have a 91-second cycle length with concurrent (dual-entry) phasing eastbound/westbound Prado Road with permitted left turns, instead of a split phase. The intersection of Higuera Street/Tank Farm Road is changed to have a 115-second cycle length with split phasing eastbound/westbound instead of a concurrent phase (permitted lefts) due to the dual left turns with shared through movement westbound, and a northbound right turn overlap phase is added.

In addition, the intersection of Higuera Street/Madonna Street phasing is changed to have the southbound right turn be protected plus an overlap phase, with no right turn allowed on red, and the eastbound right turn is permitted plus overlap phasing. At the intersection of Higuera Street/South Street, PM peak hour phasing is changed to be consistent with the AM peak hour with the addition of a northbound right turn overlap phase. At the intersections of Los Osos Valley Road and Calle Joaquin, and at both US 101 Northbound and Southbound Ramp terminals, the main street northbound/southbound left turn phasing is changed to be permitted plus protected, and at Los Osos Valley Road/US 101 Northbound Ramps the southbound right turn is changed to include an overlap phase. These changes were made to the City's Synchro networks in order to reflect existing conditions.

Vehicular segment analysis has been conducted manually using the equations within HCM 2010. Omni-Means has created a spreadsheet which formulates the HCM 2010 equations within Chapter 17: *Urban Street Segments.* Table 9 presents critical technical parameters required and our assumptions. Any parameters not included in Table 9 use default values.

**TABLE 9:**
**VEHICULAR TECHNICAL LOS PARAMETERS FOR SEGMENT ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Lane Width | Measured from Aerials |
| 2. Median Type | Identified from Aerials |
| 3. Total Access Points | Identified from Aerials |
| 4. Number of Travel Lanes | Identified from Aerials |

### *Pedestrian Parameters*

Intersection pedestrian LOS has also been determined using Synchro 9. Synchro 9 uses HCM 2010 methodologies for determining pedestrian LOS, and requires technical inputs beyond those included for vehicular LOS. Table 10 presents critical technical parameters required and our assumptions. Any parameters not included in Table 10 use software default values.

**TABLE 10:**
**PEDESTRIAN TECHNICAL LEVEL OF SERVICE PARAMETERS FOR INTERSECTION ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Right Corner Size A, Size B, and Curb Radius | Measured from Aerials |
| 2. Number of Right-Turn Islands | Identified from Aerials |
| 3. Crosswalk Widths | Default Value of 10 feet |
| 4. Ped Left-Right Flow Rate | Half of Two-Way Flow Rate |
| 5. Ped Right-Left Flow Rate | Half of Two-Way Flow Rate |
| 6. Ped R Sidewalk Flow Rate | Same as Crossing Volume |
| 7. Vehicle Perm Left Flow in Ped Phase | Based on SimTraffic Observation |
| 8. Vehicle Perm Right Flow in Ped Phase | Based on SimTraffic Observation |
| 9. Vehicle Right Turn on Red | Based on SimTraffic Observation |

For segment analysis, pedestrian LOS has been determined using HCM 2010. Table 11 presents critical technical parameters required and our assumptions. Any parameters not included in Table 11 use software default values.

**TABLE 11:**
**PEDESTRIAN TECHNICAL LEVEL OF SERVICE PARAMETERS FOR SEGMENT ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Two-Way Ped Volume | From Counts |
| 2. Ped Waiting Delay | Default |
| 3. Pedestrian Free-Flow Speed | 3.5 ft/sec |
| 4. Width and Number of Vehicle and Bike Lanes | Measured from Aerials |
| 5. Sidewalk Presence | Identified from Aerials |
| 6. Inside Fixed-Object Effective Width | Measured in Field |
| 7. Outside Fixed-Object Effective Width | Measured in Field |
| 8. Buffer Width | Measured in Field |
| 9. Nearest Signal Distance | Measured from Aerials |
| 10. Sidewalk Length Adjacent to Window, Building, Fence | Measured from Aerials |
| 11. Propotion of Parking Occupied | Measured from Aerials |
| 12. Length of Segment | Measured from Aerials |
| 13. Intersection Width | Measured from Aerials |

### *Bicycle Parameters*

Intersection bicycle LOS has also been determined using Synchro 9. Synchro 9 uses HCM 2010 methodologies for determining bicycle LOS, and requires technical inputs beyond those included for vehicular and pedestrian LOS. Table 12 presents critical technical parameters required and our assumptions. Any parameters not included in Table 12 use software default values.

**TABLE 12:**
**BICYCLE TECHNICAL LEVEL OF SERVICE PARAMETERS FOR INTERSECTION ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Bike Flow Rate | From Counts |
| 2. Bike Lane Width | Measured from Aerials |
| 3. Paved Shoulder Width | Measured from Aerials |
| 4. Curb is Present | Identified from Aerials |
| 5. On Street Parking | Identified from Aerials |

For segment analysis, bicycle LOS has been determined using HCM 2010. Table 13 presents critical technical parameters required and our assumptions. Any parameters not included in Table 13 use software default values.

**TABLE 13:**
**BICYCLE TECHNICAL LEVEL OF SERVICE PARAMETERS FOR SEGMENT ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Bicycle Running Speed | Default, 15 mph |
| 2. Percent Heavy Vehicle | 2% |
| 3. Pavement Condition Rating | 3.0 |

### *Transit Parameters*

Transit LOS is determined for segments using the equations within the Urban Street Segments chapter of HCM 2010; Synchro software does not analyze transit routes or stops. The transit LOS is determined for the stop for Route 2 at the intersection of Tank Farm Road and S. Higuera Street. Route 2 stops on the far side of the intersection, headed eastbound on Tank Farm Road, and a bus turnout is present (off-line stop). Table 14 presents critical technical parameters required and our assumptions. Any parameters not included in Table 14 use default values.

**TABLE 14:**
**TRANSIT TECHNICAL LEVEL OF SERVICE PARAMETERS FOR SEGMENT ANALYSIS**

| Parameter | Assumption |
|---|---|
| 1. Average Passenger Load Factor | Identified from Short Range Transit Plan Weekday Riderships |
| 2. Average Dwell Time | Default, 20 sec |
| 3. Reentry Delay | Default, 5 sec |
| 4. Bus Frequency/Headways | Identified from Bus Schedules |
| 5. Acceleration/Deceleration Rate | Default, 4.0 $ft/s^2$ |
| 6. Transit Performance | Identified from Short Range Transit Plan |
| 7. Stops with shelters or benches | Identified from Aerials |
| 8. Average Passenger Trip Length | 3.7 mi |

*Highway Segments Parameters*

Vehicular LOS along the freeway segments (US 101) is determined using the Highway Capacity Software (HCS 2010, version 6.7), which uses HCM 2010 methodologies. Table 15 presents critical technical parameters required and our assumptions. Any parameters not included in Table 15 use default values.

**TABLE 15:**
**HCS PARAMETERS FOR HIGHWAY SEGMENT ANALYSIS**

| Parameter | Assumption |
|---|---|
| Volume | Caltrans 2014 Data |
| Heavy Vehichle Percentage | From Caltrans Data, 10% |
| Free-Flow Speed | Speed Limit identified from Aerials |
| Terrain | Level |
| Peak Hour Factor | 0.92 |

# Data Collection

Twenty (20) intersections have been identified by the City of San Luis Obispo for analysis. City-provided counts were conducted in February and March of 2014.

1. Madonna Road and Los Osos Valley Road — *City-provided traffic counts*
2. Madonna Road and Oceanaire Drive — *City-provided & Omni-Means traffic counts*
3. Madonna Road and Dalidio Drive — *City-provided traffic counts*
4. Madonna Road and El Mercado — *City-provided traffic counts*
5. Madonna Road and US 101 Southbound Ramps — *City-provided traffic counts*
6. Madonna Road and US 101 Northbound Ramps — *City-provided traffic counts*
7. Madonna Road and Higuera Street — *City-provided traffic counts*
8. Higuera Street and South Street — *City-provided traffic counts*
9. Los Osos Valley Road and Froom Ranch Way — *City-provided traffic counts*
10. Los Osos Valley Road and Auto Park Way — *City-provided traffic counts*
11. Los Osos Valley Road and Calle Joaquin — *City-provided traffic counts*
12. Los Osos Valley Road and US 101 Southbound Ramps — *City-provided traffic counts*
13. Los Osos Valley Road and US 101 Northbound Ramps — *City-provided traffic counts*
14. Los Osos Valley Road and S. Higuera Street — *City-provided traffic counts*
15. S. Higuera Street and Suburban Drive — *City-provided traffic counts*
16. S. Higuera Street and Tank Farm Road — *City-provided traffic counts*
17. S. Higuera Street and Granada Drive — *City-provided traffic counts*
18. S. Higuera Street and Prado Road — *City-provided traffic counts*
19. S. Higuera Street and Margarita Avenue — *City-provided traffic counts*
20. Prado Road and US 101 Northbound Ramps/Elks Lane — *Omni-Means traffic counts*

Omni-Means has also collected counts for the entrance driveway for the US Post Office driveway/Promenade on Dalidio Drive, which is approximately 270 feet south of the intersection of Madonna Road and Dalidio Drive. This intersection has been analyzed as part of the access management for the proposed project.

Ten (10) arterial roadway segments have been identified and pre-selected by the City of San Luis Obispo for analysis. However, some of these segments are required to be broken up into separate segments in between traffic signals for analysis. Average Daily Traffic (ADT) counts were provided by the City for the segments.

Madonna Road:

19. Los Osos Valley Road to Oceanaire Drive
20. Oceanaire Drive to Dalidio Drive
21. Dalidio Drive to El Mercado
22. El Mercado to US 101 Southbound Ramps
23. US 101 Southbound Ramps to US 101 Northbound Ramps
24. US 101 Northbound Ramps to Higuera Street

Higuera Street:

25. Madonna Road to Margarita Avenue
26. Margarita Avenue to Prado Road
27. Prado Road to Granada Drive
28. Granada Drive to Tank Farm Road
29. Tank Farm Road to Suburban Road
30. Suburban Road to Los Osos Valley Road

Los Osos Valley Road:

31. Madonna Road to Froom Ranch Way
32. Froom Ranch Way to Calle Joaquin
33. Calle Joaquin to US 101 Southbound Ramps
34. US 101 Southbound Ramps to US 101 Northbound Ramps
35. US 101 Northbound Ramps to S. Higuera Street

Prado Road

1. US 101 Northbound Ramps to Higuera Street

Dalidio Drive

2. Madonna Road to Froom Ranch Way (Future)

Froom Ranch Way

3. Los Osos Valley Road to Dalidio Drive (Future)

Two highway segments have been identified and pre-selected by the City of San Luis Obispo and Caltrans for analysis. Average Daily Traffic (ADT) counts were provided by Caltrans for the segments.

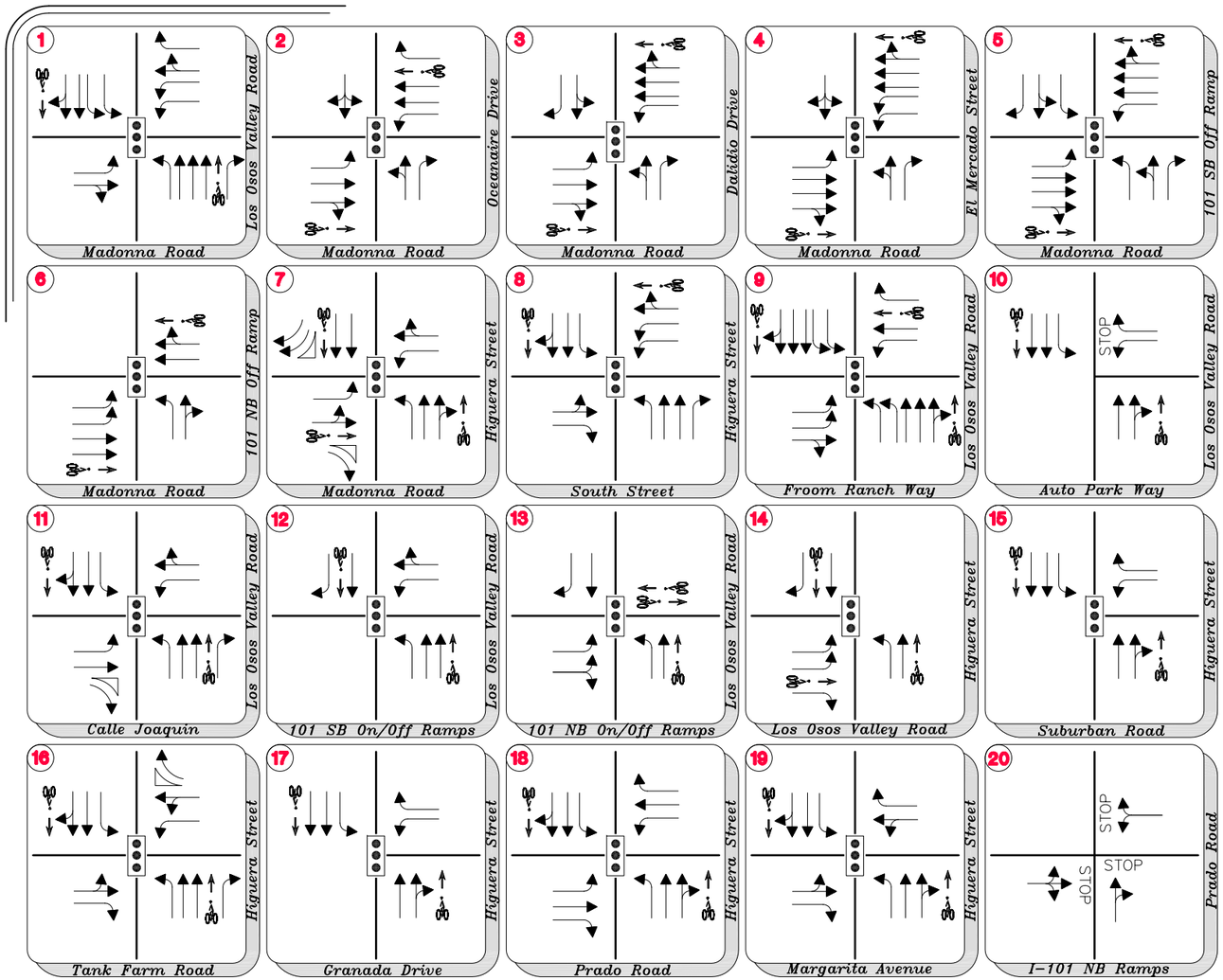
The two segments are as follows:

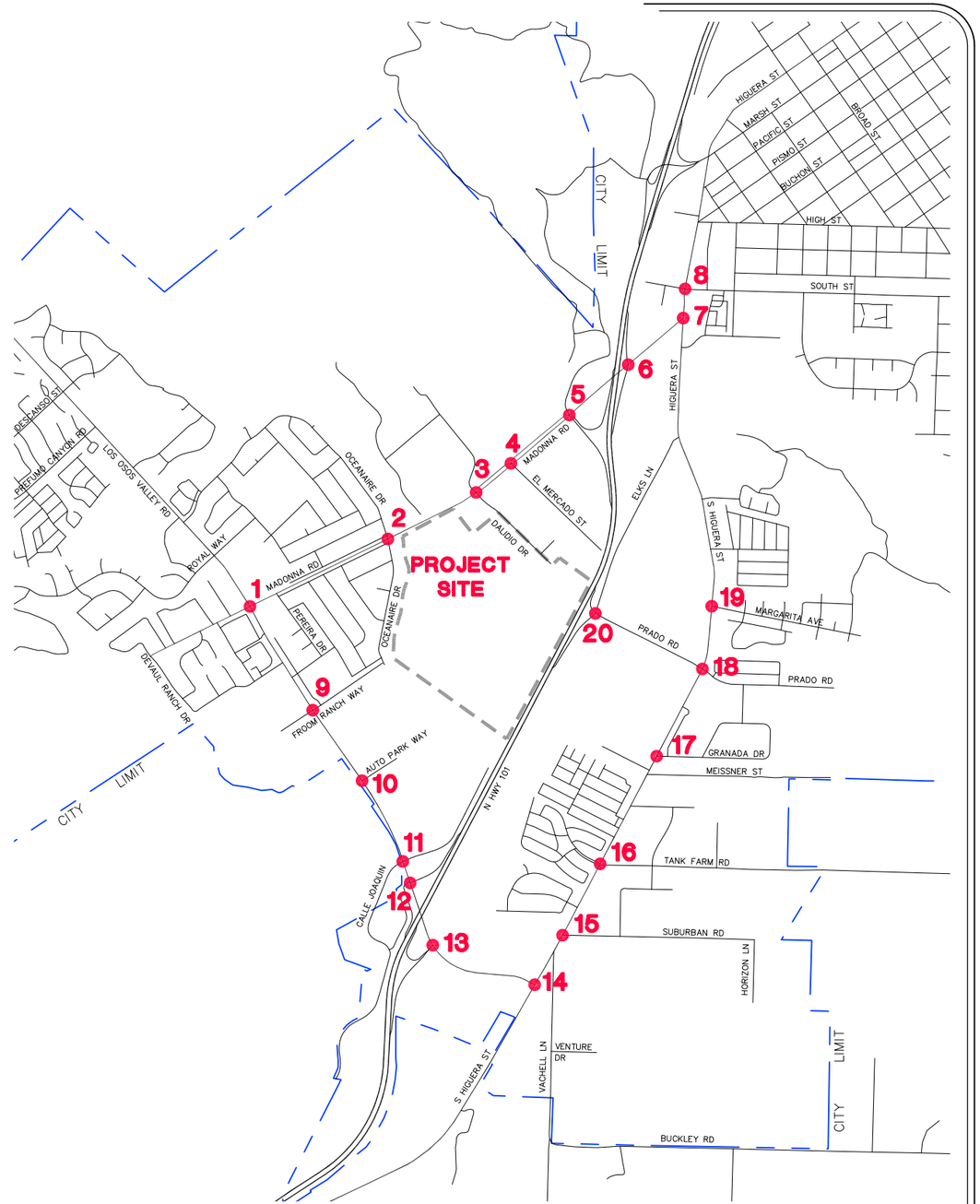
3. US 101 between Los Osos Valley Road and Prado Road
4. US 101 between Prado Road and Madonna Road

For the above locations, available AM and PM peak hour vehicular, bicycle, and pedestrian counts were obtained from either the City or collected by Omni-Means.

# Existing Conditions

Existing conditions establish baseline traffic conditions that currently exist in the study area. Currently, the study area is located along the S. Higuera Street corridor between Prado Road and Los Osos Valley Road, which is developed with housing in the southwest area, commercial and offices fronting Prado Road and S. Higuera Street on the east, and service and manufacturing land use along Tank Farm Road and south of Suburban Road. Existing turning movement count data was provided by the City of San Luis Obispo, or collected by Omni-Means, for weekday AM and PM peak hours, along with the City-maintained "Master" Synchro networks which are used to develop the project Synchro files. The counts were taken from the City's Traffic Counts and Speed Surveys database (online). Figure 2 presents the study locations and intersection lane geometries. Figure 3 presents the existing peak hour volumes at the study intersections. Figure 4 presents the Average Daily Traffic (ADT) along the street segments.



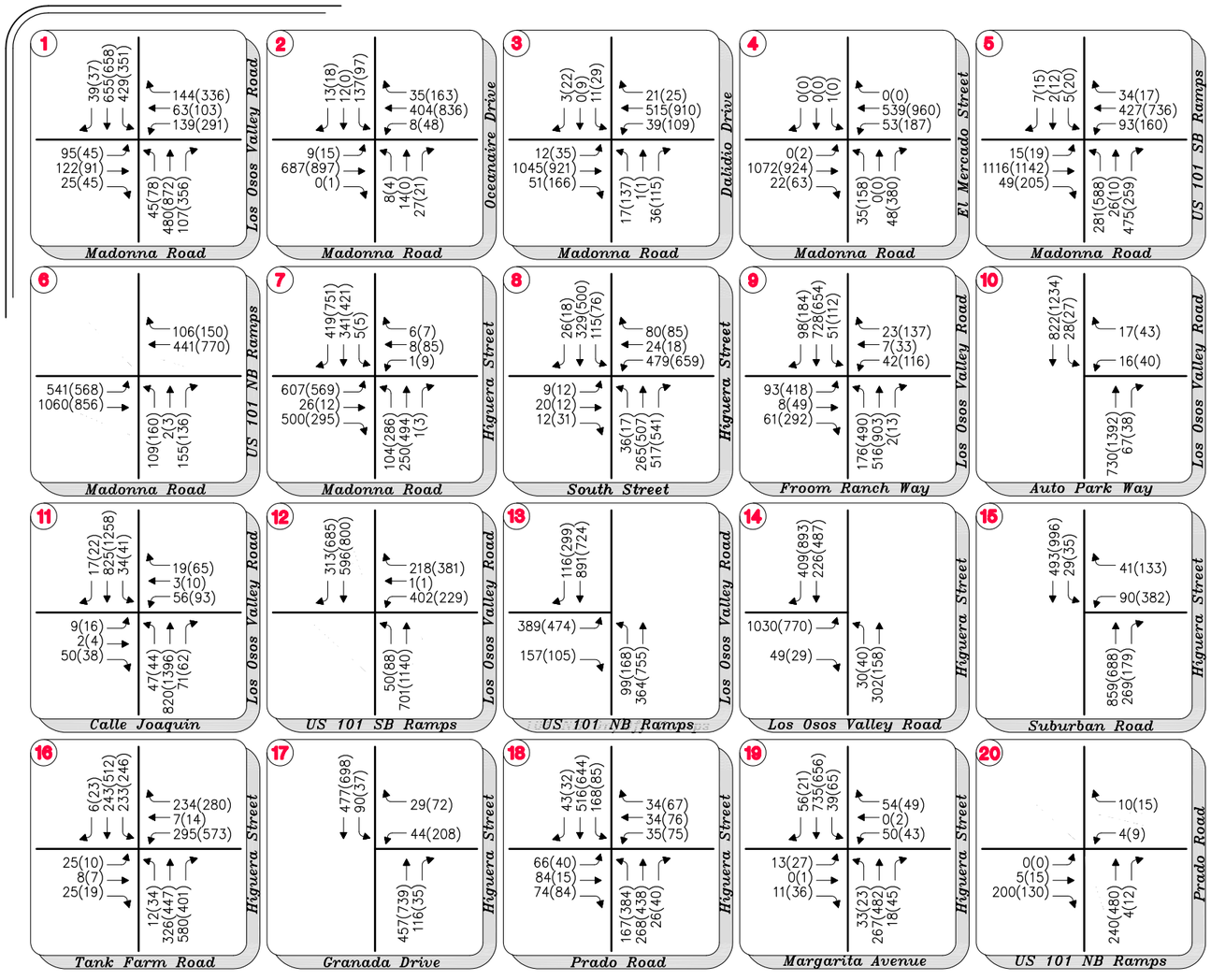

LEGEND:

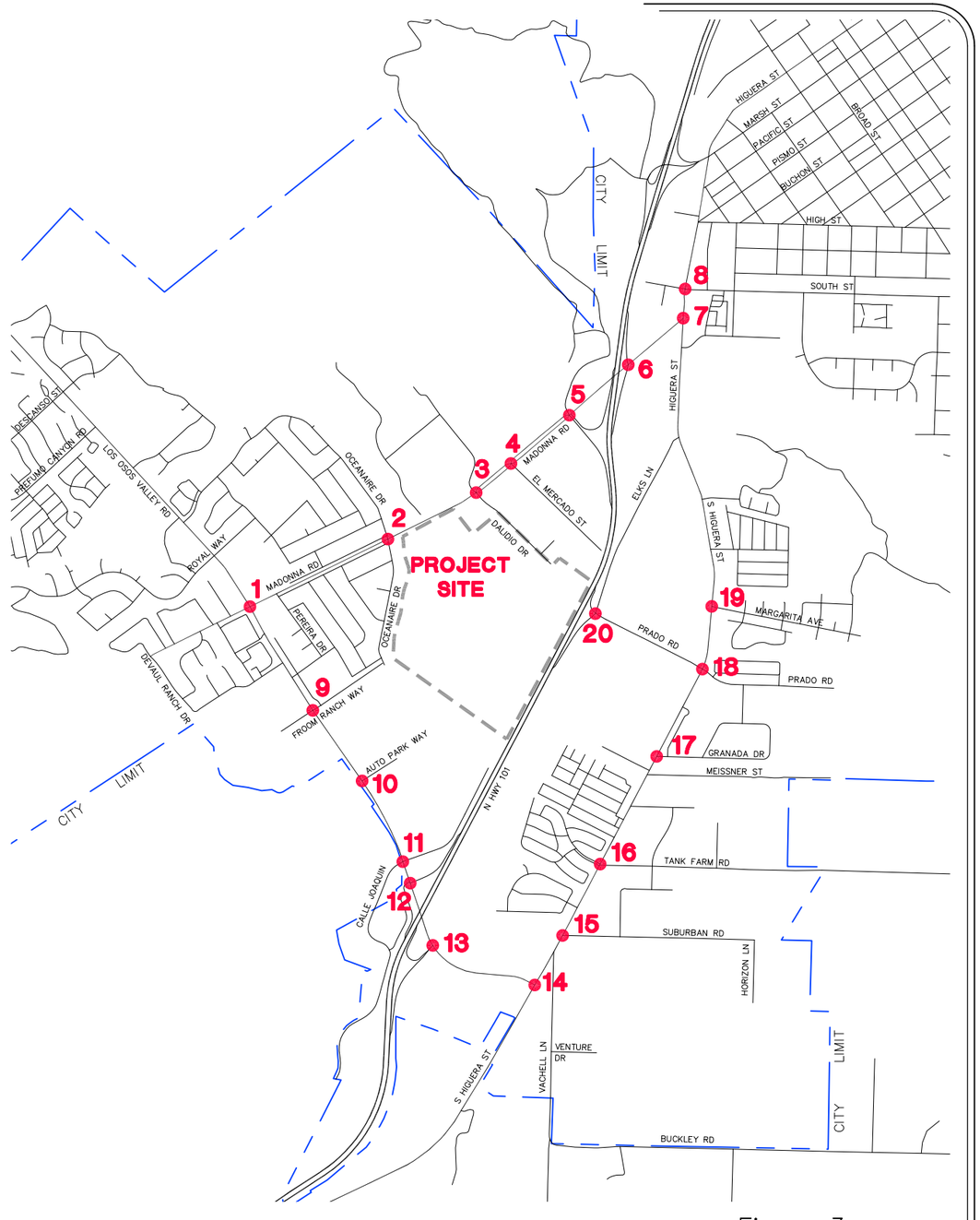
- BICYCLE LANE (CLASS II)
- BICYCLE LANE (CLASS I)
- VEHICLE LANE

**San Luis Ranch Specific Plan Multimodal TIS**

Figure 2

# Existing Lane Geometrics and Control



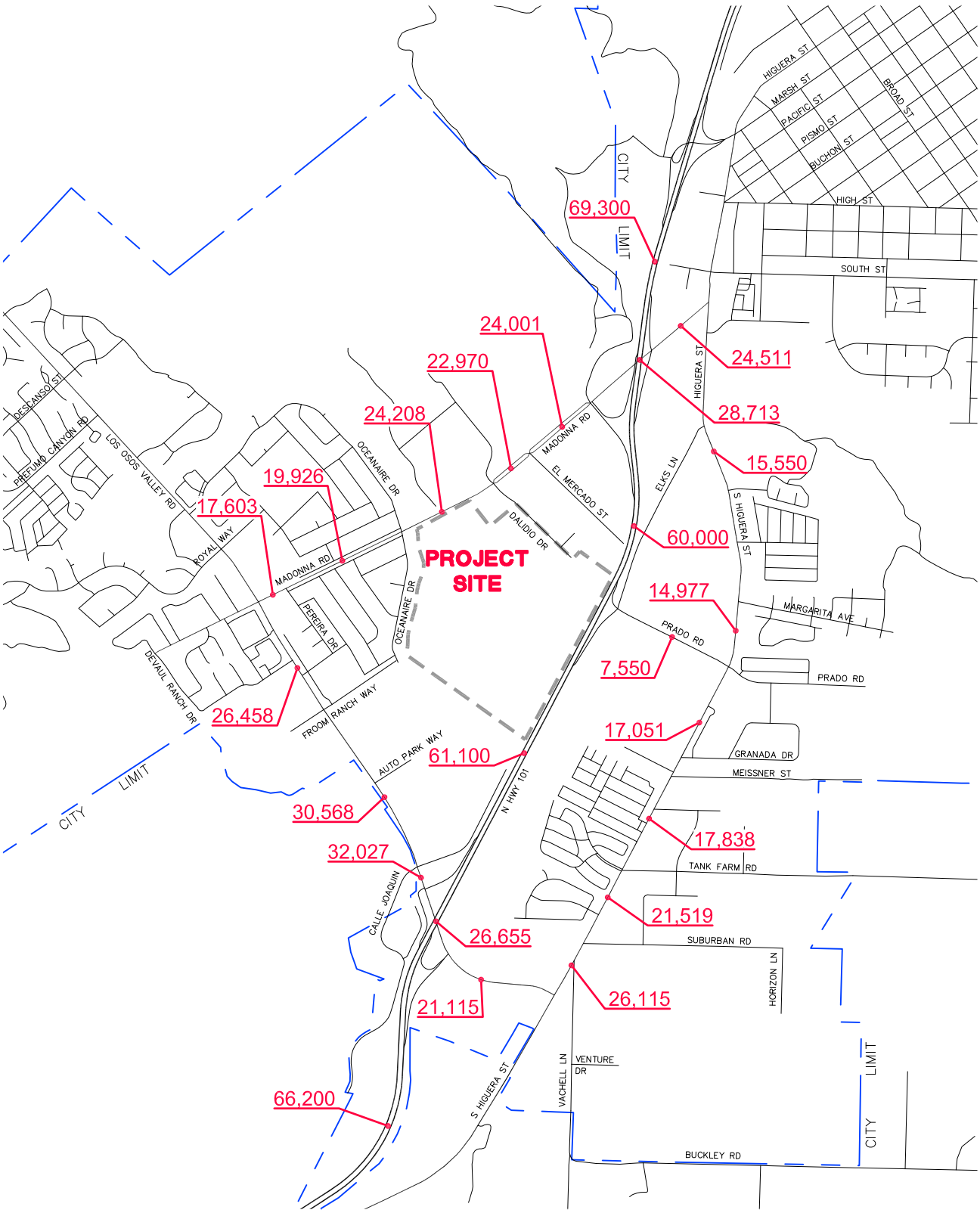




LEGEND:
XX – AM PEAK HOUR TRAFFIC VOLUMES
(XX) – PM PEAK HOUR TRAFFIC VOLUMES

**San Luis Ranch Specific Plan Multimodal TIS**

Figure 3

# Existing Peak Hour Traffic Volumes




**San Luis Ranch Specific Plan Multimodal TIS** Figure 4

# Existing Average Daily Traffic Volumes

## Roadway Network

The study roadways for this project are described below. Due the varying nature of the City street network the directionality defined below may or may not be consistent with how directionality has been presented in other traffic studies or documentation, this however does not affect the results of the analysis and findings.

US Highway 101 (US 101) is functionally classified as Urban Principal Arterial and is part of the National Truck Network. Land uses along US 101 are comprised of urban commercial and residential, open space, national forest and grazing land. US 101 is a north-south, four lane mixed flow freeway through the City of San Luis Obispo. Between several closely spaced interchanges north of Los Osos Valley Road, auxiliary lanes are provided to facilitate the flow of entering and exiting traffic. Outside the City, US 101 provides access to Paso Robles to the north and the Five Cities area to the south. It is a primary route for all truck traffic originated from/destined to the City of San Luis Obispo (SLO LUCE, 2014).

Froom Ranch Way is a east-west roadway that connects Los Osos Valley Road to the Perfumo Creek Shopping Center on the east side and the Irish Hills Plaza on the west side. These large shopping centers contain stores such as Costco Wholesale, Home Depot, Whole Foods, BevMo!, Target, etc. that attract a large number of trips and is located in between the US 101 interchange and large residential neighborhoods. Froom Ranch Way is four lanes west of Los Osos Valley Road and two lanes east of Los Osos Valley Road with sidewalks on both sides and a Class II bike lane on the east side. The speed limit is 25 mph. Planned changes to Froom Ranch Way include extension as a two-lane collector east to Dalidio Drive

Higuera Street (S. Higuera Street) is a north-south arterial within the study area. Higuera Street connects to downtown San Luis Obispo to the north and terminates to the south at its interchange with US 101. South of Marsh Street, it provides a four-lane roadway with Class II bike lanes and continuous sidewalks. The posted speed limit within the study area is 45 mph.

Los Osos Valley Road is a north-south arterial that extends from Los Osos to Higuera Street. It connects with US 101 ramp termini approximately 1/2 mi west of S. Higuera Street and is functionally classified in the City as an Arterial or a Parkway Arterial. It provides four lanes with Class II bike lanes and sidewalks on both sides for the majority of the study area. The posted speed limit within the study area is 35 – 45 mph.

Since data was collected in 2014, improvements due to the Los Osos Valley Road (LOVR)/US 101 Interchange Traffic Relief Project have been constructed. Improvements included widening Los Osos Valley Road to four lanes from the existing four-lane section west of Calle Joaquin Road to approximately 500 feet west of South Higuera Street; and constructing sidewalks and Class II bicycle lanes along both sides of Los Osos Valley Road.

Madonna Road is an east-west roadway that extends from Devaul Ranch Road just west of Los Osos Valley Road and ends at Higuera Street to the east. It is functionally classified as a local street west of Los Osos Valley Road and an arterial east of Los Osos Valley Road. Madonna Road provides a total of two, four or six travel lanes, and Class II bike lanes with sidewalks on one or both sides. It also connects with US 101 ramp termini approximately 1/2 mile west of Higuera Street. The posted speed limit within the study area is 40 mph.

Prado Road is an east-west two-lane roadway that extends eastward from the US 101 Northbound Ramps and ends east of Higuera Street. It is functionally classified as a regional

route/highway in the City's General Plan. Planned changes to Prado Road include extension west from US 101 to Madonna Road and east to Broad Street. Prado Road is a two-lane roadway with sidewalks on both sides and on-street parking at various locations. The posted speed limit within the study area is 35 mph.

Tank Farm Road is an east-west parkway arterial which connects S. Higuera Street to Broad Street to the east, and continues as Orcutt Road east of the Orcutt Area. In the study area, it is a four-lane roadway with Class II bike lanes and sidewalks on both sides. The posted speed limit within the study area is 45 mph.

# Existing Conditions Analysis

The Existing conditions multimodal analysis for the study intersections and segments are presented below.

## Existing Conditions Intersection Analysis

Table 16 provides a summary of the Existing conditions vehicular AM and PM peak hour intersection delay and LOS. Table 17 provides a summary of the Existing pedestrian AM and PM peak hour conditions at the study intersections. Table 18 provides a summary of the Existing bicycle AM and PM peak hour conditions at the study intersections. Table 19 provides a summary of the Existing conditions queuing analysis.

**TABLE 16:**
**EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE: AUTOMOBILE ANALYSIS**

| # | Intersection | Control Type[1,2] | Target LOS | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | v/c[3] | Delay | LOS | v/c[3] | Delay | LOS |
| 1 | Madonna Road/Los Osos Valley Road | Signal | D | | 26.1 | C | | 45.0 | D |
| 2 | Madonna Road/Oceanaire Drive | Signal | D | | 19.6 | B | | 14.2 | B |
| **3** | **Madonna Road/Dalidio Drive** | **Signal** | **D** | | 9.7 | A | **2.11** | **56.2** | **E** |
| 4 | Madonna Road/El Mercado | Signal | D | | 7.3 | A | | 19.6 | B |
| **5** | **Madonna Road/US 101 SB Ramps/Madonna** | **Signal** | **C** | **1.31** | **48.7** | **D** | | 23.4 | C |
| 6 | Madonna Road/US 101 NB Ramps | Signal | C | | 17.4 | B | | 21.1 | C |
| 7 | Madonna Road/Higuera Street | Signal | D | | 18.6 | B | | 21.7 | C |
| **8** | **Higuera Street/South Street** | **Signal** | **D** | | 21.4 | C | **1.31** | **63.1** | **E** |
| 9 | Los Osos Valley Road/Froom Ranch Way | Signal | D | | 19.4 | B | | 34.6 | C |
| 10 | Los Osos Valley Road/Auto Park Way | TWSC | D | | 15.0 | B | | 34.1 | D |
| 11 | Los Osos Valley Road/Calle Joaquin | Signal | D | | 4.6 | A | | 5.6 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Signal | C | | 13.0 | B | | 19.0 | B |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Signal | C | | 27.6 | C | | 21.8 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | Signal | D | | 16.0 | B | | 19.1 | B |
| 15 | S. Higuera Street/Suburban Drive | Signal | D | | 6.3 | A | | 11.1 | B |
| 16 | S. Higuera Street/Tank Farm Road | Signal | D | | 36.2 | D | | 21.0 | C |
| 17 | S. Higuera Street/Granada Drive | Signal | D | | 8.4 | A | | 10.5 | B |
| 18 | S. Higuera Street/Prado Road | Signal | D | | 16.7 | B | | 20.9 | C |
| 19 | S. Higuera Street/Margarita Avenue | Signal | D | | 7.4 | A | | 10.8 | B |
| 20 | Prado Road/US 101 NB Ramps | AWSC | C | | 9.0 | A | | 13.5 | B |

*Notes:*

*1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout*

*2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT*

*3. Volume to Capacity Ratio (v/c) is for worst movement delay, for unacceptable LOS only*

**TABLE 17:**
**EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE: PEDESTRIAN ANALYSIS**

| # | Intersection | Approach | Target LOS | AM Peak Hour Ped. Crosswalk Score | AM Peak Hour LOS | PM Peak Hour Ped. Crosswalk Score | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|
| 1 | Madonna Road/Los Osos Valley Road | EB | C | 2.10 | B | 2.11 | B |
| | | WB | C | 2.90 | C | 3.16 | C |
| | | NB | C | 2.94 | C | 3.41 | C |
| | | SB | C | 3.28 | C | 3.18 | C |
| 2 | Madonna Road/Oceanaire Drive | EB | C | 2.69 | B | 2.87 | C |
| | | WB | C | 3.05 | C | 3.28 | C |
| | | NB | C | 1.99 | A | 2.07 | B |
| | | SB | C | 1.86 | A | 1.85 | A |
| 3 | Madonna Road/Dalidio Drive | EB | C | 2.96 | C | 3.24 | C |
| | | WB | C | 2.99 | C | 3.07 | C |
| | | NB | C | 2.06 | B | 2.25 | B |
| | | SB | C | 1.98 | A | 2.03 | B |
| 4 | Madonna Road/El Mercado | EB | C | n/a | - | n/a | - |
| | | WB | C | 3.07 | C | 3.16 | C |
| | | NB | C | 2.26 | B | 2.75 | B |
| | | SB | C | 1.74 | A | 1.74 | A |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | C | 3.00 | C | 3.16 | C |
| | | WB | C | n/a | - | n/a | - |
| | | NB | C | 2.75 | B | 2.67 | B |
| | | SB | C | 2.17 | B | 2.18 | B |
| 6 | Madonna Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | 2.84 | C | 2.80 | C |
| | | NB | C | 1.99 | A | 2.04 | B |
| | | SB | C | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | C | 3.01 | C | 2.91 | C |
| | | WB | C | 1.98 | A | 2.00 | A |
| | | NB | C | 2.70 | B | 2.78 | C |
| | | SB | C | n/a | - | n/a | - |
| 8 | Higuera Street/South Street | EB | C | 2.01 | B | 2.01 | B |
| | | WB | C | 2.73 | B | 2.77 | C |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.48 | B | 2.54 | B |
| 9 | Los Osos Valley Road/Froom Ranch Way | EB | C | 2.49 | B | 2.84 | C |
| | | WB | C | 2.38 | B | 2.59 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 3.06 | C | 3.26 | C |
| 10 | Los Osos Valley Road/Auto Park Way | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | C | 2.48 | B | 2.27 | B |
| | | WB | C | 2.08 | B | 2.16 | B |
| | | NB | C | 2.98 | C | 3.19 | C |
| | | SB | C | 2.88 | C | 3.17 | C |
| **12** | Los Osos Valley Road/US 101 SB Ramps | EB | C | 1.90 | A | 2.32 | B |
| | | WB | C | 2.23 | B | 2.12 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | C | 2.44 | B | 2.58 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | C | 2.65 | B | 2.73 | B |
| | | NB | C | 2.25 | B | 2.30 | B |
| | | SB | C | n/a | - | n/a | - |
| 15 | S. Higuera Street/Suburban Drive | WB | C | 2.15 | B | 2.29 | B |
| | | **NB** | **C** | 2.98 | C | **3.60** | **D** |
| | | SB | C | 2.73 | B | 2.85 | C |
| 16 | S. Higuera Street/Tank Farm Road | EB | C | 2.01 | B | 2.01 | B |
| | | WB | C | 2.91 | C | 3.04 | C |
| | | NB | C | 3.33 | C | 3.27 | C |
| | | SB | C | 2.65 | B | 2.78 | C |
| 17 | S. Higuera Street/Granada Drive | WB | C | 2.05 | B | 2.13 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.60 | B | 2.76 | C |
| 18 | S. Higuera Street/Prado Road | EB | C | 2.35 | B | 2.41 | B |
| | | WB | C | 2.28 | B | 2.31 | B |
| | | NB | C | 2.71 | B | 2.95 | C |
| | | SB | C | 2.76 | C | 2.78 | C |
| 19 | S. Higuera Street/Margarita Avenue | EB | C | 2.22 | B | 2.06 | B |
| | | WB | C | 2.12 | B | 2.17 | B |
| | | NB | C | 2.74 | B | 2.79 | C |
| | | SB | C | 2.70 | B | 2.77 | C |
| 20 | Prado Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |

Notes:

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.

HCM 2010 Methodologies for the pedestrian mode at two-way stop-controlled intersections is limited to the uncontrolled crossing. No methodology exists for evaluating pedestrian performance for the stop controlled approach (cross-street). However, it is reasoned that this type of control has negligible influence on pedestrian service along the segment.

## TABLE 18:
## EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE: BICYCLE ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Bicycle LOS Score | AM Peak Hour Bicycle LOS LOS | PM Peak Hour Bicycle LOS Score | PM Peak Hour Bicycle LOS LOS |
|---|---|---|---|---|---|---|---|
| 1 | Madonna Road/Los Osos Valley Road | EB | D | 3.26 | C | 3.14 | C |
| | | WB | D | 3.37 | C | 3.99 | D |
| | | NB | D | 1.64 | A | 2.01 | B |
| | | SB | D | 2.60 | B | 2.49 | B |
| 2 | Madonna Road/Oceanaire Drive | EB | D | 2.72 | B | 2.91 | C |
| | | WB | D | 1.05 | A | 1.59 | A |
| | | NB | D | 2.74 | B | 2.70 | B |
| | | SB | D | 2.22 | B | 2.13 | B |
| 3 | Madonna Road/Dalidio Drive | EB | D | 2.17 | B | 2.08 | B |
| | | WB | D | 1.47 | A | 1.71 | A |
| | | NB | D | 2.99 | C | 3.32 | C |
| | | SB | D | 2.84 | C | 2.92 | C |
| 4 | Madonna Road/El Mercado | EB | D | 1.80 | A | 1.67 | A |
| | | WB | D | 1.67 | A | 1.94 | A |
| | | NB | D | 3.19 | C | 3.93 | D |
| | | SB | D | 3.03 | C | 3.03 | C |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | D | 2.00 | A | 2.05 | B |
| | | WB | D | 1.61 | A | 1.79 | A |
| | | NB | D | n/a | - | n/a | - |
| | | SB | D | 2.90 | C | 2.96 | C |
| 6 | Madonna Road/US 101 NB Ramps | EB | D | 2.69 | B | 2.33 | B |
| | | WB | D | 1.58 | A | 1.82 | A |
| | | NB | D | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | D | 3.27 | C | 2.75 | B |
| | | WB | D | 2.43 | B | 2.58 | B |
| | | NB | D | 1.69 | A | 2.05 | B |
| | | SB | D | 2.14 | B | 2.48 | B |
| 8 | Higuera Street/South Street | EB | D | 2.70 | B | 2.73 | B |
| | | WB | D | 2.59 | B | 2.94 | C |
| | | NB | D | 2.94 | C | 3.18 | C |
| | | SB | D | 1.53 | A | 1.66 | A |
| **9** | **Los Osos Valley Road/Froom Ranch Way** | **EB** | **D** | 3.38 | C | **4.39** | **E** |
| | | WB | D | 1.81 | A | 2.49 | B |
| | | NB | D | 1.73 | A | 2.12 | B |
| | | SB | D | 1.72 | A | 1.74 | A |
| 10 | Los Osos Valley Road/Auto Park Way | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | D | 2.99 | C | 2.97 | C |
| | | WB | D | 3.08 | C | 3.22 | C |
| | | NB | D | 1.45 | A | 1.87 | A |
| | | SB | D | 0.37 | A | 0.69 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | WB | D | n/a | - | n/a | - |
| | | NB | D | 2.69 | B | 3.04 | C |
| | | SB | D | 2.33 | B | 3.18 | C |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | NB | D | 1.82 | A | 2.58 | B |
| | | SB | D | 3.45 | C | 3.43 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | D | 1.99 | A | 1.73 | A |
| | | NB | D | 1.87 | A | 1.63 | A |
| | | SB | D | 2.38 | B | 3.67 | D |
| 15 | S. Higuera Street/Suburban Drive | WB | D | 0.89 | A | 1.55 | A |
| | | NB | D | 2.20 | B | 1.94 | A |
| | | SB | D | 1.71 | A | 2.13 | B |
| 16 | S. Higuera Street/Tank Farm Road | EB | D | 2.70 | B | 2.66 | B |
| | | WB | D | 2.45 | B | 2.99 | C |
| | | NB | D | 2.07 | B | 2.01 | B |
| | | SB | D | 1.66 | A | 1.91 | A |
| 17 | S. Higuera Street/Granada Drive | WB | D | 2.63 | B | 2.99 | C |
| | | NB | D | 1.70 | A | 1.88 | A |
| | | SB | D | 1.83 | A | 1.98 | A |
| 18 | S. Higuera Street/Prado Road | EB | D | 2.37 | B | 2.22 | B |
| | | WB | D | 2.69 | B | 2.90 | C |
| | | NB | D | 1.64 | A | 1.99 | A |
| | | SB | D | 1.87 | A | 1.90 | A |
| 19 | S. Higuera Street/Margarita Avenue | EB | D | 2.46 | B | 2.53 | B |
| | | WB | D | 2.69 | B | 2.68 | B |
| | | NB | D | 1.57 | A | 1.78 | A |
| | | SB | D | 2.11 | B | 2.04 | B |
| 20 | Prado Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.*

*No methodology exists for evaluating bicycle performance at two-way stop-controlled intersections. However, it is reasoned that this type of control has negligible influence on bicycle service along the segment for stop controll on the cross-street.*

**TABLE 19:**
**EXISTING CONDITIONS 95TH PERCENTILE QUEUING ANALYSIS**

| *Intersection* | | | | | 95th Percentile Queue/Lane (ft) | |
|---|---|---|---|---|---|---|
| ID | Location | Movement | No. Lanes | Total Storage (ft)[1] | AM Peak Hour | PM Peak Hour |
| 1 | Madonna Road/Los | Northbound Right | 1 | 175 | 96 | **240** |
| 7 | Madonna Road/Higuera Street | Eastbound Right | 1 | 150 | **232** | 146 |
| | | Northbound Left | 1 | 160 | 107 | **251** |
| 8 | Higuera Street/South Street | Westbound Left | 2 | 240 | **219** | **310** |
| | | Northbound Left | 1 | 60 | **87** | **74** |
| | | Northbound Right | 1 | 60 | **142** | **136** |
| | | Southbound Left | 1 | 70 | **109** | **97** |
| 9 | Los Osos Valley Road/Froom Ranch | Westbound Right | 1 | 50 | 41 | **82** |
| 11 | Los Osos Valley Road/Calle Joaquin | Southbound Left | 1 | 180 | 108 | **170** |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Westbound Left | 1 | 150 | **241** | **224** |
| | | Northbound Left | 1 | 80 | **114** | **122** |
| | | Southbound Through | 1 | 240 | **297** | **289** |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Eastbound Left/Right | 1 | 200 | **221** | 177 |
| | | Northbound Left | 1 | 140 | 117 | **181** |
| | | Southbound Through | 1 | 865 | **1042** | 822 |
| | | Southbound Right | 1 | 60 | **186** | **219** |
| 14 | S. Higuera Street/Los Osos Valley Road | Eastbound Right | 1 | 90 | **164** | **122** |
| 16 | S. Higuera Street/Tank Farm | Northbound Right | 1 | 100 | **137** | **134** |
| | | Southbound Left | 1 | 165 | **187** | **218** |
| 18 | S. Higuera Street/Prado Road | Northbound Left | 1 | 100 | **131** | **176** |
| | | Southbound Left | 1 | 60 | **116** | **109** |
| 19 | S. Higuera | Southbound Left | 1 | 60 | 58 | **67** |

*Notes:* ***1. Bolded entries indicate queues exceed available storage***

2. Storage Length of " - " represents a lane which exceeds 1,000 feet, usually a through lane.

3. For Movements with more than one lane, the maximum of the 95th percentile queue is reported.

4. * Represents storage lengths for one lane; second lane is a left or right trap lane.

As shown in Table 16 above, the intersection of Madonna Road/Dalidio Drive, Madonna Road/US 101 SB Ramps/Madonna Inn, Higuera Street/South Street, and Los Osos Valley Road/Auto Park Way are currently operating at unacceptable conditions during AM and PM peak hours. The minor street northbound and southbound approaches experience long delays. Pedestrian and bicycle analysis shows acceptable conditions at study intersections, except for the intersections of Los Osos Valley Road/US 101 SB Ramps and Los Osos Valley Road/Froom Ranch Way.

## Existing Conditions Segment Analysis

Table 20 provides a summary of the Existing vehicular AM and PM peak hour conditions for the study segments. Table 21 provides a summary of the Existing pedestrian AM and PM peak hour conditions for the study segments. Table 22 provides a summary of the Existing bicycle AM and PM peak hour conditions for the study segments. Table 23 provides a summary of the Existing transit AM and PM peak hour conditions for the study segments. Table 24 provides a summary of the Existing freeway segments analysis for AM and PM peak hour conditions for the study segments along US 101.

## TABLE 20:
## EXISTING CONDITIONS SEGMENT LEVEL OF SERVICE: AUTOMOBILE ANALYSIS

| AUTO SEGMENT LOS | | | | | | AM PEAK | | | | PM PEAK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **D** | **21.4** | **42.1** | **51%** | **C** | **12.9** | **42.1** | **31%** | **E** |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 29.3 | 42.1 | 70% | B | 25.7 | 42.1 | 61% | C |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 22.7 | 40.8 | 56% | C | 19.2 | 40.7 | 47% | D |
| | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 27.1 | 40.7 | 66% | C | 18.9 | 40.8 | 46% | D |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 21.2 | 34.8 | 61% | C | 14.1 | 34.8 | 41% | D |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **D** | **21.2** | **34.7** | **61%** | **C** | **13.3** | **34.6** | **39%** | **E** |
| 4 | Madonna Rd | US 101 SB Ramps | El Mercado | WB | D | 32.2 | 37.9 | 85% | A | 21.2 | 37.3 | 57% | C |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 22.5 | 37.8 | 59% | C | 18.6 | 37.7 | 49% | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 34.5 | 37.8 | 91% | A | 34.0 | 37.8 | 90% | A |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 32.7 | 37.8 | 86% | A | 33.5 | 37.8 | 88% | A |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | **9.2** | **37.2** | **25%** | **F** | **10.6** | **37.2** | **29%** | **F** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | **17.4** | **37.2** | **47%** | **D** | **13.3** | **37.2** | **36%** | **E** |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 37.5 | 44.5 | 84% | B | 36.0 | 44.5 | 81% | B |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 35.7 | 44.8 | 80% | B | 36.8 | 44.8 | 82% | B |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 18.6 | 38.9 | 48% | D | 16.5 | 38.9 | 42% | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 26.3 | 38.9 | 68% | B | 22.0 | 38.9 | 57% | C |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 33.8 | 41.8 | 81% | B | 30.6 | 41.8 | 73% | B |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 25.6 | 41.9 | 61% | C | 28.1 | 41.9 | 67% | B |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 42.6 | 41.6 | 102% | A | 27.4 | 42.6 | 64% | C |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 30.5 | 41.6 | 73% | B | 28.7 | 42.6 | 67% | B |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 27.3 | 42.4 | 65% | C | 24.9 | 41.2 | 60% | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 20.2 | 42.5 | 47% | D | 18.9 | 41.3 | 46% | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 20.6 | 42.1 | 49% | D | 15.9 | 39.1 | 41% | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 24.8 | 42.0 | 59% | C | 21.6 | 39.0 | 55% | C |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 24.5 | 41.9 | 58% | C | 18.2 | 41.8 | 43% | D |
| | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 20.1 | 41.8 | 48% | D | 16.9 | 41.8 | 40% | D |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 35.5 | 43.0 | 83% | B | 31.1 | 43.0 | 72% | B |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 31.0 | 43.2 | 72% | B | 23.4 | 43.2 | 54% | C |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **D** | **13.5** | **32.1** | **42%** | **D** | **9.1** | **32.1** | **28%** | **F** |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 17.0 | 31.1 | 55% | C | 15.3 | 31.1 | 49% | D |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **D** | **10.2** | **37.7** | **27%** | **F** | **13.2** | **37.7** | **35%** | **E** |
| | **Los Osos Valley** | **US 101 NB Ramps** | **US 101 SB Ramps** | **NB** | **D** | **11.7** | **37.4** | **31%** | **E** | 32.0 | 37.4 | 85% | A |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 20.9 | 39.2 | 53% | C | 17.9 | 39.2 | 46% | D |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 29.5 | 39.2 | 75% | B | 25.8 | 39.2 | 66% | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 28.0 | 38.3 | 73% | B | 22.2 | 38.3 | 58% | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 23.8 | 38.3 | 62% | C | 21.2 | 38.3 | 55% | C |
| 19 | **Froom Ranch Way** | **Dick's Sporting Goods Drwy** | **Los Osos Valley** | **WB** | **D** | **17.9** | **37.7** | **47%** | **D** | **12.7** | **37.9** | **33%** | **E** |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Drwy | EB | D | 35.5 | 38.1 | 93% | A | 34.6 | 37.4 | 93% | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Rd | SB | D | 21.5 | 31.2 | 69% | B | 21.5 | 31.2 | 69% | B |
| | **Dalidio Dr** | **Froom Ranch Rd** | **Madonna Rd** | **NB** | **D** | **5.5** | **31.1** | **18%** | **F** | **0.4** | **31.1** | **1%** | **F** |

## TABLE 21:
## EXISTING CONDITIONS SEGMENT LEVEL OF SERVICE: PEDESTRIAN ANALYSIS

| PEDESTRIAN SEGMENT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Average Ped. Space ($ft^2$/p) | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | **6090** | **3.54** | **D** | **3.80** | **D** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **C** | **17482** | **3.75** | **D** | **3.87** | **D** |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **C** | **84000** | **3.62** | **D** | **3.92** | **D** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | **26250** | **3.80** | **D** | **3.89** | **D** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | **37450** | **3.52** | **D** | **3.78** | **D** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | **52920** | **3.63** | **D** | **3.73** | **D** |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **C** | **26250** | **3.59** | **D** | **3.75** | **D** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | **27915** | **3.84** | **D** | **4.04** | **D** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **C** | **No Peds** | **3.66** | **D** | **3.81** | **F** |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **C** | **No Peds** | **4.06** | **D** | **3.98** | **D** |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **25200** | **3.58** | **D** | **3.72** | **D** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **19838** | **3.84** | **D** | **3.72** | **D** |
| 7 | **S. Higuera St** | **Madonna Rd** | **Margarita Ave** | **SB** | **C** | **23247** | **3.80** | **D** | **3.78** | **D** |
| | **S. Higuera St** | **Margarita Ave** | **Madonna Rd** | **NB** | **C** | **5398** | **3.60** | **D** | **3.78** | **D** |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **40979** | **3.61** | **D** | **3.63** | **D** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | 21700 | 3.47 | C | **3.57** | **D** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **C** | **9292** | **3.55** | **D** | **3.65** | **D** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | C | 8400 | 3.16 | C | 3.38 | C |
| 10 | **S. Higuera St** | **Granada Dr** | **Tank Farm Road** | **SB** | **C** | **46305** | **3.54** | **D** | **3.69** | **D** |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 49140 | 3.11 | C | 3.26 | C |
| 11 | **S. Higuera St** | **Tank Farm Road** | **Suburban Drive** | **SB** | **C** | **12600** | **3.57** | **D** | **3.80** | **D** |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | C | 31500 | 3.48 | C | 3.44 | C |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **39312** | **3.56** | **D** | **3.85** | **D** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | **43533** | **3.84** | **D** | **3.89** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | **21833** | **3.81** | **D** | **3.88** | **D** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **0** | **3.72** | **F** | **4.04** | **F** |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **C** | **27300** | **3.76** | **D** | **3.97** | **D** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **C** | **22050** | **3.67** | **D** | **3.94** | **D** |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **No Peds** | **3.59** | **D** | **3.92** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | **63000** | **3.62** | **D** | **3.91** | **D** |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **C** | **No Peds** | **4.15** | **D** | **4.19** | **D** |
| | **Los Osos Valley** | **US 101 NB Ramps** | **US 101 SB Ramps** | **NB** | **C** | **53928** | **3.62** | **D** | **3.85** | **D** |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **46575** | **4.22** | **D** | **4.01** | **D** |
| | **Los Osos Valley** | **S. Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **1680** | **3.67** | **D** | **4.09** | **D** |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 56133 | 2.90 | C | 3.10 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 3019 | 3.42 | C | 3.32 | C |
| 19 | **Froom Ranch Way** | **Dick's Sporting Goods Drwy** | **Los Osos Valley** | **WB** | **C** | No Peds | 3.29 | C | **3.52** | **D** |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Drwy | EB | C | 75600 | 1.67 | A | 1.79 | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Rd | SB | C | 56700 | 1.46 | A | 1.56 | A |
| | Dalidio Dr | Froom Ranch Rd | Madonna Rd | NB | C | 73710 | 3.04 | C | 3.35 | C |

Notes:

Sidewalk is present along frontage roads for segments #1 - Madonna Road and #13 - Los Osos Valley Road, and is not accounted for in this analysis.

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is reasoned that it has negligible influence on pedestrian sevice along the segment.

**TABLE 22:**
**EXISTING CONDITIONS SEGMENT LEVEL OF SERVICE: BICYCLE ANALYSIS**

| BICYCLE SEGMENT LOS | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 3.60 | D | 3.94 | D |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 3.73 | D | 3.79 | D |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 3.15 | C | 3.23 | C |
| | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 3.57 | D | 3.43 | C |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 3.27 | C | 3.19 | C |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | 3.49 | C | 3.39 | C |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | 3.94 | D | **4.34** | **E** |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 3.62 | D | 3.64 | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 3.30 | C | 3.35 | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 3.38 | C | 3.33 | C |
| 6 | Madonna Rd | Higuera St | US 101 NB Ramps | WB | D | 3.48 | C | 3.54 | D |
| | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 3.66 | D | 3.53 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 3.88 | D | 3.87 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 4.05 | D | 4.14 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 3.64 | D | 3.64 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 3.87 | D | 3.92 | D |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 3.84 | D | 3.87 | D |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 3.42 | C | 3.49 | C |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 4.10 | D | 4.16 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 3.48 | C | 3.52 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 3.33 | C | 3.41 | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 3.40 | C | 3.39 | C |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 3.24 | C | 3.59 | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 3.90 | D | 3.87 | D |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 3.71 | D | 3.71 | D |
| | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 3.39 | C | 3.46 | C |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 3.56 | D | 3.58 | D |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 3.80 | D | 3.88 | D |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | 3.33 | C | 3.52 | D |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 3.54 | D | 3.60 | D |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | 3.75 | D | 3.77 | D |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | 3.61 | D | 3.50 | C |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 3.40 | C | 3.40 | C |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 3.30 | C | 3.45 | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 3.44 | C | 3.50 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 3.94 | D | 3.68 | D |
| 19 | Froom Ranch Way | Dick's Sporting Goods Drwy | Los Osos Valley | WB | D | 3.29 | C | 3.47 | C |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods I | EB | D | 2.87 | C | 3.48 | C |
| 20 | **Dalidio Dr** | **Madonna Rd** | **Froom Ranch Rd** | **SB** | **D** | **4.30** | **E** | **4.37** | **E** |
| | Dalidio Dr | Froom Ranch Rd | Madonna Rd | NB | D | 3.77 | D | 4.21 | D |

Notes:

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is incorporated into the methodology for evaluateing bicycle segment performance.

**TABLE 23:**
**EXISTING CONDITIONS SEGMENT LEVEL OF SERVICE: TRANSIT ANALYSIS**

| TRANSIT SEGMENT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Route Name | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **D** | Ruote 4 | 4.16 | D | **4.27** | **E** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **D** | Route 5 | **4.28** | **E** | 4.10 | D |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **D** | Route 4 | **4.47** | **E** | **4.58** | **E** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **D** | Route 5 | **4.70** | **E** | **4.51** | **E** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **D** | Route 4 | 4.24 | D | **4.42** | **E** |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | Route 5 | Not Analyzed | N/A | Not Analyzed | N/A |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | Route 4 | **4.31** | **E** | **4.53** | **E** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **D** | Route 5 | **4.64** | **E** | **4.40** | **E** |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | Route 4 | 3.89 | D | 3.99 | D |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **D** | Route 5 | **4.29** | **E** | 3.89 | D |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | Route 4 | **4.27** | **E** | **4.37** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | Route 5 | **4.50** | **E** | 4.18 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | Route 2 | Not Analyzed | N/A | 3.49 | C |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | Route 2 | 3.65 | D | 3.67 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | Route 2 | Not Analyzed | N/A | 4.19 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | Route 2 | 4.15 | D | 4.24 | D |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **D** | Route 2 | **4.35** | **E** | **4.28** | **E** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | Route 2 | 3.76 | D | 3.82 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | Route 2 | 3.75 | D | 3.83 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | Route 2 | 3.51 | D | 3.58 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | Route 2 | 3.97 | D | 3.96 | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | Route 4 | **4.49** | **E** | **4.53** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | Route 4 | 4.23 | D | **4.38** | **E** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | Route 5 | **4.59** | **E** | 4.38 | E |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | Route 5 | **4.37** | **E** | 4.21 | D |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **D** | Route 4 | 4.21 | D | **4.33** | **E** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **D** | Route 4 | 4.21 | D | **4.44** | **E** |
| 14 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | Route 5 | **4.37** | **E** | 4.15 | D |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | Route 5 | **4.35** | **E** | **4.28** | **E** |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | Route 2 | 3.83 | D | Not Analyzed | N/A |
| 19 | Froom Ranch Way | Dick's Sporting Goods Drwy | Los Osos Valley | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Drwy | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Rd | SB | D | Route 4 | 4.01 | D | 4.10 | D |
| | **Dalidio Dr** | **Madonna Rd** | **Froom Ranch Rd** | **SB** | **D** | Route 5 | **4.26** | **E** | 4.09 | D |

Note: Route 2 Serves the Prado Day Center stop during the AM peak hour, and the DMV/Margarita stop during the PM Peak Hour

Segment 20 transit is southbound for routes 4 and 5

**TABLE 24:**
**EXISTING CONDITIONS SEGMENT LEVEL OF SERVICE: FREEWAY ANALYSIS**

| Interchange Location | Target LOS | Segment Type | No. of Lanes | AM Peak Hour Volume | AM Peak Hour Density (pc/mi/ln) | AM Peak Hour LOS | PM Peak Hour Volume | PM Peak Hour Density (pc/mi/ln) | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|---|
| ***US 101 at Los Osos Valley Road*** | | | | | | | | | |
| US 101 NB South of Los Osos Valley Road | C | Freeway | 2 | 2,774 | 24.5 | C | 2,249 | 19.7 | C |
| US 101 SB South of Los Osos Valley Road | C | Freeway | 2 | 1,406 | 12.3 | B | **3,044** | **27.4** | **D** |
| ***US 101 at Prado Road*** | | | | | | | | | |
| US 101 NB South of Prado Road | C | Freeway | 2 | 2,443 | 21.4 | C | 2,137 | 18.8 | C |
| ***US 101 at Madonna Road*** | | | | | | | | | |
| US 101 NB South of Madonna Road | C | Freeway | 2 | 2,468 | 21.7 | C | 2,497 | 21.9 | C |
| US 101 SB South of Madonna Road | C | Freeway | 2 | 1,663 | 14.6 | B | 2,881 | 25.6 | C |

As shown in the Existing Conditions segment analysis tables, most of the segments are currently operating at deficient LOS for pedestrian and transit modes, as well as several segments for automobile mode and only a couple segments for the bicycle mode. It is important to note that segment pedestrian and transit LOS, which are strongly interrelated, are heavily influenced by vehicular volumes, such that in some cases, LOS may not be reasonably improved by improved pedestrian facilities. Rather, a reduction in traffic volumes is often the only way to theoretically achieve exceptional LOS scores for these modes. The segment of US 101 south of Los Osos Valley Road is operating at deficient LOS D during the PM peak hour for Existing conditions.

# Proposed Project Description

The proposed project is a mixed-use development located in between Madonna Road and Highway 101 on a 131-acre infill site, known as the San Luis Ranch Specific Plan and previously known also as Dalidio Ranch. The site is currently in the City's Sphere of Influence but would be annexed with Specific Plan adoption. The project would incorporate a mix of residential and commercial uses, as described in the 580-Unit Alternative of the San Luis Ranch Specific Plan. The proposed Specific Plan would maintain and promote San Luis Obispo's agricultural heritage, provide open space and recreation areas, provide diverse housing, and create a multimodal community that is integrated into the existing circulation system.

The project would contain the following:

- Single Family Residential (large-lot): 200 Dwelling Units
- Single Family Residential (small-lot, medium density): 100 Dwelling Units
- Multi-Family Residential (high-density, including Affordable Units): 280 Dwelling Units
- Commercial: 150,000 Sq Ft
- Hotel: 200 Rooms
- Office: 100,000 Sq Ft
- Parks & Recreational: 5.8 Acres (3.39 acres parks and 2.41 acres recreation for the Bob Jones Trail)
- Agricultural Heritage and Learning Center: 2.70 acres

## Project Access

The proposed project would have various access points and roadway improvements upon project build-out. Froom Ranch Way would be extended as a two-lane collector with a Class I bike path to Dalidio Drive with a bridge over Perfumo Creek connecting to the current alignment. The proposed project would have full access to Froom Ranch Way at two locations. Dalidio Drive improvements include widening to four-lane arterial standards with Class II bike lanes with project build-out. The proposed project access on Dalidio Drive would be full-access and located across from the existing shopping center driveway approximately 900 feet south of Madonna Road. Madonna Road improvements with the build-out of the project include a right-in right-out project access point with acceleration and deceleration lanes to match the segments east and west of the Specific Plan. Project access for the proposed office uses to the east of Dalidio Drive is projected to be via the intersection of Froom Ranch Way and Dalidio Drive.

The project site plan is presented in Figure 5.

## Access Management

The proposed project driveways and street connections to the existing network are evaluated using the recommendations and guidelines established in the Transportation Research Board Access Management Manual, 2nd Ed., 2014. In particular, intersection spacing, residential neighborhood traffic calming aspects and internal site circulation are evaluated. The evaluation is included in the Appendix of this report as a Memorandum. The following recommendations are included in the memorandum:

- Intersection #26: Dalidio Drive/Post Office Access/Promenade
    - Remove existing ingress only driveway to Post Office

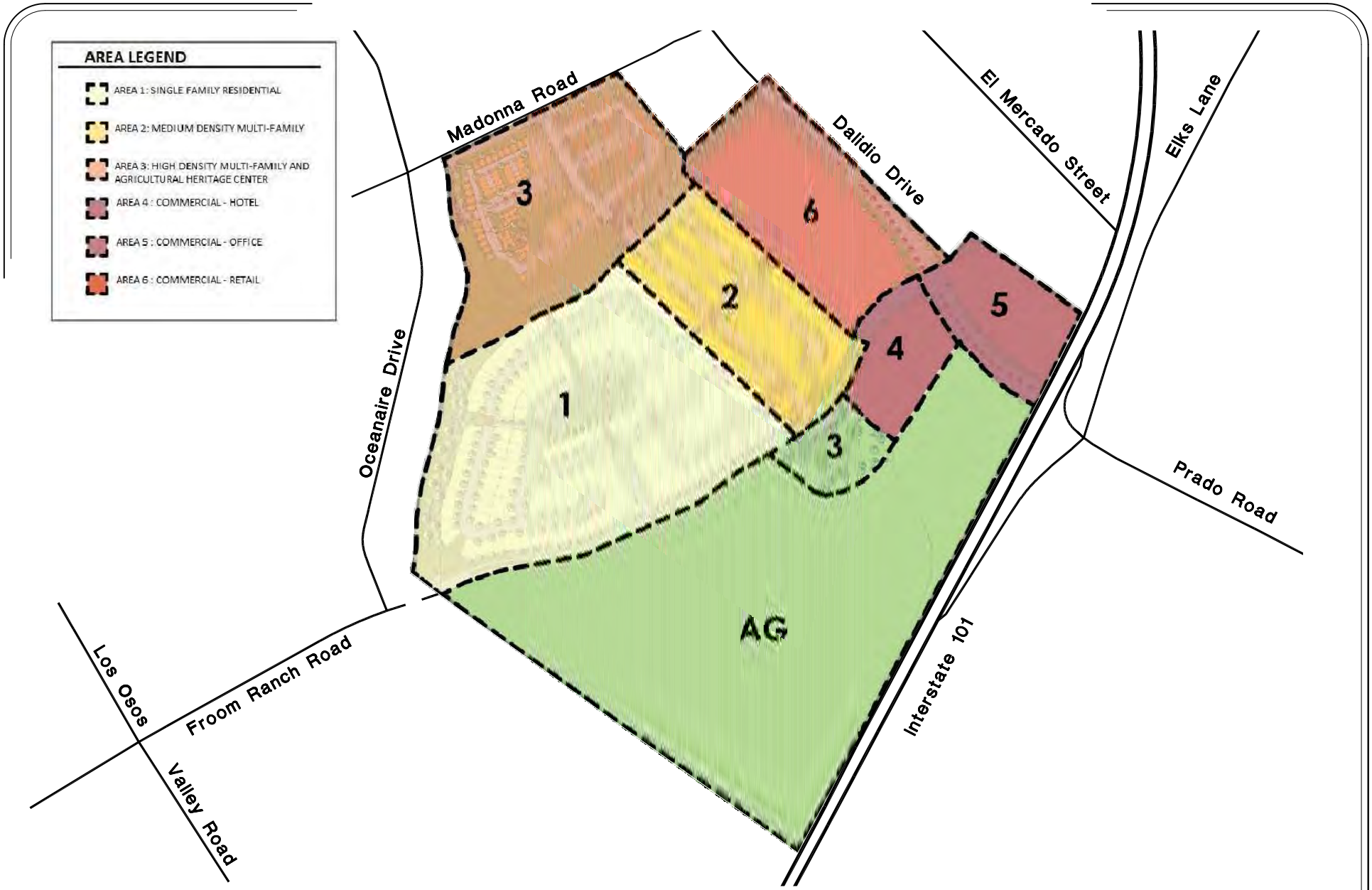
    - Consolidate the Post Office access to one limited access driveway
    - The modified post office driveway is proposed to be limited to right turn ingress and egress and left turn ingress only
    - The shopping center driveway would be limited to right turn ingress and egress only

- Include a raised crosswalk where the proposed bike/pedestrian crossing south of curve number 9 (Bike Path connection between Multi-Family and Single-Family areas)
- Install three neighborhood traffic circles (as shown on Figure 4 of Memorandum) to reduce speeds in curve numbers 1 and 8 and in the long tangent section between Froom Ranch Way and curve number 9.

## Neighborhood Traffic Management

San Luis Ranch Road would provide a bypass to the Madonna and Dalidio/Prado Rd. intersection thru the residential neighborhood resulting in a high propensity for cut through traffic and volumes that exceed general plan thresholds. The addition of diverters or changes in street connections would reduce this to a less than significant impact.

Design of San Luis Ranch Road, XXXXX Road, XXXXX Road, & XXXXX Road would result in a high propensity of neighborhood traffic speeds exceeding general plan thresholds. The additional of neighborhood traffic circles at key intersections and other traffic calming features along longer uninterrupted segments would reduce this to a less than significant impact.




San Luis Ranch Specific Plan Multimodal TIS

Figure 5

# Project Site Plan

# Multimodal Trip Generation

Since this study analyzes and quantifies impacts for all travel modes rather than just automobile impacts, a more defined "person trip" generation was developed in lieu of the more common "vehicle trip" generation. The following section describes how the "person trips" estimates were developed for the proposed land uses, with respect to the following categories:

- Vehicular Trips
- Person Trips
- Internal Capture
- Modal Split
- Vehicle Occupancy
- Pass By Trips

## Vehicular Trips

Vehicular trips were estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual (9th Edition)*. The "Shopping Center" Land Use was used to determine the trip generation for the commercial element during the AM and PM peak hour. The *ITE Trip Generation Manual* does not contain adequate information for the Parks/Recreational land use. Omni-Means used San Diego's Regional Planning Agency's (SANDAG) '*Brief Guide to Vehicular Traffic Generation Rates for the San Diego Region*', 2002 to determine the trip generation for the Parks/Recreational land use using the City Park land use generation rate as the best available rate which is expected to have similar trip generation characteristics. Table 25 presents the ITE trip generation rates and estimates for the proposed land uses.

**TABLE 25:**
**VEHICULAR TRIP GENERATION RATES AND ESTIMATES**

| Land Use Category (ITE Code) | Unit[1] | Daily Trip Rate/Unit[2] | AM Peak Hour Trip Rate/Unit | | | PM Peak Hour Trip Rate/Unit | | |
|---|---|---|---|---|---|---|---|---|
| | | | Total | In % | Out % | Total | In % | Out % |
| Single Family Detached (210) | DU | 9.62 | 0.73 | 25% | 75% | 0.93 | 63% | 37% |
| Apartment (220) | DU | 6.50 | 0.50 | 20% | 80% | 0.61 | 65% | 35% |
| Shopping Center (820) | KSF | 58.93 | 1.33 | 62% | 38% | 5.24 | 48% | 52% |
| Hotel (310) | Rooms | 8.17 | 0.53 | 59% | 41% | 0.60 | 51% | 49% |
| General Office Building (710) | KSF | 13.13 | 1.91 | 88% | 12% | 1.90 | 17% | 83% |
| City Park[3] | AC | 50.00 | 6.50 | 50% | 50% | 4.50 | 50% | 50% |
| City Park[3] | AC | 50.00 | 6.50 | 50% | 50% | 4.50 | 50% | 50% |
| **Project Name** | **Quantity (Units)** | **Daily Trips** | **AM Peak Hour Trips** | | | **PM Peak Hour Trips** | | |
| | | | Total | In | Out | Total | In | Out |
| Single Family Residential (Small 30' lots)[4] | 100 | 962 | 73 | 18 | 55 | 93 | 59 | 34 |
| Single Family Residential (Traditional 40' lots)[4] | 200 | 1,924 | 147 | 37 | 110 | 185 | 117 | 68 |
| Multi-Family Residential | 280 | 1,820 | 141 | 28 | 113 | 172 | 112 | 60 |
| Commercial | 150 | 8,839 | 200 | 124 | 76 | 786 | 377 | 409 |
| Hotel | 200 | 1,634 | 106 | 63 | 43 | 120 | 61 | 59 |
| Office | 100 | 1,313 | 191 | 168 | 23 | 190 | 32 | 158 |
| Parks/Recreational | 5.80 | 290 | 38 | 19 | 19 | 26 | 13 | 13 |
| Agriculture Heritage and Learning Center | 2.70 | 135 | 18 | 9 | 9 | 12 | 6 | 6 |
| **Net Project Trips** | | **16,917** | **914** | **466** | **448** | **1,584** | **777** | **807** |

*Notes:*

*1. 1 ksf = 1,000 square feet  DU = dwelling unit*

*2. Trip rates based on ITE Trip Generation Manual 9th edition fitted-curve equations or average rates*

*3.Trip rates baed on SANDAG's 'Brief Guide to Vehicular Traffic Generation Rates for the San Diego Region', 2002*

*4. Single Family Residential Units Trip Generation Based on Rate for Total 350 Untis*

*5. Errors due to rouding may occur.*

As presented in Table 25, the proposed project would be projected to generate 914 AM peak hour vehicular trips, and 1,559 PM peak hour vehicular trips, before any vehicular occupancy, modal, internal capture, or pass-by adjustments. Once person trips were estimated, internal capture rates were developed between the proposed uses.

## Person Trips

Person trips were also estimated using the ITE *Trip Generation Manual,*by utilizing average vehicle occupancy rates of each Land Use (Tables C.1-C.2). Because ITE *Trip General Manual* vehicle trip generation rates (Table 25) are based on driveway counts, an additional factor called the "Mode Share Percent" is also utilized to account for trips that were made by other modes. After applying vehicle occupancy rates to the vehicle trip rates, and then accounting for demand from non-auto modes in the ITE data, an ITE-based person trip demand can be estimated, as shown in Table 26.

The ITE *Trip Generation Handbook (3rd Edition)* provides the Land Use Mix for determining whether the internal capture methodology is appropriate, stating that the mixed-use development should consist of a combination of at least two of the following categories: retail, restaurant, office, residential, hotel, and cinema/entertainment. The proposed project contains retail, residential, office and hotel land uses, which are generated separately for each category, and therefore accounts for the internal trips between each land use.

## Internal Capture

Internal person trip capture rates for the proposed development were determined using the NCHRP Report 864 and NCHRP 8-51 Internal Capture Estimation Tool, which is consistent with the internal capture percentages from the ITE *Trip Generation Handbook (3rd Edition)*. The NCHRP Internal Capture Estimation Tool also includes a proximity adjustment factor to the internal capture percentages for the PM peak hour. For the purposes of this study, the internal capture reduction for residential uses included only the multi-family units and the single family small-lot (30' lot) units due to their proximity to other proposed uses. The single-family large-lot (40' lot) units were not assumed to generate internal trips. Table 26 presents the person trip generation and the internal capture reduction between each use.

As presented in Table 26, after applying internal capture assumption to the estimated person trips, the proposed project is anticipated to generate 1,009 AM peak hour person trips and 1,538 PM peak hour person trips. The internal capture reduction is approximately 8% in the AM peak hour and 20% in the PM peak hour.

## TABLE 26:
## PERSON TRIP GENERATION RATES AND ESTIMATES

*Assumptions to Convert Baseline Vehicular Trips to Person Trips:*

| Land Use | Unit[1] | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|
| | | Baseline Vehicle Occupancy[2] | Baseline Mode Share Percent[2] | | Baseline Vehicle Occupancy[2] | Baseline Mode Share Percent[2] | |
| | | | Inbound | Outbound | | Inbound | Outbound |
| Single Family Detached (210) | DU | 1.11 | 95.0% | 95.0% | 1.18 | 95.0% | 95.0% |
| Single Family Detached (210) | DU | 1.11 | 95.0% | 95.0% | 1.18 | 95.0% | 95.0% |
| Apartment (220) | DU | 1.11 | 89.2% | 96.8% | 1.18 | 96.3% | 94.7% |
| Shopping Center (820) | KSF | 1.17 | 100.0% | 100.0% | 1.20 | 100% | 99.8% |
| Hotel (310) | Rooms | 1.26 | 92.3% | 96.7% | 1.31 | 95.7% | 95.0% |
| General Office Building (710) | KSF | 1.06 | 97.0% | 90.0% | 1.09 | 96.0% | 98.0% |
| City Park[4] | AC | 1.17 | 95.0% | 95.0% | 1.20 | 95.0% | 95.0% |
| City Park[4] | AC | 1.17 | 95.0% | 95.0% | 1.20 | 95.0% | 95.0% |

| Land Use | Quantity (Units) | AM Peak Hour Person Trips | | | PM Peak Hour Person Trips | | |
|---|---|---|---|---|---|---|---|
| | | Total | In | Out | Total | In | Out |
| Single Family Residential (Small 30' lots) | 100 | 85 | 21 | 64 | 116 | 73 | 43 |
| Single Family Residential (Traditional 40' lots) | 200 | 172 | 43 | 129 | 229 | 145 | 84 |
| Multi-Family Residential | 280 | 165 | 35 | 130 | 212 | 137 | 75 |
| *Internal Capture Reduction with Retail[5]* | | -3 | *-1* | *-2* | -126 | *-97* | *-29* |
| *Internal Capture Reduction with Hotel[5]* | | 0 | *0* | *0* | -4 | *0* | *-4* |
| *Internal Capture Reduction with Office[5]* | | -4 | *0* | *-4* | -7 | *-2* | *-5* |
| **TOTAL RESIDENTIAL EXTERNAL TRIPS** | | **415** | **98** | **317** | **420** | **256** | **164** |
| Commercial | 150 | 234 | 145 | 89 | 944 | 452 | 492 |
| *Internal Capture Reduction with Residential[5]* | | -3 | *-2* | *-1* | -126 | *-29* | *-97* |
| *Internal Capture Reduction with Hotel[5]* | | -6 | *-6* | *0* | -23 | *-9* | *-14* |
| *Internal Capture Reduction with Office[5]* | | -15 | *-8* | *-7* | -31 | *-21* | *-10* |
| **TOTAL COMMERCIAL EXTERNAL TRIPS** | | **210** | **129** | **81** | **764** | **393** | **371** |
| Hotel | 200 | 142 | 86 | 56 | 165 | 84 | 81 |
| *Internal Capture Reduction with Residential[5]* | | 0 | *0* | *0* | -4 | *-4* | *0* |
| *Internal Capture Reduction with Retail[5]* | | -6 | *0* | *-6* | -23 | *-14* | *-9* |
| *Internal Capture Reduction with Office[5]* | | -6 | *0* | *-6* | 0 | *0* | *0* |
| **TOTAL HOTEL EXTERNAL TRIPS** | | **130** | **86** | **44** | **138** | **66** | **72** |
| Office | 100 | 211 | 184 | 27 | 212 | 36 | 176 |
| *Internal Capture Reduction with Residential[5]* | | -4 | *-4* | *0* | -7 | *-5* | *-2* |
| *Internal Capture Reduction with Retail[5]* | | -15 | *-7* | *-8* | -31 | *-10* | *-21* |
| *Internal Capture Reduction with Hotel[5]* | | -6 | *-6* | *0* | 0 | *0* | *0* |
| **TOTAL OFFICE EXTERNAL TRIPS** | | **186** | **167** | **19** | **174** | **21** | **153** |
| Parks/Recreational | 5.80 | 46 | 23 | 23 | 32 | 16 | 16 |
| Agriculture Heritage and Learning Center | 2.70 | 22 | 11 | 11 | 16 | 8 | 8 |
| **TOTAL PARKS/REC/AG EXTERNAL TRIPS** | | **68** | **34** | **34** | **48** | **24** | **24** |
| **Total Person Trips** | | **1,077** | **548** | **529** | **1,926** | **951** | **975** |
| ***Total Internal Capture Reduction*** | | ***-68*** | ***-34*** | ***-34*** | ***-382*** | ***-191*** | ***-191*** |
| **TOTAL EXTERNAL PERSON TRIPS** | | **1,009** | **514** | **495** | **1,544** | **760** | **784** |

*1. 1 ksf = 1,000 square feet DU = dwelling unit*

*2. ITE Trip Generation Handbook (3rd Ed.) Tables C.1 and C.2*

*3. Vehicle Occupancy is determined to be the same as Apartment, mode share is 95% vehicular as baseline default, due to unavailable data within the ITE Trip Generation Handbook*

*4. Vehicle Occupancy is determined to be the same as Shopping Center, mode share is 95% vehicular as baseline default, due to unavailable data within the ITE Trip Generation Handbook*

*5. Internal Capture Trips Determined using NCHRP Report 864 and NCHRP 8-51 Internal Capture Estimation Tool, which includes a proximity adjustment for the PM peak hour; Residential Reduction based only on Small Lots and Multi-Family Units due to proximity to other uses*

*6. Rounding errors may occur.*

# Modal Split

The transportation network adjacent to the project site consists of auto, transit, bicycles, and pedestrian modes. It is anticipated that new external person trips to the proposed project would use a variety of transportation modes to get to and from the site. To estimate the travel mode splits for the external person trips, data from the City of San Luis Obispo Travel Demand Model (TDM) and the US Census were used. The City's TDM contains transit data for each route, including transit route volumes, which were used to determine the percent of person-trips using walk-accessible transit. The vehicular, pedestrian, and bicycle volumes were collected from the City's most recent roadway counts. The parks and recreational uses were determined to be split between bicycles and pedestrians. The mode split among the project-generated person trips is projected to be consistent for Existing and Near Term conditions. The mode split for the Cumulative Year 2035 conditions is based on forecasted modal shifts within the City's TDM at buildout of the City General Plan. Table 27A shows the mode split percentage summary for the external person trips for the Existing and Near Term assignments.

**TABLE 27A: PERSON TRIPS MODE SPLIT FOR EXISTING AND NEAR TERM ASSIGNMENTS**

| Land Use | | AM Peak Hour Person Trips | | | PM Peak Hour Person Trips | | |
|---|---|---|---|---|---|---|---|
| | | Total | In | Out | Total | In | Out |
| **TOTAL RESIDENTIAL EXTERNAL TRIPS** | | **415** | **98** | **317** | **420** | **256** | **164** |
| **TOTAL COMMERCIAL EXTERNAL TRIPS** | | **210** | **129** | **81** | **764** | **393** | **371** |
| **TOTAL HOTEL EXTERNAL TRIPS** | | **130** | **86** | **44** | **138** | **66** | **72** |
| **TOTAL OFFICE EXTERNAL TRIPS** | | **186** | **167** | **19** | **174** | **21** | **153** |
| **TOTAL PARKS/REC EXTERNAL TRIPS** | | **46** | **23** | **23** | **32** | **16** | **16** |
| **TOTAL AGRICULTURAL EXTERNAL TRIPS** | | **22** | **11** | **11** | **16** | **8** | **8** |
| **TOTAL EXTERNAL PERSON TRIPS** | | **1,009** | **514** | **495** | **1,544** | **760** | **784** |
| **Total External Person Trips for Residential,** | | **963** | **491** | **472** | **1,512** | **744** | **768** |
| ***MODE SPLIT - PERSON TRIPS (for Non-Parks/Recreational Uses)*** | | | | | | | |
| **Mode** | **Modal Split %[1]** | **AM Peak Hour Person Trips** | | | **PM Peak Hour Person Trips** | | |
| | | **Total** | **In** | **Out** | **Total** | **In** | **Out** |
| Vehicle | 97.0% | 934 | 476 | 458 | 1,467 | 722 | 745 |
| Bicycle | 1.1% | 10 | 5 | 5 | 16 | 8 | 8 |
| Pedestrian | 0.5% | 4 | 2 | 2 | 8 | 4 | 4 |
| Transit | 1.4% | 14 | 7 | 7 | 21 | 10 | 11 |
| ***Total:*** | *100%* | ***962*** | ***490*** | ***472*** | ***1,512*** | ***744*** | ***768*** |
| **Total External Person Trips for** | | **46** | **23** | **23** | **32** | **16** | **16** |
| ***MODE SPLIT - PERSON TRIPS (for Parks/Recreational Uses)*** | | | | | | | |
| **Mode** | **Modal Split %** | **AM Peak Hour Person Trips** | | | **PM Peak Hour Person Trips** | | |
| | | **Total** | **In** | **Out** | **Total** | **In** | **Out** |
| Vehicle | 0% | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycle | 50% | 24 | 12 | 12 | 16 | 8 | 8 |
| Pedestrian | 50% | 24 | 12 | 12 | 16 | 8 | 8 |
| Transit | 0% | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total:** | 100% | **48** | **24** | **24** | **32** | **16** | **16** |

1. Mode Split Determined using existing counts for Non-Parks/Recreational Uses, and assumed for Parks/Recreational Uses due to connectivity to existing mulitmodal transporation system
2. Person Trip estimates for each mode are rounded to the nearest integer.

The net new person trips (auto, pedestrian, bicycle, and transit) are trips that are added to the transportation network. In the AM peak hour, it is projected that 14 transit trips, 28 pedestrian and 34 bicycle trips would be added to the network. In the PM peak hour, it is projected that 20

transit, 24 pedestrian, and 32 bicycle trips would be added to the network with the proposed project. It is also projected that 934 vehicle "person trips" in the AM peak hour and 1,461 vehicle "person trips" in the PM peak hour are added to and from the external roadway network.

Table 27B shows the mode split percentage summary for the external person trips for the 2035 Cumulative conditions.

**TABLE 27B: PERSON TRIPS MODE SPLIT FOR CUMULATIVE ASSIGNMENTS**

| Land Use | | AM Peak Hour Person Trips | | | PM Peak Hour Person Trips | | |
|---|---|---|---|---|---|---|---|
| | | Total | In | Out | Total | In | Out |
| **TOTAL RESIDENTIAL EXTERNAL TRIPS** | | **415** | **98** | **317** | **420** | **256** | **164** |
| **TOTAL COMMERCIAL EXTERNAL TRIPS** | | **210** | **129** | **81** | **764** | **393** | **371** |
| **TOTAL HOTEL EXTERNAL TRIPS** | | **130** | **86** | **44** | **138** | **66** | **72** |
| **TOTAL OFFICE EXTERNAL TRIPS** | | **186** | **167** | **19** | **174** | **21** | **153** |
| **TOTAL PARKS/REC EXTERNAL TRIPS** | | **46** | **23** | **23** | **32** | **16** | **16** |
| **TOTAL AGRICULTURAL EXTERNAL TRIPS** | | **22** | **11** | **11** | **16** | **8** | **8** |
| **TOTAL EXTERNAL PERSON TRIPS** | | **1,009** | **514** | **495** | **1,544** | **760** | **784** |
| **Total External Person Trips for Residential,** | | **963** | **491** | **472** | **1,512** | **744** | **768** |
| ***MODE SPLIT - PERSON TRIPS (for Non-Parks/Recreational Uses)*** | | | | | | | |
| **Mode** | **Modal Split %[1]** | **AM Peak Hour Person Trips** | | | **PM Peak Hour Person Trips** | | |
| | | **Total** | **In** | **Out** | **Total** | **In** | **Out** |
| Vehicle | 94.9% | 914 | 466 | 448 | 1,435 | 706 | 729 |
| Bicycle | 1.1% | 10 | 5 | 5 | 16 | 8 | 8 |
| Pedestrian | 2.7% | 26 | 13 | 13 | 40 | 20 | 20 |
| Transit | 1.3% | 12 | 6 | 6 | 20 | 10 | 10 |
| ***Total:*** | *100%* | ***962*** | ***490*** | ***472*** | ***1,511*** | ***744*** | ***767*** |
| **Total External Person Trips for** | | **46** | **23** | **23** | **32** | **16** | **16** |
| ***MODE SPLIT - PERSON TRIPS (for Parks/Recreational Uses)*** | | | | | | | |
| **Mode** | **Modal Split %** | **AM Peak Hour Person Trips** | | | **PM Peak Hour Person Trips** | | |
| | | **Total** | **In** | **Out** | **Total** | **In** | **Out** |
| Vehicle | 0% | 0 | 0 | 0 | 0 | 0 | 0 |
| Bicycle | 50% | 24 | 12 | 12 | 16 | 8 | 8 |
| Pedestrian | 50% | 24 | 12 | 12 | 16 | 8 | 8 |
| Transit | 0% | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total:** | 100% | **48** | **24** | **24** | **32** | **16** | **16** |

1. Mode Split Determined using existing counts for Non-Parks/Recreational Uses, and assumed for Parks/Recreational Uses due to connectivity to existing mulitmodal transporation system
2. Person Trip estimates for each mode are rounded to the nearest integer.

The net person trips (auto, pedestrian, bicycle, and transit) are trips that are added to the transportation network. In the AM peak hour, it is projected that 14 transit trips, 48 pedestrian and 34 bicycle trips are added to the network. In the PM peak hour, it is projected that 21 transit, 24 pedestrian, and 32 bicycle trips are added to the network with the proposed project. It is also projected that 934 vehicle "person trips" in the AM peak hour and 1,461 vehicle "person trips" in the PM peak hour are added to and from the external roadway network.

# Vehicle Occupancy

Vehicular occupancy was determined using the data from the City's TDM Documentation. Table 28 shows the home-, work-, and other-based-other data from the *Number of Trip Observations by Mode and Purpose from 2000-2001 Statewide Travel Survey for City of San Luis Obispo* (Table 5.1 SLO City Travel Model Documentation).

**TABLE 28: VEHICLE OCCUPANCY DETERMINATION**

| Mode | Total of all purpose | Home-Based Work | Home-Based Shop | Home-Based Universi | Home-Based Other | Work-Based Other | Other-Based Other | Total | % of Total | Persons |
|---|---|---|---|---|---|---|---|---|---|---|
| Drove Alone | 2,704 | 724 | 410 | 39 | 662 | 457 | 412 | 2,704 | 49% | 2,704 |
| Shared Ride 2 | 750 | 28 | 132 | 7 | 308 | 41 | 234 | 750 | 14% | 1,500 |
| Shared Ride 3 | 182 | 4 | 25 | - | 101 | 5 | 47 | 182 | 3% | 546 |
| Shared Ride 4 | 55 | - | 4 | - | 33 | 5 | 13 | 55 | 1% | 220 |
| Shared Ride 5 | 29 | - | - | - | 13 | - | 16 | 29 | 1% | 145 |
| Shared Ride 6 | 4 | - | - | - | 3 | - | 1 | 4 | 0% | 24 |
| Shared Ride 7 | - | - | - | - | - | - | - | - | 0% | - |
| Shared Ride 8 | - | - | - | - | - | - | - | - | 0% | - |
| Shared Ride 9 | - | - | - | - | - | 2 | - | 2 | 0% | 18 |
| Total Vehicle Trips | 3,724 | 756 | 571 | 46 | 1,120 | 510 | 723 | **3,726** | 68% | **5,157** |
| Auto Passenger | 1,312 | 59 | 178 | 8 | 675 | 36 | 356 | 1,312 | 24% | |
| Bus | 17 | - | 2 | 4 | 5 | - | 6 | 17 | 0.3% | |
| Bicycle | 77 | 13 | 13 | 9 | 25 | 7 | 10 | 77 | 1% | |
| School Bus | 109 | - | - | 2 | 82 | - | 25 | 109 | 2% | |
| Walk | 236 | 23 | 10 | 2 | 104 | 33 | 64 | 236 | 4% | ***Veh. Occ*** |
| Total | 5,475 | 851 | 774 | 71 | 2,011 | 586 | 1,184 | 5,477 | | ***1.38*** |

As shown in Table 28, the vehicle occupancy rate was calculated as the sum of the product of persons per vehicle (1 - 9) and the number of total number of trips made by each mode type, divided by the total number of vehicle trips, which is 1.38; The Total Persons per Total Vehicle Trips for the City of San Luis Obispo was reported to be 1.38.

# Pass By Trips

A pass-by percentage of 10% in the AM peak and 30% in the PM peak hour are used for the shopping center and applied to the net vehicular trips. Table 29A presents the vehicular trips for the generated vehicular external person trips and the net new vehicular trips for Existing and Near Term conditions. Table 29B presents the vehicular trips for the generated vehicular external person trips and the net new vehicular trips for Cumulative Year 2035 conditions.

As shown in Table 29A for Existing and Near Term conditions, a total of 662 vehicles in the AM peak hour and 899 vehicles in the PM peak hour are projected to be added to the roadway network due to the proposed project. As shown in Table 29B for Cumulative Year 2035 conditions, a total of 648 vehicles in the AM peak hour and 879 vehicles in the PM peak hour are projected to be added to the roadway network due to the proposed project.

**TABLE 29A: EXTERNAL VEHICULAR TRIPS & PASS-BY TRIPS (EXISTING AND NEAR TERM CONDITIONS)**

| TOTAL EXTERNAL VEHICULAR PERSON TRIPS BY LAND USE | AM Peak Hour Person Trips | | | PM Peak Hour Person Trips | | |
|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out |
| **RESIDENTIAL** | **403** | **95** | **308** | **408** | **248** | **159** |
| **COMMERCIAL** | **204** | **125** | **79** | **741** | **381** | **360** |
| **HOTEL** | **126** | **83** | **43** | **134** | **64** | **70** |
| **OFFICE** | **180** | **162** | **18** | **169** | **20** | **148** |
| **PARKS/RECREATIONAL** | **0** | **0** | **0** | **0** | **0** | **0** |
| **AGRICULTURAL CENTER** | **21** | **11** | **11** | **16** | **8** | **8** |
| **TOTAL EXTERNAL VEHICULAR-PERSON TRIPS** | **934** | **476** | **458** | **1,467** | **722** | **745** |
| **VEHICULAR OCCUPANCY[1]** | | | **1.38** | | | |

**Vehicular Trips Conversion by Land Use**

| Land Use | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out |
| Residential | 292 | 69 | 223 | 295 | 180 | 115 |
| Hotel | 91 | 60 | 31 | 97 | 46 | 51 |
| Office | 130 | 117 | 13 | 123 | 15 | 108 |
| Parks/Recreational | 0 | 0 | 0 | 0 | 0 | 0 |
| Agricultural | 16 | 8 | 8 | 12 | 6 | 6 |
| Commercial | 148 | 91 | 57 | 537 | 276 | 261 |
| *Pass-by Trips for Shopping Center[2]* | *-15* | *-9* | *-6* | *-161* | *-83* | *-78* |
| Net New Commercial Vehicular Trips: | 133 | 82 | 51 | 376 | 193 | 183 |
| ***Net New Vehicular Trips:*** | **662** | **336** | **326** | **903** | **440** | **463** |

*1. Vehicle Occupancy determined using Citywide Travel Demand Model Documentation, Table 5.1*
*2. Pass-By Trips based on ITE Trip Generation Handbook, 3rd Ed. For Non-Residential Uses; determined to be 10% for AM peak 30% for PM peak, for the Shopping Center*

**TABLE 29B: EXTERNAL VEHICULAR TRIPS & PASS-BY TRIPS (CUMULATIVE CONDITIONS)**

| TOTAL EXTERNAL VEHICULAR PERSON TRIPS BY LAND USE | AM Peak Hour Person Trips | | | PM Peak Hour Person Trips | | |
|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out |
| **RESIDENTIAL** | **394** | **93** | **301** | **399** | **243** | **156** |
| **COMMERCIAL** | **199** | **122** | **77** | **725** | **373** | **352** |
| **HOTEL** | **123** | **82** | **42** | **131** | **63** | **68** |
| **OFFICE** | **177** | **158** | **18** | **165** | **20** | **145** |
| **PARKS/RECREATIONAL** | **0** | **0** | **0** | **0** | **0** | **0** |
| **AGRICULTURAL CENTER** | **21** | **10** | **10** | **15** | **8** | **8** |
| **TOTAL EXTERNAL VEHICULAR-PERSON TRIPS** | **914** | **466** | **448** | **1,435** | **706** | **729** |
| **VEHICULAR OCCUPANCY[1]** | | | **1.38** | | | |

**Vehicular Trips Conversion by Land Use**

| Land Use | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out |
| Residential | 285 | 67 | 218 | 289 | 176 | 113 |
| Hotel | 89 | 59 | 30 | 95 | 45 | 50 |
| Office | 128 | 115 | 13 | 119 | 14 | 105 |
| Parks/Recreational | 0 | 0 | 0 | 0 | 0 | 0 |
| Agricultural | 16 | 8 | 8 | 12 | 6 | 6 |
| Commercial | 145 | 89 | 56 | 525 | 270 | 255 |
| *Pass-by Trips for Shopping Center[2]* | *-15* | *-9* | *-6* | *-158* | *-81* | *-77* |
| Net New Commercial Vehicular Trips: | 130 | 80 | 50 | 367 | 189 | 178 |
| ***Net New Vehicular Trips:*** | **648** | **329** | **319** | **882** | **430** | **452** |

*1. Vehicle Occupancy determined using Citywide Travel Demand Model Documentation, Table 5.1*
*2. Pass-By Trips based on ITE Trip Generation Handbook, 3rd Ed. For Non-Residential Uses; determined to be 10% for AM peak 30% for PM peak, for the Shopping Center*

# Existing Plus Project Conditions

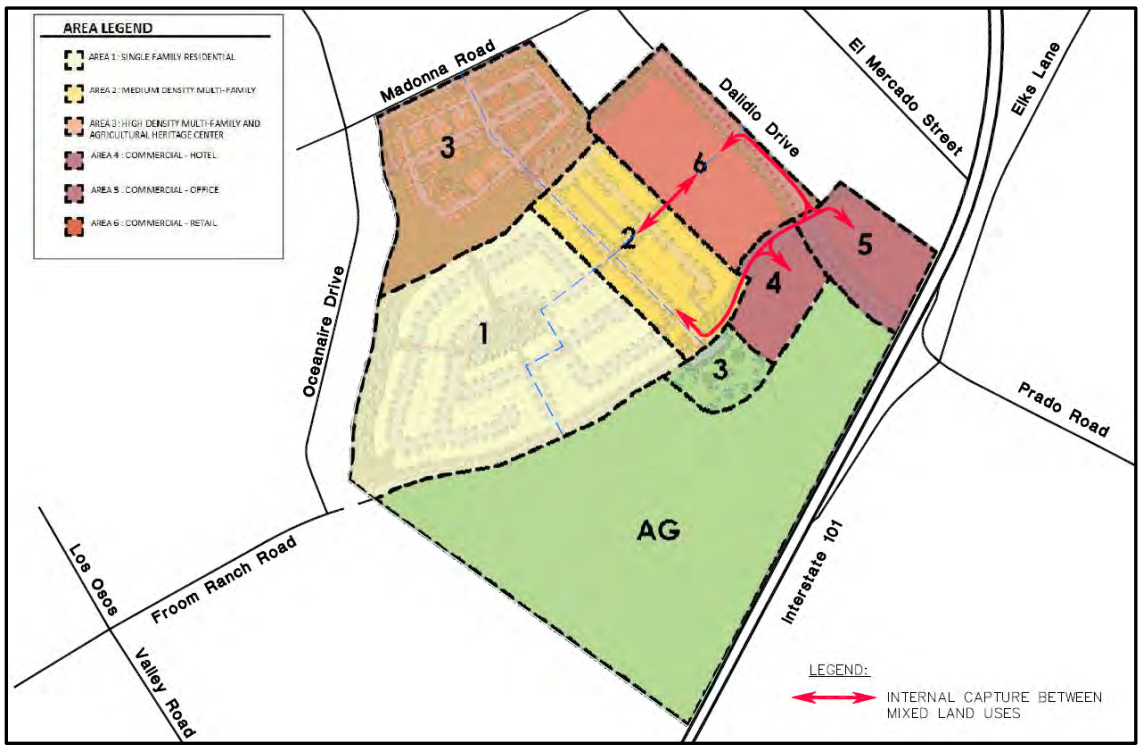
The project generated peak hour trip volumes were added to the Existing volumes to obtain the Existing Plus Project conditions. The LOS has been quantified and compared to all study intersections and roadways analyzed in Existing (Base) conditions. All proposed driveway intersections have been evaluated for LOS operations, potential vehicle queuing and pedestrian and bicycle level of service. Impacts caused by the generation of new vehicle, pedestrian, bike, and auto trips were identified. Improvements to mitigate any impacts have also been identified.

## Trip Distribution

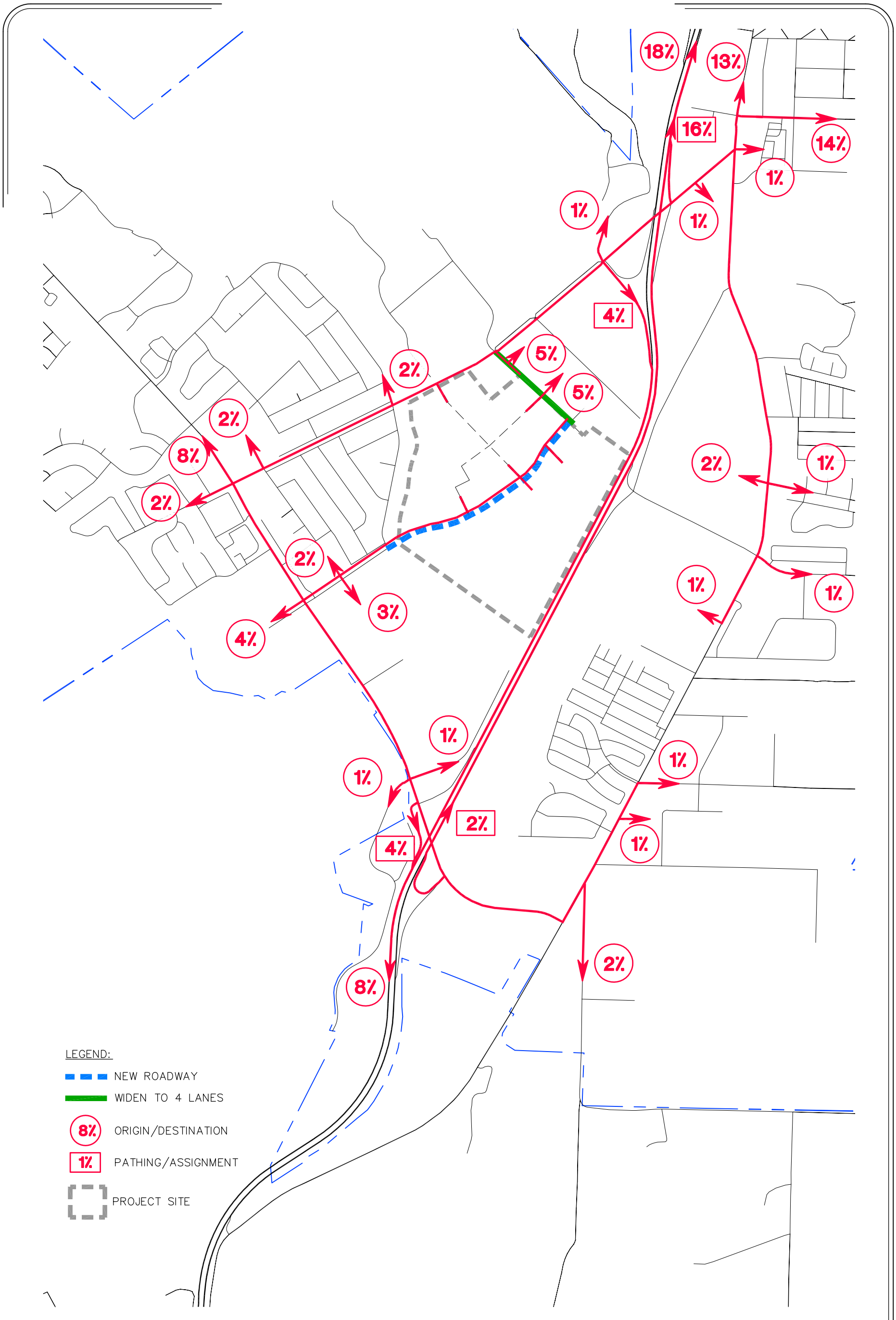
The Existing Plus Project distribution of project-generated pedestrian, bicycle, and vehicle trips has been estimated based on conducting a select zone analysis of the TAZ that represents the proposed project using the City's Travel Demand Model (TDM), and by comparing the existing traffic counts and associated travel patterns with the surrounding land uses. New transit users are assumed to all use the proposed new transit hub on Dalidio Drive. Bicyclists are assumed to use new and existing bike trails, Froom Ranch Way, Dalidio Drive, Prado Road, and Madonna Road. Pedestrians are assumed to use adjacent sidewalks, crosswalks, and shared-use paths enroute to/from the project based on a 1/2 – 3/4 mile walking radius between trip origins and destinations.

Since two of the study intersections are internal to the project site, the internally captured trips between proposed uses have been accounted for along the internal street system. The internal trip mode split is assumed to be 50% vehicular, 25% pedestrian, and 25% bicycle due to the large site plan, network layout and proximity of the uses. Inset A presents the internal capture distribution for the site's internal study intersections.

**Inset A: Internal Capture Distribution**



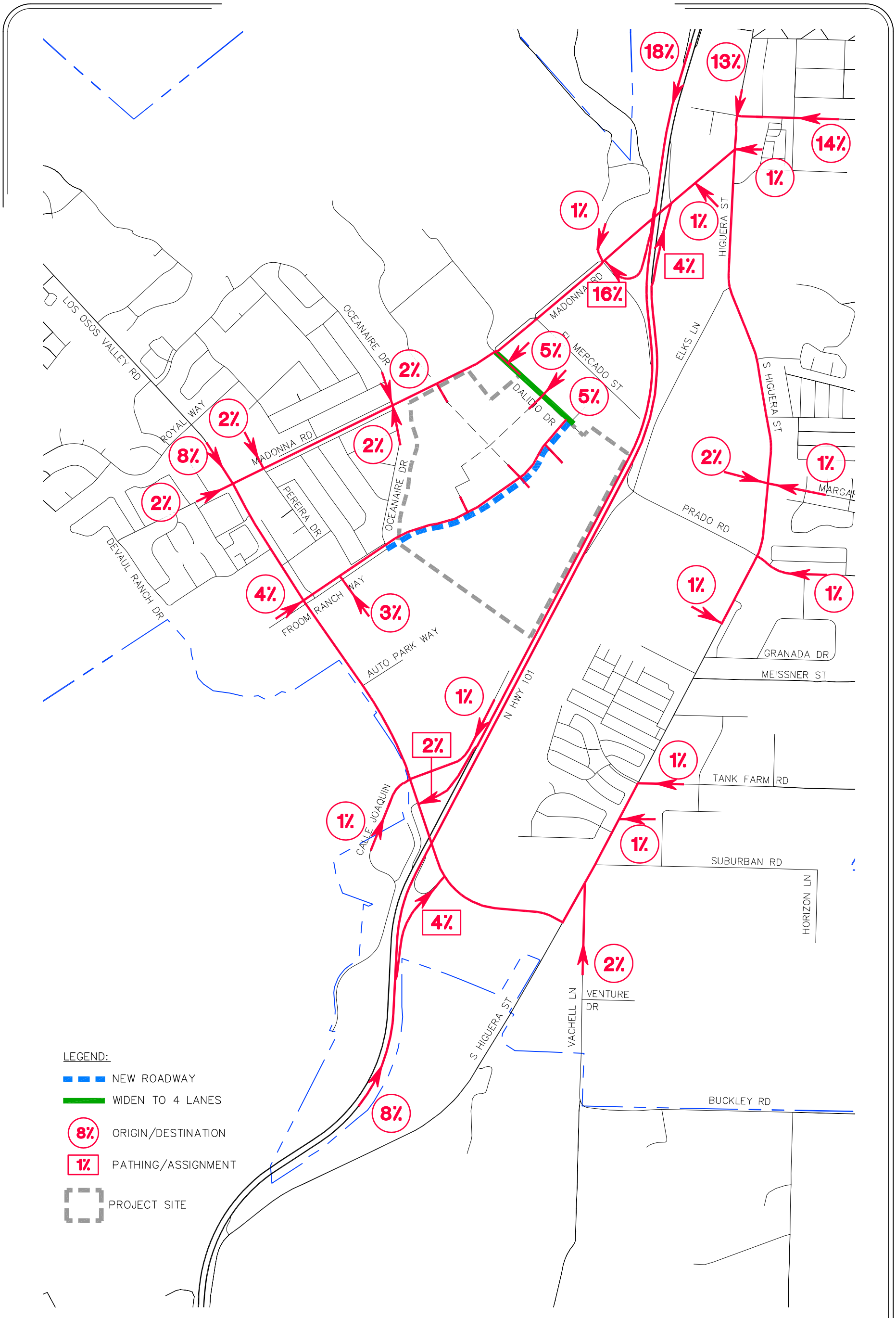
The inbound and outbound trip distribution for the existing plus project conditions network is shown in Figure 6A and Figure 6B. Figure 7 presents the Existing Plus Project lane geometrics and control. Figure 8 presents the Project Only Peak Hour Traffic Volumes, which is the project trip assignment for the Existing Plus Project and the 2025 Near Term Plus Project conditions.




**San Luis Ranch Specific Plan Multimodal TIS**

Figure 6A

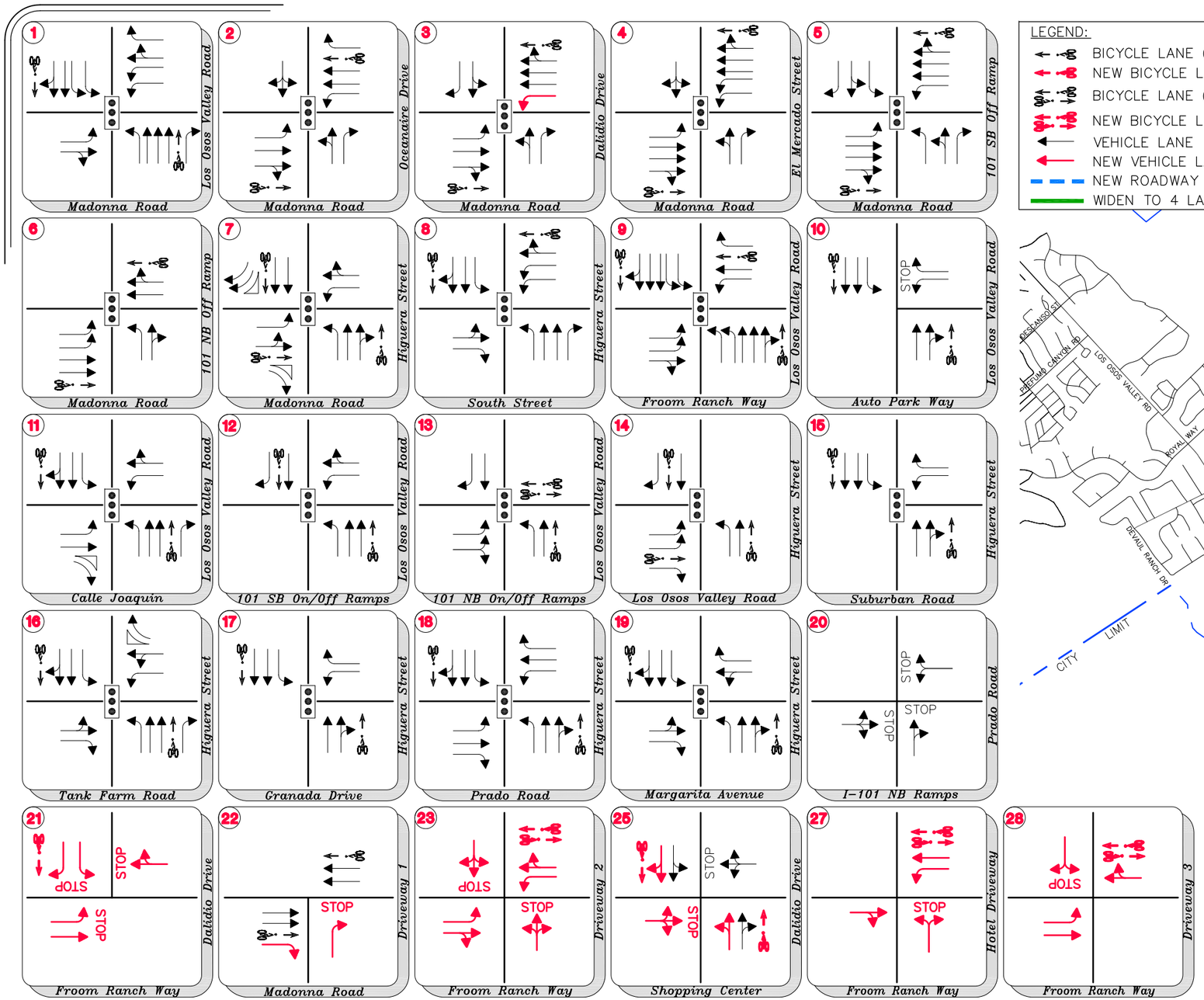
# Existing Plus Project Trip Distribution - Outbound




**San Luis Ranch Specific Plan Multimodal TIS**

Figure 6B

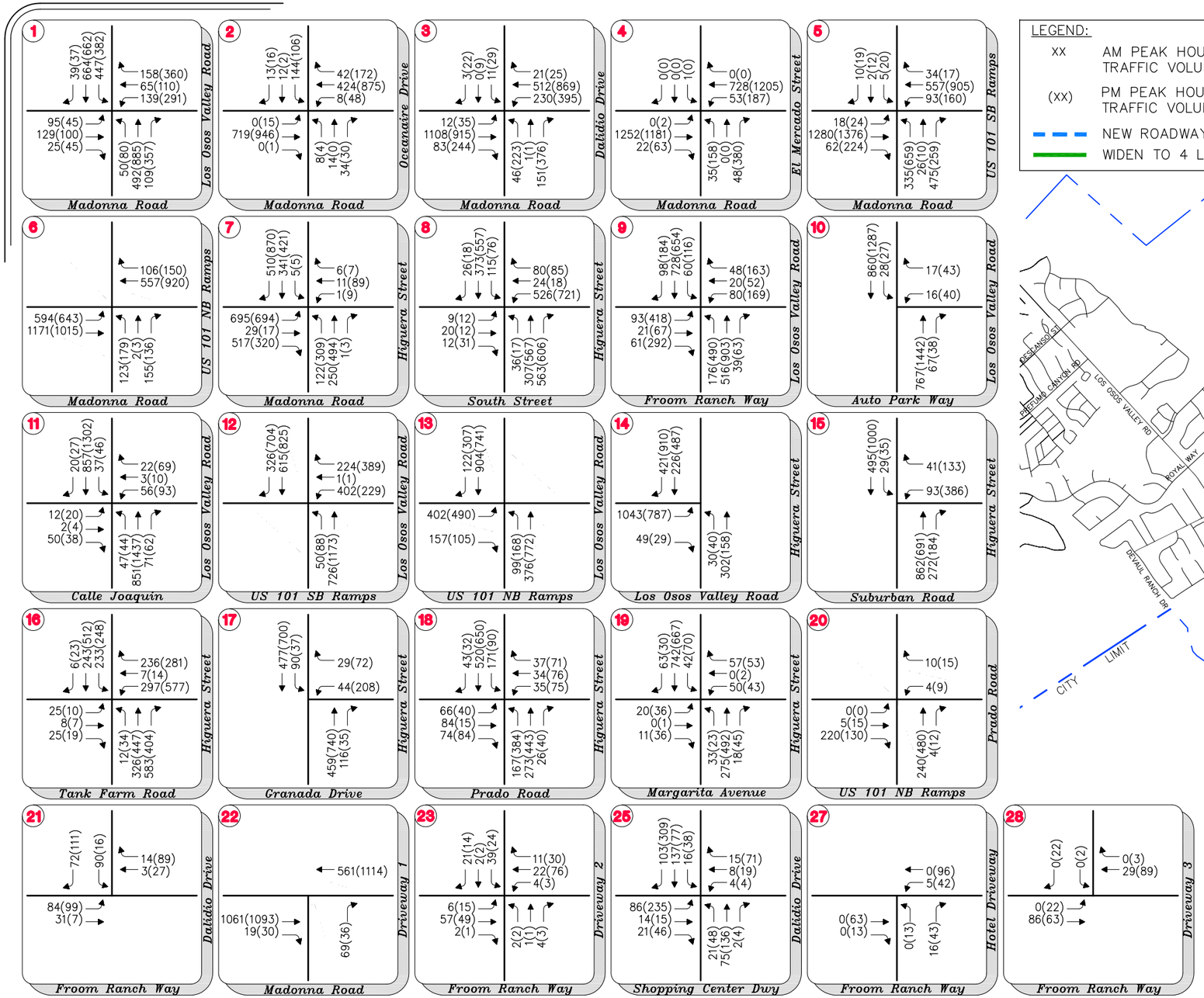
# Existing Plus Project Trip Distribution - Inbound




San Luis Ranch Specific Plan Multimodal TIS

Figure 7

# Existing Plus Project Lane Geometrics and Control




San Luis Ranch Specific Plan Multimodal TIS

Figure 8

# Existing Plus Project Peak Hour Traffic Volumes

# Existing Plus Project Conditions Analysis

The Existing Plus Project conditions multimodal analysis for the study intersections and segments are presented below.

## Existing Plus Project Conditions Intersection Analysis

Table 30 provides a summary of the Existing Plus Project conditions vehicular AM and PM peak hour intersection delay and LOS. Table 31 provides a summary of the Existing Plus Project pedestrian AM and PM peak hour conditions at the study intersections. Table 32 provides a summary of the Existing Plus Project bicycle AM and PM peak hour conditions at the study intersections. Table 33 provides a summary of the Existing conditions queuing analysis.

**TABLE 30:**
**EXISTING PLUS PROJECT CONDITIONS INTERSECTION LOS: AUTOMOBILE ANALYSIS**

| # | Intersection | Control Type[1,2] | Target LOS | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | v/c[3] | Delay | LOS | v/c[3] | Delay | LOS |
| 1 | Madonna Road/Los Osos Valley Road | Signal | D | | 27.3 | C | | 49.4 | D |
| 2 | Madonna Road/Oceanaire Drive | Signal | D | | 19.7 | B | | 15.5 | B |
| **3** | **Madonna Road/Dalidio Drive** | **Signal** | **D** | | 34.7 | C | **4.65** | **172.9** | **F** |
| 4 | Madonna Road/El Mercado | Signal | D | | 7.3 | A | | 21.8 | C |
| **5** | **Madonna Road/US 101 SB Ramps/Madonna** | **Signal** | **C** | **1.36** | **48.8** | **D** | | 23.7 | C |
| 6 | Madonna Road/US 101 NB Ramps | Signal | C | | 18.1 | B | | 21.1 | C |
| 7 | Madonna Road/Higuera Street | Signal | D | | 19.7 | B | | 24.3 | C |
| **8** | **Higuera Street/South Street** | **Signal** | **D** | | 21.8 | C | **1.47** | **82.8** | **F** |
| 9 | Los Osos Valley Road/Froom Ranch Way | Signal | D | | 22.3 | C | | 40.7 | D |
| **10** | **Los Osos Valley Road/Auto Park Way** | **TWSC** | **D** | | 15.5 | C | **0.39** | **36.6** | **E** |
| 11 | Los Osos Valley Road/Calle Joaquin | Signal | D | | 4.7 | A | | 5.8 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Signal | C | | 13.2 | B | | 22.7 | C |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Signal | C | | 29.1 | C | | 22.5 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | Signal | D | | 16.3 | B | | 20.0 | B |
| 15 | S. Higuera Street/Suburban Drive | Signal | D | | 6.4 | A | | 11.2 | B |
| 16 | S. Higuera Street/Tank Farm Road | Signal | D | | 36.7 | D | | 21.2 | C |
| 17 | S. Higuera Street/Granada Drive | Signal | D | | 8.4 | A | | 10.5 | B |
| 18 | S. Higuera Street/Prado Road | Signal | D | | 16.7 | B | | 21.1 | C |
| 19 | S. Higuera Street/Margarita Avenue | Signal | D | | 8.3 | A | | 12.3 | B |
| 20 | Prado Road/US 101 NB Ramps | AWSC | C | | 9.0 | A | | 13.9 | B |
| 21 | Froom Ranch Road/Dalidio Drive | AWSC | D | | 8.5 | A | | 8.4 | A |
| 22 | Madonna Road/Project Driveway | TWSC | D | | 14.4 | B | | 13.9 | B |
| 23 | Froom Ranch Road/Project Driveway #2 | TWSC | D | | 9.3 | A | | 9.7 | A |
| **25** | **Dalidio Drive/SC Project Driveway** | **TWSC** | **D** | | 12.8 | B | **0.85** | **49.3** | **E** |
| 27 | Froom Ranch Road/Hotel Project Driveway | TWSC | D | | 9.2 | A | | 9.3 | A |
| 28 | Froom Ranch Road/Project Driveway #3 | TWSC | D | | 8.8 | A | | 9.0 | A |

*Notes:*

*1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout*

*2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT*

*3. Volume to Capacity Ratio (v/c) is for worst movement delay, for unacceptable LOS only*

## TABLE 31:
## EXISTING PLUS PROJECT CONDITIONS INTERSECTION LOS: PEDESTRIAN ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Ped. Crosswalk Score | AM Peak Hour LOS | PM Peak Hour Ped. Crosswalk Score | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|
| 1 | Madonna Road/Los Osos Valley Road | EB | C | 2.11 | B | 2.11 | B |
| | | WB | C | 2.93 | C | 3.20 | C |
| | | NB | C | 3.06 | C | 3.39 | C |
| | | SB | C | 3.19 | C | 3.20 | C |
| 2 | Madonna Road/Oceanaire Drive | EB | C | 2.70 | B | 2.90 | C |
| | | WB | C | 3.11 | C | 3.34 | C |
| | | NB | C | 2.03 | B | 2.08 | B |
| | | SB | C | 1.83 | A | 1.88 | A |
| 3 | Madonna Road/Dalidio Drive | EB | C | 3.04 | C | 3.41 | C |
| | | WB | C | 3.07 | C | 3.17 | C |
| | | NB | C | 2.49 | B | 2.85 | C |
| | | SB | C | 1.98 | A | 2.03 | B |
| 4 | Madonna Road/El Mercado | EB | C | n/a | - | n/a | - |
| | | WB | C | 3.14 | C | 3.24 | C |
| | | NB | C | 2.27 | B | 2.78 | C |
| | | SB | C | 1.74 | A | 1.74 | A |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | C | 3.08 | C | 3.25 | C |
| | | WB | C | n/a | - | n/a | - |
| | | NB | C | 2.75 | B | 2.67 | B |
| | | SB | C | 2.18 | B | 2.19 | B |
| 6 | Madonna Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | 2.92 | C | 2.90 | C |
| | | NB | C | 1.97 | A | 2.05 | B |
| | | SB | C | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | C | 3.04 | C | 2.96 | C |
| | | WB | C | 1.99 | A | 2.01 | B |
| | | NB | C | 2.71 | B | 2.80 | C |
| | | SB | C | n/a | - | n/a | - |
| 8 | Higuera Street/South Street | EB | C | 2.01 | B | 2.01 | B |
| | | WB | C | 2.75 | B | 2.81 | C |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.50 | B | 2.57 | B |
| 9 | Los Osos Valley Road/Froom Ranch Way | EB | C | 2.49 | B | 2.76 | C |
| | | WB | C | 2.44 | B | 2.65 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 3.07 | C | 3.26 | C |
| 10 | Los Osos Valley Road/Auto Park Way | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | C | 2.48 | B | 2.28 | B |
| | | WB | C | 2.10 | B | 2.19 | B |
| | | NB | C | 2.99 | C | 3.21 | C |
| | | SB | C | 2.91 | C | 3.21 | C |
| **12** | Los Osos Valley Road/US 101 SB Ramps | EB | C | 1.91 | A | 2.34 | B |
| | | WB | C | 2.22 | B | 2.11 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | C | 2.45 | B | 2.58 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | C | 2.66 | B | 2.74 | B |
| | | NB | C | 2.25 | B | 2.30 | B |
| | | SB | C | n/a | - | n/a | - |
| **15** | **S. Higuera Street/Suburban Drive** | WB | C | 2.15 | B | 2.29 | B |
| | | **NB** | **C** | 2.99 | C | **3.61** | **D** |
| | | SB | C | 2.73 | B | 2.85 | C |
| 16 | S. Higuera Street/Tank Farm Road | EB | C | 2.01 | B | 2.01 | B |
| | | WB | C | 2.92 | C | 3.04 | C |
| | | NB | C | 3.34 | C | 3.28 | C |
| | | SB | C | 2.65 | B | 2.78 | C |
| 17 | S. Higuera Street/Granada Drive | WB | C | 2.05 | B | 2.13 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.60 | B | 2.76 | C |
| 18 | S. Higuera Street/Prado Road | EB | C | 2.35 | B | 2.41 | B |
| | | WB | C | 2.28 | B | 2.32 | B |
| | | NB | C | 2.71 | B | 2.95 | C |
| | | SB | C | 2.76 | C | 2.78 | C |
| 19 | S. Higuera Street/Margarita Avenue | EB | C | 2.23 | B | 2.07 | B |
| | | WB | C | 2.13 | B | 2.19 | B |
| | | NB | C | 2.75 | B | 2.80 | C |
| | | SB | C | 2.73 | B | 2.80 | C |
| 20 | Prado Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.*

*HCM 2010 Methodologies for the pedestrian mode at two-way stop-controlled intersections is limited to the uncontrolled crossing. No methodology exists for evaluating pedestrian performance for the stop controlled approach (cross-street). However, it is reasoned that this type of control has negligible influence on pedestrian service along the segment.*

## TABLE 32:
## EXISTING PLUS PROJECT CONDITIONS INTERSECTION LOS: BICYCLE ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Bicycle LOS Score | AM Peak Hour Bicycle LOS LOS | PM Peak Hour Bicycle LOS Score | PM Peak Hour Bicycle LOS LOS |
|---|---|---|---|---|---|---|---|
| 1 | Madonna Road/Los Osos Valley Road | EB | D | 3.27 | C | 3.15 | C |
| | | WB | D | 3.39 | C | 4.05 | D |
| | | NB | D | 1.65 | A | 2.02 | B |
| | | SB | D | 2.63 | B | 2.52 | B |
| 2 | Madonna Road/Oceanaire Drive | EB | D | 2.75 | B | 2.96 | C |
| | | WB | D | 1.08 | A | 1.64 | A |
| | | NB | D | 2.76 | C | 2.73 | B |
| | | SB | D | 2.23 | B | 2.15 | B |
| 3 | Madonna Road/Dalidio Drive | EB | D | 2.26 | B | 2.15 | B |
| | | WB | D | 1.59 | A | 1.85 | A |
| | | NB | D | 1.76 | A | 2.41 | B |
| | | SB | D | 1.34 | A | 1.42 | A |
| 4 | Madonna Road/El Mercado | EB | D | 1.91 | A | 1.81 | A |
| | | WB | D | 1.79 | A | 2.08 | B |
| | | NB | D | 3.19 | C | 3.93 | D |
| | | SB | D | 3.03 | C | 3.03 | C |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | D | 2.11 | B | 2.20 | B |
| | | WB | D | 1.69 | A | 1.89 | A |
| | | NB | D | n/a | - | n/a | - |
| | | SB | D | 2.91 | C | 2.96 | C |
| 6 | Madonna Road/US 101 NB Ramps | EB | D | 2.85 | C | 2.52 | B |
| | | WB | D | 1.69 | A | 1.95 | A |
| | | NB | D | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | D | 3.46 | C | 3.02 | C |
| | | WB | D | 2.43 | B | 2.59 | B |
| | | NB | D | 1.70 | A | 2.07 | B |
| | | SB | D | 2.22 | B | 2.59 | B |
| 8 | Higuera Street/South Street | EB | D | 2.70 | B | 2.73 | B |
| | | WB | D | 2.67 | B | 3.05 | C |
| | | NB | D | 3.01 | C | 3.29 | C |
| | | SB | D | 1.57 | A | 1.71 | A |
| 9 | **Los Osos Valley Road/Froom Ranch Way** | **EB** | **D** | 3.40 | C | **4.42** | **E** |
| | | WB | D | 1.95 | A | 2.66 | B |
| | | NB | D | 1.75 | A | 2.15 | B |
| | | SB | D | 1.72 | A | 1.74 | A |
| 10 | Los Osos Valley Road/Auto Park Way | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | D | 2.99 | C | 2.98 | C |
| | | WB | D | 3.08 | C | 3.23 | C |
| | | NB | D | 1.48 | A | 1.91 | A |
| | | SB | D | 0.41 | A | 0.74 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | WB | D | n/a | - | n/a | - |
| | | NB | D | 2.71 | B | 3.07 | C |
| | | SB | D | 2.39 | B | 3.25 | C |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | NB | D | 1.84 | A | 2.61 | B |
| | | SB | D | 3.49 | C | 3.47 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | D | 2.00 | A | 1.75 | A |
| | | NB | D | 1.87 | A | 1.63 | A |
| | | SB | D | 2.40 | B | 3.69 | D |
| 15 | S. Higuera Street/Suburban Drive | WB | D | 0.89 | A | 1.56 | A |
| | | NB | D | 2.21 | B | 1.95 | A |
| | | SB | D | 1.71 | A | 2.14 | B |
| 16 | S. Higuera Street/Tank Farm Road | EB | D | 2.70 | B | 2.66 | B |
| | | WB | D | 2.46 | B | 3.00 | C |
| | | NB | D | 2.07 | B | 2.01 | B |
| | | SB | D | 1.66 | A | 1.91 | A |
| 17 | S. Higuera Street/Granada Drive | WB | D | 2.63 | B | 2.99 | C |
| | | NB | D | 1.70 | A | 1.88 | A |
| | | SB | D | 1.83 | A | 1.98 | A |
| 18 | S. Higuera Street/Prado Road | EB | D | 2.37 | B | 2.22 | B |
| | | WB | D | 2.70 | B | 2.90 | C |
| | | NB | D | 1.64 | A | 1.99 | A |
| | | SB | D | 1.88 | A | 1.91 | A |
| 19 | S. Higuera Street/Margarita Avenue | EB | D | 2.47 | B | 2.55 | B |
| | | WB | D | 2.70 | B | 2.68 | B |
| | | NB | D | 1.58 | A | 1.79 | A |
| | | SB | D | 2.13 | B | 2.06 | B |
| 20 | Prado Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |

Notes:

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.

No methodology exists for evaluating bicycle performance at two-way stop-controlled intersections. However, it is reasoned that this type of control has negligible influence on bicycle service along the segment for stop controll on the cross-street.

**TABLE 33:**
**EXISTING PLUS PROJECT CONDITIONS 95TH PERCENTILE QUEUING ANALYSIS**

| *Intersection* | | | | | 95th Percentile Queue/Lane (ft) | |
|---|---|---|---|---|---|---|
| ID | Location | Movement | No. Lanes | Total Storage (ft)[1] | AM Peak Hour | PM Peak Hour |
| 1 | Madonna Road/Los | Northbound Right | 1 | 175 | 92 | **250** |
| 2 | Madonna | Westbound Right | 1 | 100 | 46 | **165** |
| 3 | Madonna Road/Dalidio Drive | Eastbound Left | 1 | 115 | 65 | **125** |
| | | Westbound Left | 1 | 275 | 224 | **376** |
| 5 | Madonna Road/US 101 | Eastbound Left | 1 | 100 | 72 | **117** |
| 6 | Madonna Road/US 101 | Northbound Left | 1 | 185 | 141 | **192** |
| 7 | Madonna Road/Higuera Street | Eastbound Right | 1 | 150 | **325** | **265** |
| | | Northbound Left | 1 | 160 | 121 | **252** |
| 8 | Higuera Street/South Street | Westbound Left | 2 | 240 | **214** | **389** |
| | | Northbound Left | 1 | 60 | **88** | **72** |
| | | Northbound Right | 1 | 60 | **149** | **150** |
| | | Southbound Left | 1 | 70 | **130** | **107** |
| 9 | Los Osos Valley | Westbound Right | 1 | 50 | **56** | **87** |
| 11 | Los Osos Valley Road/Calle Joaquin | Northbound Through | 2 | 235 | **139** | 135 |
| | | Southbound Left | 1 | 180 | **217** | **209** |
| | | Southbound Through/Right | 2 | - | **945** | 722 |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Westbound Left | 1 | 150 | **242** | **227** |
| | | Northbound Left | 1 | 80 | **101** | **117** |
| | | Southbound Through | 1 | 240 | **308** | **279** |
| | | Southbound Right | 1 | 240 | 220 | **262** |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Eastbound Left/Right | 1 | 200 | **228** | **246** |
| | | Northbound Left | 1 | 140 | 109 | **200** |
| | | Southbound Through | 1 | 865 | **1119** | 811 |
| | | Southbound Right | 1 | 60 | **204** | **221** |
| 14 | S. Higuera Street/Los | Eastbound Right | 1 | 90 | **165** | **136** |
| 16 | S. Higuera Street/Tank Farm Road | Northbound Right | 1 | 100 | **194** | **123** |
| | | Southbound Left | 1 | 165 | 89 | **215** |
| 18 | S. Higuera Street/Prado Road | Northbound Left | 1 | 100 | **132** | **170** |
| | | Northbound Through/Right | 2 | - | 134 | 379 |
| | | Southbound Left | 1 | 60 | **117** | **108** |
| | | Southbound Through/Right | 2 | - | 230 | 237 |
| 19 | S. Higuera Street/Margarita Avenue | Southbound Left | 1 | 60 | 51 | **75** |

*Not* ***1. Bolded entries indicate queues exceed available storage***

2. Storage Length of " - " represents a lane which exceeds 900 feet, usually a through lane.

3. For Movements with more than one lane, the maximum of the 95th percentile queue is reported.

4. * Represents storage lengths for one lane; second lane is a left or right trap lane.

As shown in Table 30, the intersection of Madonna Road/Dalidio Drive, Madonna Road/US 101 SB Ramps/Madonna Inn, Higuera Street/South Street, and Los Osos Valley Road/Auto Park Way continue to operate at unacceptable conditions during AM and PM peak hours under Existing Plus Project Conditions. The northbound and southbound approaches experience long delays. Queuing analysis results show numerous locations in which the 95th percentile queue exceeds the available storage capacity during existing conditions.

Pedestrian and bicycle analysis shows acceptable conditions at the study intersections, except for the intersections of Los Osos Valley Road/US 101 SB Ramps and Los Osos Valley

Road/Froom Ranch Way, respectively, which continue to operate at unacceptable conditions under Existing Plus Project Conditions. Transportation improvements required to maintain acceptable multi-modal conditions are detailed in a subsequent section of this report.

## Existing Plus Project Conditions Segment Analysis

Table 34 provides a summary of the Existing Plus Project vehicular AM and PM peak hour conditions for the study segments. Table 35 provides a summary of the Existing Plus Project pedestrian AM and PM peak hour conditions for the study segments. Table 36 provides a summary of the Existing Plus Project bicycle AM and PM peak hour conditions for the study segments. Table 37 provides a summary of the Existing Plus Project transit AM and PM peak hour conditions for the study segments. Table 38 provides a summary of the Existing Plus Project freeway segments analysis for AM and PM peak hour conditions for the study segments along US 101. Transportation improvements required to mitigate project-related impacts are detailed in a subsequent section of this report.

## TABLE 34:
## EXISTING PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: AUTOMOBILE ANALYSIS

| AUTO SEGMENT LOS | | | | | | AM PEAK | | | | PM PEAK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **D** | 21.0 | 42.1 | 50% | D | **10.8** | **42.1** | **26%** | **F** |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 29.1 | 42.1 | 69% | B | 31.0 | 42.1 | 74% | B |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 22.7 | 40.8 | 56% | C | 24.6 | 40.7 | 60% | C |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **D** | **15.5** | **40.7** | **38%** | **E** | **13.4** | **40.8** | **33%** | **E** |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 17.1 | 34.8 | 49% | D | 16.0 | 34.8 | 46% | D |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **D** | 20.9 | 34.7 | 60% | C | **12.7** | **34.6** | **37%** | **E** |
| 4 | Madonna Rd | US 101 SB Ramps | El Mercado | WB | D | 31.9 | 37.9 | 84% | B | 20.7 | 37.3 | 55% | C |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 22.3 | 37.8 | 59% | C | 17.5 | 37.7 | 46% | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 34.2 | 37.8 | 90% | A | 33.8 | 37.8 | 89% | A |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 32.5 | 37.8 | 86% | A | 33.3 | 37.8 | 88% | A |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | **9.4** | **37.2** | **25%** | **F** | **11.0** | **37.2** | **30%** | **F** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | 16.5 | 37.2 | 44% | D | **12.9** | **37.2** | **35%** | **E** |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 37.1 | 44.5 | 83% | B | 35.3 | 44.5 | 79% | B |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 35.6 | 44.8 | 79% | B | 35.7 | 44.8 | 80% | B |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 18.6 | 38.9 | 48% | D | 16.5 | 38.9 | 42% | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 25.4 | 38.9 | 65% | C | 21.0 | 38.9 | 54% | C |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 33.8 | 41.8 | 81% | B | 30.6 | 41.8 | 73% | B |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 25.5 | 41.9 | 61% | C | 28.1 | 41.9 | 67% | B |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 42.6 | 41.6 | 102% | A | 27.3 | 42.6 | 64% | C |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 30.5 | 41.6 | 73% | B | 28.7 | 42.6 | 67% | B |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 27.3 | 42.4 | 65% | C | 24.8 | 41.2 | 60% | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 20.2 | 42.5 | 47% | D | 18.9 | 41.3 | 46% | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 20.6 | 42.1 | 49% | D | 15.8 | 39.1 | 40% | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 24.7 | 42.0 | 59% | C | 21.5 | 39.0 | 55% | C |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 23.3 | 41.9 | 56% | C | 17.2 | 41.8 | 41% | D |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | 20.3 | 41.8 | 49% | D | **16.7** | **41.8** | **40%** | **E** |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 34.6 | 43.0 | 81% | B | 30.9 | 43.0 | 72% | B |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 29.2 | 43.2 | 68% | B | 22.4 | 43.2 | 52% | C |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **D** | 13.2 | 32.1 | 41% | D | **8.3** | **32.1** | **26%** | **F** |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 16.9 | 31.1 | 54% | C | 15.2 | 31.1 | 49% | D |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **D** | **11.0** | **37.7** | **29%** | **F** | **12.9** | **37.7** | **34%** | **E** |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | 32.6 | 37.4 | 87% | A | 31.8 | 37.4 | 85% | B |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 20.6 | 39.2 | 53% | C | 17.7 | 39.2 | 45% | D |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 29.1 | 39.2 | 74% | B | 25.5 | 39.2 | 65% | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 28.0 | 38.3 | 73% | B | 24.7 | 38.3 | 64% | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 23.7 | 38.3 | 62% | C | 21.2 | 38.3 | 55% | C |
| 19 | **Froom Ranch Way** | **Dick's Sporting Goods Dwy** | **Los Osos Valley** | **WB** | **D** | 17.7 | 38.0 | 46% | D | **12.8** | **38.0** | **34%** | **E** |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Dwy | EB | D | 34.7 | 37.4 | 93% | A | 34.5 | 37.4 | 92% | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | 29.3 | 39.3 | 74% | B | 29.5 | 39.3 | 75% | B |
| | **Dalidio Dr** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **6.3** | **39.4** | **16%** | **F** | **1.6** | **39.4** | **4%** | **F** |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods Dwy | WB | D | 40.0 | 40.6 | 98% | A | 39.9 | 40.6 | 98% | A |
| | Froom Ranch Way | Dick's Sporting Goods Dwy | Dalidio | EB | D | 34.1 | 40.8 | 84% | B | 33.9 | 40.8 | 83% | B |

## TABLE 35:
## EXISTING PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: PEDESTRIAN ANALYSIS

| PEDESTRIAN SEGMENT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Average Ped. Space ($ft^2$/p) | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | **2648** | **3.56** | **D** | **3.84** | **D** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **C** | **17482** | **3.76** | **D** | **3.90** | **D** |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **C** | **12000** | **3.60** | **D** | **3.92** | **D** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | **5833** | **3.87** | **D** | **3.97** | **D** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | **37450** | **3.59** | **D** | **3.92** | **D** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | **52920** | **3.70** | **D** | **3.86** | **D** |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **C** | **26250** | **3.66** | **D** | **3.84** | **D** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | **27915** | **3.93** | **D** | **4.17** | **D** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **C** | **No Peds** | **3.73** | **D** | **3.90** | **F** |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **C** | **No Peds** | **4.15** | **D** | **4.10** | **D** |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **25200** | **3.65** | **D** | **3.81** | **D** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **19838** | **3.90** | **D** | **3.79** | **D** |
| 7 | **S. Higuera St** | **Madonna Rd** | **Margarita Ave** | **SB** | **C** | **23247** | **3.82** | **D** | **3.80** | **D** |
| | **S. Higuera St** | **Margarita Ave** | **Madonna Rd** | **NB** | **C** | **5398** | **3.61** | **D** | **3.80** | **D** |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **40979** | **3.61** | **D** | **3.63** | **D** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | **21700** | 3.45 | C | **3.58** | **D** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **C** | **9292** | **3.55** | **D** | **3.66** | **D** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | C | 8400 | 3.16 | C | 3.38 | C |
| 10 | **S. Higuera St** | **Granada Dr** | **Tank Farm Road** | **SB** | **C** | **46305** | **3.54** | **D** | **3.69** | **D** |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 49140 | 3.11 | C | 3.26 | C |
| 11 | **S. Higuera St** | **Tank Farm Road** | **Suburban Drive** | **SB** | **C** | **12600** | **3.57** | **D** | **3.80** | **D** |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | C | 31500 | 3.48 | C | 3.44 | C |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **39312** | **3.57** | **D** | **3.85** | **D** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | **43533** | **3.85** | **D** | **3.89** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | **3853** | **3.81** | **D** | **3.88** | **D** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **0** | **3.70** | **F** | **4.05** | **F** |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **C** | **27300** | **3.77** | **D** | **4.01** | **D** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **C** | **22050** | **3.68** | **D** | **4.00** | **D** |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **No Peds** | **3.61** | **D** | **3.70** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | **63000** | **3.63** | **D** | **3.93** | **D** |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **C** | **No Peds** | **4.17** | **D** | **4.22** | **D** |
| | **Los Osos Valley** | **US 101 NB Ramps** | **US 101 SB Ramps** | **NB** | **C** | **53928** | **3.63** | **D** | 3.13 | C |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **46575** | **4.23** | **D** | **4.02** | **D** |
| | **Los Osos Valley** | **S. Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **1680** | **3.68** | **D** | **4.09** | **D** |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 25200 | 2.90 | C | 2.90 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 3019 | 3.42 | C | 3.32 | C |
| 19 | Froom Ranch Way | Dick's Sporting Goods Dwy | Los Osos Valley | WB | C | 4500 | 3.03 | C | 3.28 | C |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Dwy | EB | C | 7350 | 1.76 | A | 1.79 | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | C | 3500 | 1.64 | A | 1.61 | A |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | C | 21000 | 3.14 | C | 3.40 | C |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods Dwy | WB | C | 2520 | 1.55 | A | 1.57 | A |
| | Froom Ranch Way | Dick's Sporting Goods Dwy | Dalidio | EB | C | No Peds | 1.64 | A | 1.64 | A |

Notes:

Sidewalk is present along frontage roads for segments #1 - Madonna Road and #13 - Los Osos Valley Road, and is not accounted for in this analysis.

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is reasoned that it has negligible influence on pedestrian sevice along the segment.

**TABLE 36:**
**EXISTING PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: BICYCLE ANALYSIS**

| BICYCLE SEGMENT LOS | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 3.61 | D | 3.98 | D |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 3.74 | D | 3.80 | D |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 3.13 | C | 3.22 | C |
| | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 3.58 | D | 3.44 | C |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 3.30 | C | 3.22 | C |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | 3.51 | D | 3.41 | C |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | 3.97 | D | **4.36** | **E** |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 3.64 | D | 3.66 | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 3.32 | C | 3.37 | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 3.42 | C | 3.36 | C |
| 6 | Madonna Rd | Higuera St | US 101 NB Ramps | WB | D | 3.50 | D | 3.56 | D |
| | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 3.73 | D | 3.59 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 3.89 | D | 3.80 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 4.06 | D | 4.15 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 3.64 | D | 3.64 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 3.87 | D | 3.87 | D |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 3.84 | D | 3.87 | D |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 3.42 | C | 3.50 | C |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 4.10 | D | 4.16 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 3.48 | C | 3.52 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 3.33 | C | 3.41 | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 3.40 | C | 3.39 | C |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 3.24 | C | 3.60 | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 3.90 | D | 3.86 | D |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 3.71 | D | 3.71 | D |
| | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 3.38 | C | 3.46 | C |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 3.56 | D | 3.59 | D |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 3.81 | D | 3.89 | D |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | 3.34 | C | 3.54 | D |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 3.54 | D | 3.60 | D |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | 3.73 | D | 3.73 | D |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | 3.40 | C | 3.51 | D |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 3.45 | C | 3.41 | C |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 3.29 | C | 3.43 | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 3.44 | C | 3.44 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 3.94 | D | 3.68 | D |
| 19 | Froom Ranch Way | Dick's Sporting Goods Dwy | Los Osos Valley | WB | D | 3.08 | C | 3.55 | D |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Dw | EB | D | 3.24 | C | 2.49 | B |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | 3.35 | C | 3.05 | C |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 3.32 | C | 3.43 | C |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods Dw | WB | D | 2.50 | B | 2.92 | C |
| | Froom Ranch Way | Dick's Sporting Goods Dwy | Dalidio | EB | D | 3.42 | C | 3.41 | C |

Notes:
HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is incorporated into the methodology for evaluateing bicycle segment performance.

## TABLE 37:
## EXISTING PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: TRANSIT ANALYSIS

| TRANSIT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Route Name | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **D** | **Ruote 4** | 4.17 | D | **4.30** | **E** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **D** | **Route 5** | **4.30** | **E** | 3.98 | D |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **D** | **Route 4** | **4.46** | **E** | **4.57** | **E** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **D** | **Route 5** | **4.74** | **E** | **4.54** | **E** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **D** | **Route 4** | **4.35** | **E** | **4.51** | **E** |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | Route 5 | Not Analyzed | N/A | Not Analyzed | N/A |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | **Route 4** | **4.36** | **E** | **4.59** | **E** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **D** | **Route 5** | **4.67** | **E** | **4.48** | **E** |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | Route 4 | 3.97 | D | 4.09 | D |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **D** | **Route 5** | **4.35** | **E** | 4.04 | D |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | **Route 4** | **4.33** | **E** | **4.44** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | **Route 5** | **4.55** | **E** | **4.29** | **E** |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | Route 2 | Not Analyzed | N/A | 3.51 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | Route 2 | 3.65 | D | 3.69 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | Route 2 | Not Analyzed | N/A | 4.19 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | Route 2 | 4.15 | D | 4.23 | D |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **D** | **Route 2** | **4.35** | **E** | **4.28** | **E** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | Route 2 | 3.76 | D | 3.83 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | Route 2 | 3.75 | D | 3.83 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | Route 2 | 3.51 | D | 3.58 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | Route 2 | 3.97 | D | 3.96 | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 4** | **4.50** | **E** | **4.53** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 4** | 4.22 | D | **4.38** | **E** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.61** | **E** | **4.38** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 5** | **4.36** | **E** | 4.21 | D |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **D** | **Route 4** | 4.22 | D | **4.35** | **E** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **D** | **Route 4** | 4.24 | D | **4.49** | **E** |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **D** | **Route 5** | **4.37** | **E** | 4.16 | D |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **D** | **Route 5** | **4.37** | **E** | **4.33** | **E** |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | Route 2 | 3.83 | D | Not Analyzed | N/A |
| 19 | Froom Ranch Way | Dick's Sporting Goods Dwy | Los Osos Valley | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods Dwy | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | Route 4 | 4.05 | D | 4.08 | D |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | Route 5 | 4.20 | D | 4.03 | D |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods Dwy | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch Way | Dick's Sporting Goods Dwy | Dalidio | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |

Notes:

Segment 20 transit is southbound for routes 4 and 5

Route 2 Serves the Prado Day Center stop during the AM peak hour, and the DMV/Margarita stop during the PM Peak Hour

**TABLE 38:**
**EXISTING PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: FREEWAY ANALYSIS**

| Interchange Location | Target LOS | Segment Type | No. of Lanes | AM Peak Hour Volume | AM Peak Hour Density (pc/mi/ln) | AM Peak Hour LOS | PM Peak Hour Volume | PM Peak Hour Density (pc/mi/ln) | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|---|
| ***US 101 at Los Osos Valley Road*** | | | | | | | | | |
| US 101 NB South of Los Osos Valley Road | C | Freeway | 2 | 2,801 | 24.8 | C | 2,284 | 20.0 | C |
| US 101 SB South of Los Osos Valley Road | C | Freeway | 2 | 1,432 | 12.6 | B | **3,082** | **27.8** | **D** |
| ***US 101 at Prado Road*** | | | | | | | | | |
| US 101 NB South of Prado Road | C | Freeway | 2 | 2,463 | 21.6 | C | 2,164 | 19.0 | C |
| ***US 101 at Madonna Road*** | | | | | | | | | |
| US 101 NB South of Madonna Road | C | Freeway | 2 | 2,488 | 21.8 | C | 2,524 | 22.2 | C |
| US 101 SB South of Madonna Road | C | Freeway | 2 | 1,682 | 14.8 | B | 2,908 | 25.9 | C |

As shown in the Existing Plus Project Conditions segment analysis tables, most of the pedestrian and transit facilities are projected to operate at unacceptable levels of service as well as several segments for automobile mode and only one segment for the bicycle mode.

# Existing Plus Project Impacts & Mitigation Measures

This section presents the project-related impacts and mitigation measures at the study intersections and segments, developed based on the findings from the analyses presented in the prior sections of this report. Improvements are identified only where this is a significant project impact, based on the significance thresholds identified previously.

Table 39 presents the intersections projected to operate at unacceptable levels of service for vehicle, pedestrian, bicycle, and transit travel modes under *Existing Plus Project* conditions, and whether the project has a significant impact based on the City's thresholds. Tables 40A and 40B present the roadway segments projected to operate at unacceptable levels of service for vehicle, pedestrian, bicycle, and transit travel modes under Existing Plus Project AM and PM peak hour conditions, respectively, and whether the project has a significant impact based on the City's thresholds. Table 40C presents the project impacts for the queuing analysis at the study intersections.

**TABLE 39:**
**EXISTING PLUS PROJECT SIGNIFICANT INTERSECTION IMPACTS**

| Intersection # | 3 | | 5 | | 8 | | 9 | | 10 | | 15 | | 25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Name** | Madonna Road/ Dalidio Drive | | Madonna Road/ US 101 SB Ramps | | Higuera Street/ South Street | | Los Osos Valley Road/ Froom Ranch Way | | Los Osos Valley Road/ Auto Park Way | | S. Higuera Street/ Suburban Drive | | Dalidio Drive/ SC Project Driveway | |
| **Mode** | **AUTO** | | **AUTO** | | **AUTO** | | **BIKE** | | **AUTO** | | **PED** | | **AUTO** | |
| **SCENARIO** | **v/c** | **LOS** | **v/c** | **LOS** | **v/c** | **LOS** | **Score** | **LOS** | **v/c** | **LOS** | **v/c** | **LOS** | **v/c** | **LOS** |
| *AM PEAK HOUR* | | | | | | | EB | | | | NB | | | |
| Existing | - | A | 1.31 | D | - | C | 3.38 | C | - | B | 2.98 | C | - | A |
| Existing Plus Project | - | C | 1.36 | D | - | C | 3.40 | C | - | C | 2.99 | C | - | B |
| Significant Impact? | No | | **Yes** | | No | | No | | No | | No | | No | |
| *PM PEAK HOUR* | | | | | | | EB | | | | NB | | | |
| Existing | 2.11 | E | - | C | 1.31 | E | 4.39 | E | - | D | 3.60 | D | - | A |
| Existing Plus Project | 4.65 | F | - | C | 1.47 | F | 4.42 | E | 0.39 | E | 3.61 | D | 0.85 | E |
| Significant Impact? | **Yes** | | No | | **Yes** | | No | | **Yes** | | No | | **Yes** | |

Note: V/C Ratio is based on worst movement

## TABLE 40A: EXISTING PLUS PROJECT SIGNIFICANT ROADWAY IMPACTS

| Existing Plus Project Multimodal Segment LOS | | | | | Auto Mode | | | | | | Pedestrian Mode | | | | | | Bicycle Mode | | | | | | Transit Mode | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***AM PEAK HOUR*** | | | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | |
| ID | Roadway | From | To | Direction | Auto LOS Threshold | Travel Speed (mph) | LOS | Travel Speed (mph) | LOS | **Significant Impact?** | Ped LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Bike LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Transit LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** |
| 2 | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 27.1 | C | 15.5 | **E** | **Yes** | C | 3.80 | D | 3.87 | D | No | D | 3.57 | D | 3.58 | D | No | D | 4.70 | **E** | 4.74 | **E** | No |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 21.2 | C | 17.1 | D | No | C | 3.52 | D | 3.59 | D | No | D | 3.27 | C | 3.30 | C | No | D | 4.24 | D | 4.35 | **E** | **Yes** |

Note: Segment 20 transit is southbound for routes 4 and 5; Segment 21 pedestrian and bicycle service will be further evaluated using off-street facilities methodologies.

| Existing Plus Project Multimodal Segment LOS | | | | | Auto Mode | | | | | | Pedestrian Mode | | | | | | Bicycle Mode | | | | | | Transit Mode | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***PM PEAK HOUR*** | | | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | |
| ID | Roadway | From | To | Direction | Auto LOS Threshold | Travel Speed (mph) | LOS | Travel Speed (mph) | LOS | **Significant Impact?** | Ped LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Bike LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Transit LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 12.7 | **E** | 10.7 | **F** | **Yes** | C | 3.79 | D | 3.82 | D | No | D | 3.93 | D | 3.97 | D | No | D | 4.28 | **E** | 4.32 | **E** | No |
| 2 | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 18.9 | D | 13.4 | **E** | **Yes** | C | 3.89 | D | 3.97 | D | No | D | 3.43 | C | 3.44 | C | No | D | 4.51 | **E** | 4.54 | **E** | No |
| 6 | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 13.3 | **E** | 12.9 | **E** | No | C | 3.72 | D | 3.79 | D | No | D | 3.53 | D | 3.59 | D | No | D | 4.18 | D | 4.29 | **E** | **Yes** |
| 13 | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 16.9 | D | 16.7 | **E** | **Yes** | C | 4.04 | **F** | 4.05 | **F** | No | D | 3.46 | C | 3.46 | C | No | D | 4.38 | **E** | 4.38 | **E** | No |

Note: Segment 20 transit is southbound for routes 4 and 5; Segment 21 pedestrian and bicycle service will be further evaluated using off-street facilities methodologies.

## TABLE 40C: EXISTING PLUS PROJECT SIGNIFICANT QUEUING IMPACTS

| Intersection | | | | | Existing | | EXPP Conditions | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 95th Percentile Queue/Lane (ft) | | 95th Percentile Queue/Lane (ft) | |
| ID | Location | Movement | No. Lanes | Total Storage (ft)[1] | AM Peak Hour | PM Peak Hour | AM Peak Hour | PM Peak Hour |
| 1 | Madonna Road/Los Osos Valley Road | Northbound Right | 1 | 175 | 96 | **240** | 92 | **250** |
| 2 | Madonna Road/Oceanaire Drive | Westbound Right | 1 | 100 | 39 | 95 | 46 | **165** |
| 3 | Madonna Road/Dalidio Drive | Westbound Left | 1 | 275 | 42 | 134 | 224 | **376** |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | Eastbound Left | 1 | 100 | 92 | 94 | 72 | **117** |
| 6 | Madonna Road/US 101 NB Ramps | Northbound Left | 1 | 185 | 144 | 178 | 141 | **192** |
| 7 | Madonna Road/Higuera Street | Eastbound Right | 1 | 150 | **232** | 146 | **325** | **265** |
| | | Northbound Left | 1 | 160 | 107 | **251** | 121 | **252** |
| 8 | Higuera Street/South Street | Westbound Left | 2 | 240 | 219 | **310** | 214 | **389** |
| | | Northbound Left | 1 | 60 | **87** | **74** | **88** | **72** |
| | | Northbound Right | 1 | 60 | **142** | **136** | **149** | **150** |
| | | Southbound Left | 1 | 70 | **109** | **97** | **130** | **107** |
| 9 | Los Osos Valley Road/Froom Ranch Way | Eastbound Left | 2* | 250 | 108 | **309** | 103 | **336** |
| | | Westbound Right | 1 | 50 | 41 | **82** | **56** | **87** |
| 11 | Los Osos Valley Road/Calle Joaquin | Southbound Left | 1 | 180 | 108 | 170 | **217** | **209** |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Westbound Left | 1 | 150 | **241** | **224** | **242** | **227** |
| | | Southbound Through | 2 | 240 | **297** | **289** | **308** | **279** |
| | | Southbound Right | 1 | 240 | 177 | 238 | 220 | **262** |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Southbound Through | 1 | 940 | **1042** | 822 | **1119** | 811 |
| | | Southbound Right | 1 | 135 | **186** | **219** | **204** | **221** |
| 14 | S. Higuera Street/Los Osos Valley Road | Eastbound Right | 1 | 90 | **164** | **122** | **165** | **136** |
| 16 | S. Higuera Street/Tank Farm Road | Northbound Right | 1 | 100 | **137** | **134** | **146** | **123** |
| 18 | S. Higuera Street/Prado Road | Northbound Left | 1 | 100 | **131** | **176** | **132** | **170** |
| | | Southbound Left | 1 | 60 | **116** | **109** | **117** | **108** |
| 19 | S. Higuera Street/Margarita Avenue | Southbound Left | 1 | 60 | 58 | **67** | 51 | **75** |

*Notes:* 1. Bolded entries indicate queues exceed available storage

2. Storage Length of " - " represents a lane which exceeds 900 feet, usually a through lane.

3. For Movements with more than one lane, the maximum of the 95th percentile queue is reported.

4. * Represents storage lengths for one lane; second lane is a left or right trap lane.

***Red Cells represent New Impacts from Project-added traffic***

***Yellow Cells represent Existing queues exceeding storage that are increased by project-added traffic.***

# Existing Plus Project Mitigation Measures

This section presents project impacts and potential mitigation measures at the study locations. The feasibility of these improvements is not known beyond a preliminary planning level. Where significant impacts to intersections and for roadway segments have been identified, mitigation measures have been proposed to reduce the project impact to less than significant. The mitigation measures have been summarized in Table 41, identifying which mitigation measures are projected to reduce the project's impact to less than significant for the corresponding intersection or segment, for each mode. Additionally, it is important to note that the optimization of throughput to mitigate segment impacts may create queuing impacts for opposing movements.

**TABLE 41: EXISTING PLUS PROJECT MITIGATION MEASURES SUMMARY**

| Existing Plus Project Significant Impact Location | Mode | Impact | Mitigation Measure |
|---|---|---|---|
| Intersection #1<br>Madonna Rd/Los Osos Valley Rd | Auto (Queue) | Addition of project traffic would exacerbate the existing northbound right queue in the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Intersection #2<br>Madonna Rd/Oceanaire Dr | Auto (Queue) | Addition of project traffic would result in a new impact to the westbound right queue in the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Intersection #3<br>Madonna Rd/Dalidio Dr | Auto | This intersection currently operates at unacceptable LOS E in the PM peak hour. The addition of Project traffic exacerbates this unacceptable condition by increasing delay and v/c ratio. | • Install a second westbound left turn pocket with 310' storage on Madonna Road and extend current pocket to 310'; this may require additional right-of-way, potentially impacting private or public land.<br><br>• Install dedicated eastbound right turn pocket on Madonna Road.<br><br>• Provide northbound right turn overlap phase, and prohibit westbound U-turns.<br>• Provide a split phase for northbound and southbound.<br><br>• Optimize traffic signal cycle lengths. |

**TABLE 41: EXISTING PLUS PROJECT MITIGATION MEASURES SUMMARY**

| Existing Plus Project Significant Impact Location | Mode | Impact | Mitigation Measure |
|---|---|---|---|
| Intersection #5 Madonna Rd/US 101 SB Ramps/Madonna Inn | Auto | This intersection currently operates at unacceptable LOS D in the AM peak hour. The addition of Project traffic exacerbates this unacceptable condition by increasing delay and v/c ratio. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Intersection #5 Madonna Rd/US 101 SB Ramps/Madonna Inn | Auto (Queue) | Addition of project traffic would result in a new impact to the eastbound left queue in the PM peak hour. | Extension of the eastbound left turn pocket to 150' would improve this condition to an acceptable level. This pocket is back-to-back with another turn pocket that would be shortened to accommodate the extension with no residual impact. |
| Intersection #6 Madonna Rd/US 101 NB Ramps | Auto (Queue) | Addition of project traffic would result in a new impact to the northbound left queue in the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Intersection #7 Madonna Rd/S. Higuera St | Auto (Queue) | Addition of project traffic would:<br>•Exacerbate the existing eastbound right queues in the AM and result in a new impact in the PM peak hour.<br>•Exacerbate the northbound left queue in the PM peak hour. | Construction of the Prado Overcrossing with Northbound Ramps would improve this condition to an acceptable level. |
| Intersection #8 Higuera St/South St | Auto | This intersection currently operates at unacceptable LOS E in the PM peak hour. The addition of Project traffic exacerbates this unacceptable condition by increasing delay and v/c ratio, resulting in LOS F. | Optimize signal timing to accommodate increased volume will improve the operations at this intersection. |

**TABLE 41: EXISTING PLUS PROJECT MITIGATION MEASURES SUMMARY**

| Existing Plus Project Significant Impact Location | Mode | Impact | Mitigation Measure |
|---|---|---|---|
| Intersection #9<br>Los Osos Valley Road/Froom Ranch Way | Auto (Queue) | Addition of project traffic would:<br>•Exacerbate the eastbound left queue in the PM peak hour.<br>•Result in a new impact in the AM peak hour and exacerbate the westbound right queue in the PM peak hour. | •Widening EB Froom Ranch Way to add a dedicated right turn pocket would improve this condition to an acceptable level.<br><br>•Extension of the westbound right turn pocket to 110' would improve this condition to an acceptable level. Approximately 12' of additional right-of-way from the adjacent vacant parcel may be required along with reconstruction of the frontage road. |
| Intersection #10<br>Los Osos Valley Road/Auto Park Way | Auto | The Project added traffic increases the delay at this intersection to be unacceptable LOS E during the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. Signalization will also provide acceptable operations. |
| Intersection #11<br>Los Osos Valley Road/Calle Joaquin | Auto (Queue) | Addition of project traffic would result in a new impact to the southbound left queue in the AM and PM peak hours. | Recently constructed LOVR improvements improve this condition to an acceptable level. |
| Intersection #12<br>Los Osos Valley Road/U.S. 101 SB Ramps | Auto (Queue) | Addition of project traffic would:<br>•Exacerbate the westbound left queue in the AM and PM peak hours.<br>•Exacerbate the southbound through queue in the AM peak hour.<br>•Exacerbate the southbound right queue in the AM and PM peak hours. | •Extension of the off ramp left turn pocket to 320' would improve this condition to an acceptable level.<br><br>•Extension of the southbound through storage and southbound right turn pocket is not feasible due to intersection spacing. However, traffic queues between the two intersections are managed through the signal coordination of the Calle Joaquin and 101 SB intersections. |

**TABLE 41: EXISTING PLUS PROJECT MITIGATION MEASURES SUMMARY**

| Existing Plus Project Significant Impact Location | Mode | Impact | Mitigation Measure |
|---|---|---|---|
| Intersection #13 Los Osos Valley Road/U.S. 101 NB Ramps | Auto (Queue) | Addition of project traffic would:<br>•Exacerbate the southbound through queue in the AM peak hour.<br>•Exacerbate the southbound right queue in the AM and PM peak hours. | Recently constructed LOVR improvements improve the southbound through queue impact to an acceptable level, and construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Intersection #14 Los Osos Valley Road/S. Higuera Street | Auto (Queue) | Addition of project traffic would exacerbate the eastbound right queue in the AM and PM peak hours. | Extension of the eastbound right turn pocket to 180' would improve this condition to an acceptable level, but may require additional right-of-way. |
| Intersection #16 S. Higuera St/Tank Farm Rd | Auto (Queue) | Addition of project traffic would exacerbate the northbound right queue in the AM peak hour. | Extension of the northbound right turn pocket to 160' would improve this condition to an acceptable level, but may require additional right-of-way. |
| Intersection #18 S. Higuera St/Prado Rd | Auto (Queue) | Addition of project traffic would:<br>•Exacerbate the northbound left queue in the AM peak hour. | Widening Prado Road to add a second NB left would improve this condition to acceptable levels. |
| Intersection #25 Dalidio Dr/SC Project Dwy | Auto | The Project added traffic increases the delay at this intersection to be unacceptable LOS E during the PM peak hour. | • Install a Multi-lane modern roundabout |
| Segment #1: Madonna Rd WB - Oceanaire Dr to Los Osos Valley Rd | Auto | The Project added traffic increases the delay on this segment to be unacceptable LOS E during the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |
| Segment #2: Madonna Rd EB - Oceanaire Dr to Dalidio Dr | Auto | The Project added traffic increases the delay on this segment to be unacceptable LOS E during the AM and | Improvements to Intersection #3 (Madonna Rd/Dalidio Dr) mitigates the impact to this segment. |

**TABLE 41: EXISTING PLUS PROJECT MITIGATION MEASURES SUMMARY**

| Existing Plus Project Significant Impact Location | Mode | Impact | Mitigation Measure |
|---|---|---|---|
| | | PM peak hours. | |
| Segment #3: Madonna Rd WB - El Mercado to Dalildio Dr | Transit | The Project added traffic increases the delay on this segment to be unacceptable LOS E during the AM peak hour. | • Decrease Transit Route 5 headway from 30 minutes to 25 minutes. |
| Segment #6: Madonna Rd EB - US 101 NB Ramps to Higuera St | Transit | The Project added traffic increases the delay on this segment to be unacceptable LOS E during the PM peak hour. | • Decrease Transit Route 5 headway from 30 minutes to 25 minutes. |
| Segment #13: Los Osos Valley Rd NB - Froom Ranch Way to Madonna Rd | Auto | The Project added traffic increases the delay on this segment to be unacceptable LOS E during the PM peak hour. | Construction of the Prado Overcrossing would improve this condition to an acceptable level. |

Table 42 presents the mitigated intersection LOS operations assuming the above mitigation measures to be in place. Table 43 presents the mitigated roadway segment LOS operations assuming the above mitigation measures to be in place.

**TABLE 42:**
**EXISTING PLUS PROJECT – MITIGATED INTERSECTION LOS**

| Intersection # | 3 | | 5 | | 8 | | 9 | | 10 | | 15 | | 25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Madonna Road/ Dalidio Drive | | Madonna Road/ US 101 SB Ramps | | Higuera Street/ South Street | | Los Osos Valley Road/ Froom Ranch Way | | Los Osos Valley Road/ Auto Park Way | | S. Higuera Street/ Suburban Drive | | Dalidio Drive/ SC Project Driveway | |
| Mode | AUTO | | AUTO | | AUTO | | BIKE | | AUTO | | PED | | AUTO | |
| Scenario | v/c | LOS | v/c | LOS | v/c | LOS | Score | LOS | v/c | LOS | v/c | LOS | v/c | LOS |
| *AM PEAK HOUR* | | | | | | | EB | | | | NB | | | |
| Existing | - | A | 1.31 | D | - | C | 3.38 | C | - | B | 2.98 | C | - | - |
| Existing Plus Project | - | B | 0 | C | - | C | 3.40 | C | - | B | 2.99 | C | - | A |
| Significant Impact? | No | | No | | No | | No | | No | | No | | No | |
| *PM PEAK HOUR* | | | | | | | EB | | | | NB | | | |
| Existing | 2.11 | E | - | C | 1.31 | E | 4.39 | E | - | D | 3.60 | D | - | - |
| Existing Plus Project | - | C | - | C | - | C | 4.42 | E | 0.39 | E | 3.61 | D | - | B |
| Significant Impact? | No | | No | | No | | No | | Yes | | No | | No | |

Note: V/C is based on worst movement

## TABLE 43:
## EXISTING PLUS PROJECT – MITIGATED SEGMENT LOS

| Existing Plus Project Multimodal Segment LOS | | | | | Auto Mode | | | | | | Pedestrian Mode | | | | | | Bicycle Mode | | | | | | Transit Mode | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***AM PEAK HOUR*** | | | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | |
| ID | Roadway | From | To | Direction | Auto LOS Threshold | Travel Speed (mph) | LOS | Travel Speed (mph) | LOS | **Significant Impact?** | Ped LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Bike LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Transit LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** |
| 2 | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 27.1 | C | 21.3 | C | No | C | 3.80 | D | 3.88 | D | No | D | 3.57 | D | 3.58 | D | No | D | 4.70 | **E** | 4.74 | **E** | No |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 21.2 | C | 18.7 | C | No | C | 3.52 | D | 3.61 | D | No | D | 3.27 | C | 3.30 | C | No | D | 4.24 | D | 4.20 | D | No |
| 20 | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 5.5 | **F** | 28.6 | B | No | C | 3.04 | C | 3.13 | C | No | D | 3.77 | D | 3.32 | C | No | D | 4.26 | **E** | 4.20 | D | No |

Note: Segment 20 transit is southbound for routes 4 and 5; Segment 21 pedestrian and bicycle service will be further evaluated using off-street facilities methodologies.

| Existing Plus Project Multimodal Segment LOS | | | | | Auto Mode | | | | | | Pedestrian Mode | | | | | | Bicycle Mode | | | | | | Transit Mode | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***PM PEAK HOUR*** | | | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | | | *Existing* | | *Existing Plus Project* | | |
| ID | Roadway | From | To | Direction | Auto LOS Threshold | Travel Speed (mph) | LOS | Travel Speed (mph) | LOS | **Significant Impact?** | Ped LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Bike LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** | Transit LOS Threshold | Segment Score | LOS | Segment Score | LOS | **Significant Impact?** |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 12.7 | **E** | 15.9 | **E** | No | C | 3.79 | D | 3.82 | D | No | D | 3.93 | D | 3.97 | D | No | D | 4.28 | **E** | 4.32 | **E** | No |
| 2 | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 18.9 | D | 20.8 | C | No | C | 3.89 | D | 3.95 | D | No | D | 3.43 | C | 3.45 | C | No | D | 4.51 | **E** | 4.53 | **E** | No |
| 6 | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 13.3 | **E** | 12.4 | **E** | No | C | 3.72 | D | 3.77 | D | No | D | 3.53 | D | 3.59 | D | No | D | 4.18 | D | 4.24 | D | No |
| 13 | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 16.9 | D | 16.8 | D | No | C | 4.04 | **F** | 4.04 | **F** | No | D | 3.46 | C | 3.46 | C | No | D | 4.38 | **E** | 4.38 | **E** | No |
| 20 | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 0.4 | **F** | 18.0 | D | No | C | 3.35 | C | 3.46 | C | No | D | 4.21 | D | 3.42 | C | No | D | 4.09 | D | 4.03 | D | No |

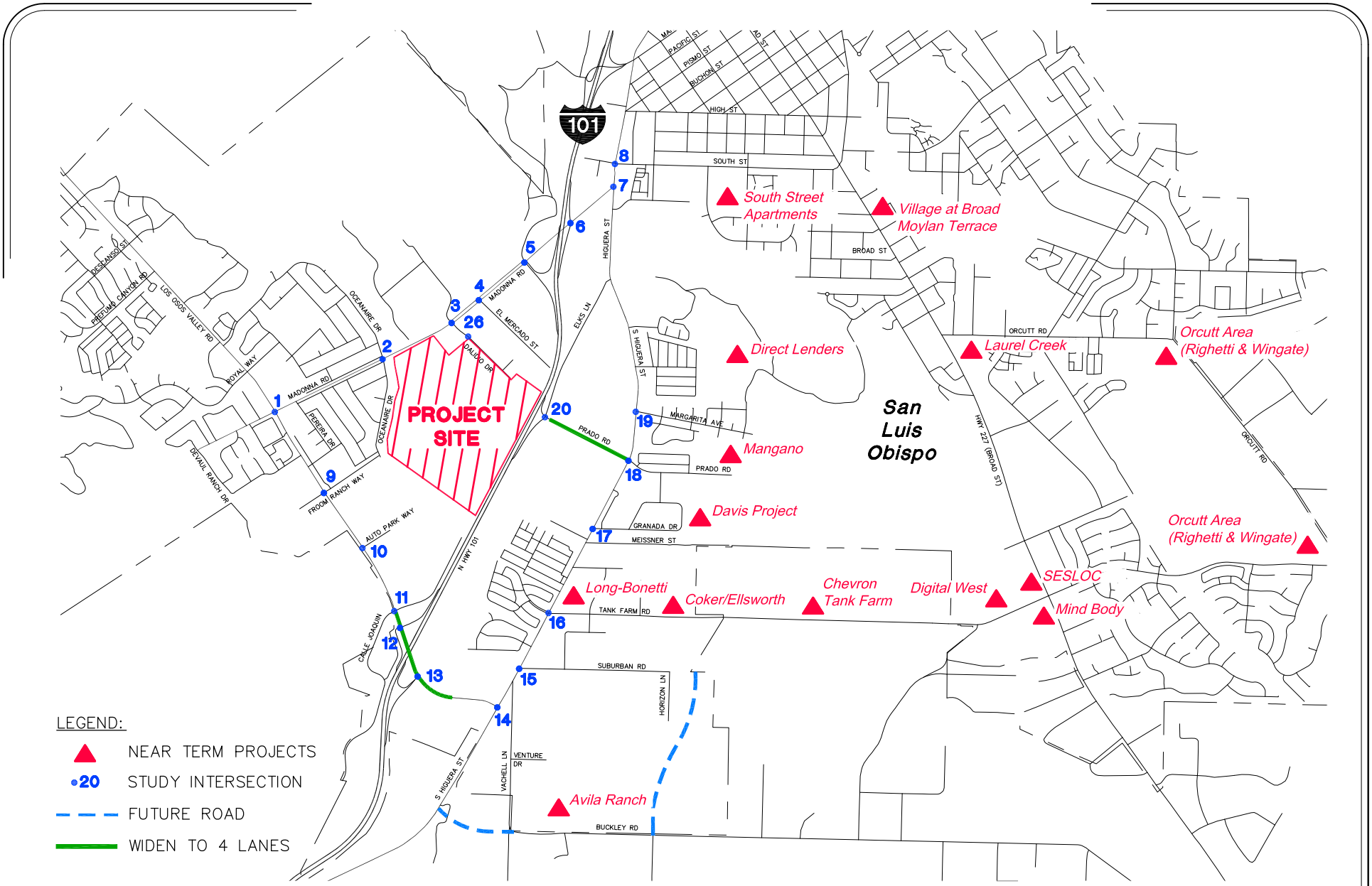
Note: Segment 20 transit is southbound for routes 4 and 5; Segment 21 pedestrian and bicycle service will be further evaluated using off-street facilities methodologies.

# Near Term (Year 2025) Conditions

The Near Term conditions is a scenario in which the City's approved, pending and potential land development projects are assumed to be in place. Based on direction from the City, a volume growth increment for all travel modes have been developed for the 2025 conditions. Vehicular trips are determined utilizing the *Avila Ranch* study completed by Central Coast Transportation Consulting. The volume growth between the Avila Ranch's *Existing* volumes and the *Near Term Plus Project No Business Park* volumes were utilized as a baseline to estimate a growth increment which was added to the Existing volumes shown in Figure 3. Roadway improvements assumed to be in place for the Near Term conditions are as follows:

- Los Osos Valley Road interchange improvements and widening to 4 Lanes between Calle Joaquin and S. Higuera Street with Class II Bike Lanes
- Prado Road widening to 4 lanes between US 101 and S. Higuera Street with Class II Bike Lanes and an additional westbound left turn lane at S. Higuera Street
- Horizon Lane extension between Avila Ranch and Suburban Drive
- Southbound left turn pocket at Prado Road/S. Higuera Street is extended 250' with addition of pedestrian countdown heads with audible/tactile pushbuttons.
- Buckley Road extension to S. Higuera Street

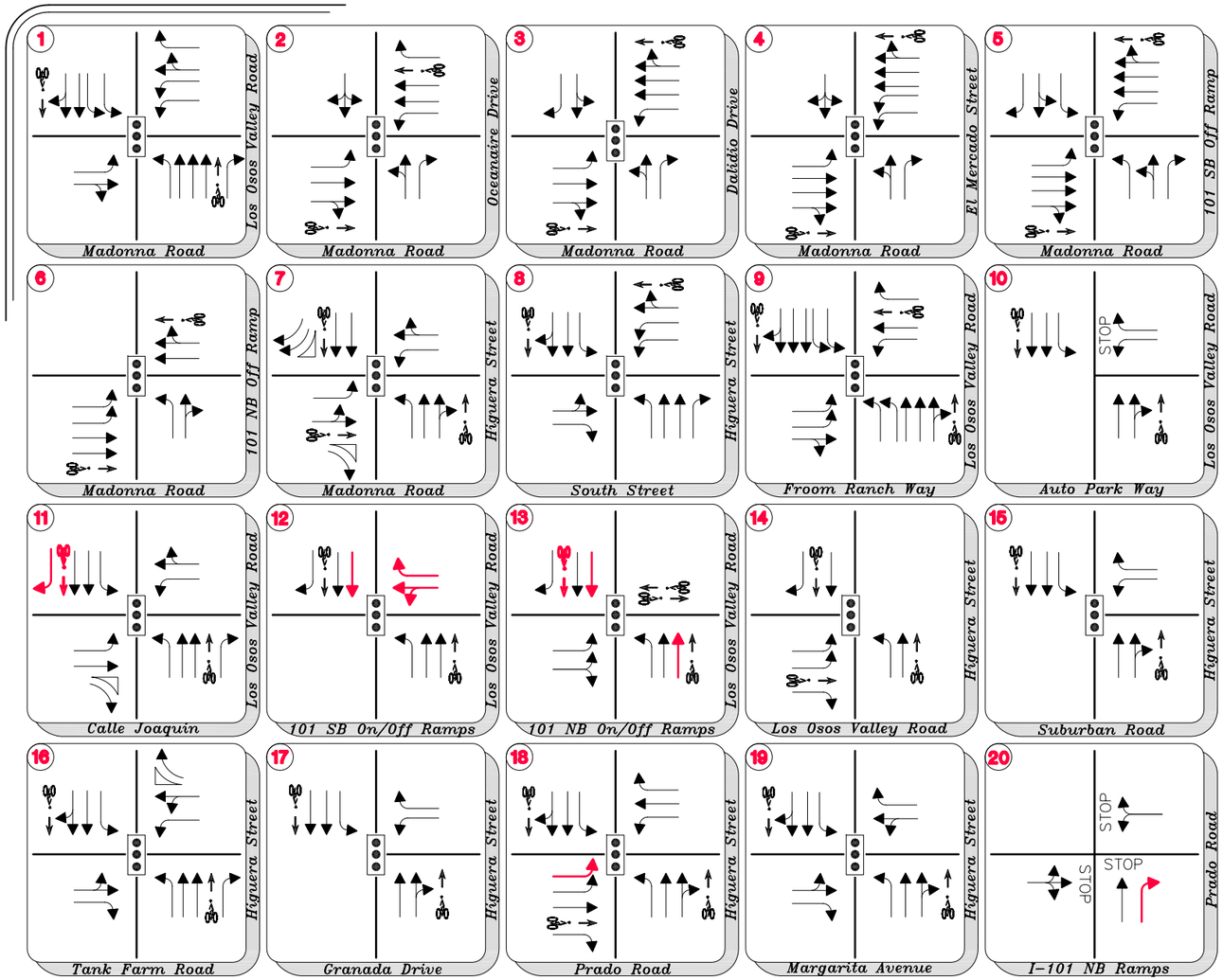
Figure 9 presents the Year 2025 Near Term Approved and Pending Projects that are assumed to be in place for the Near Term conditions analysis scenarios. Figure 10 presents the Near Term lane geometrics and control assuming the above roadway improvements are in place. Figure 11 presents the Year 2025 Near Term peak hour traffic volumes assuming the above roadway improvements are in place, and with buildout of the Near Term Approved and Pending Projects.

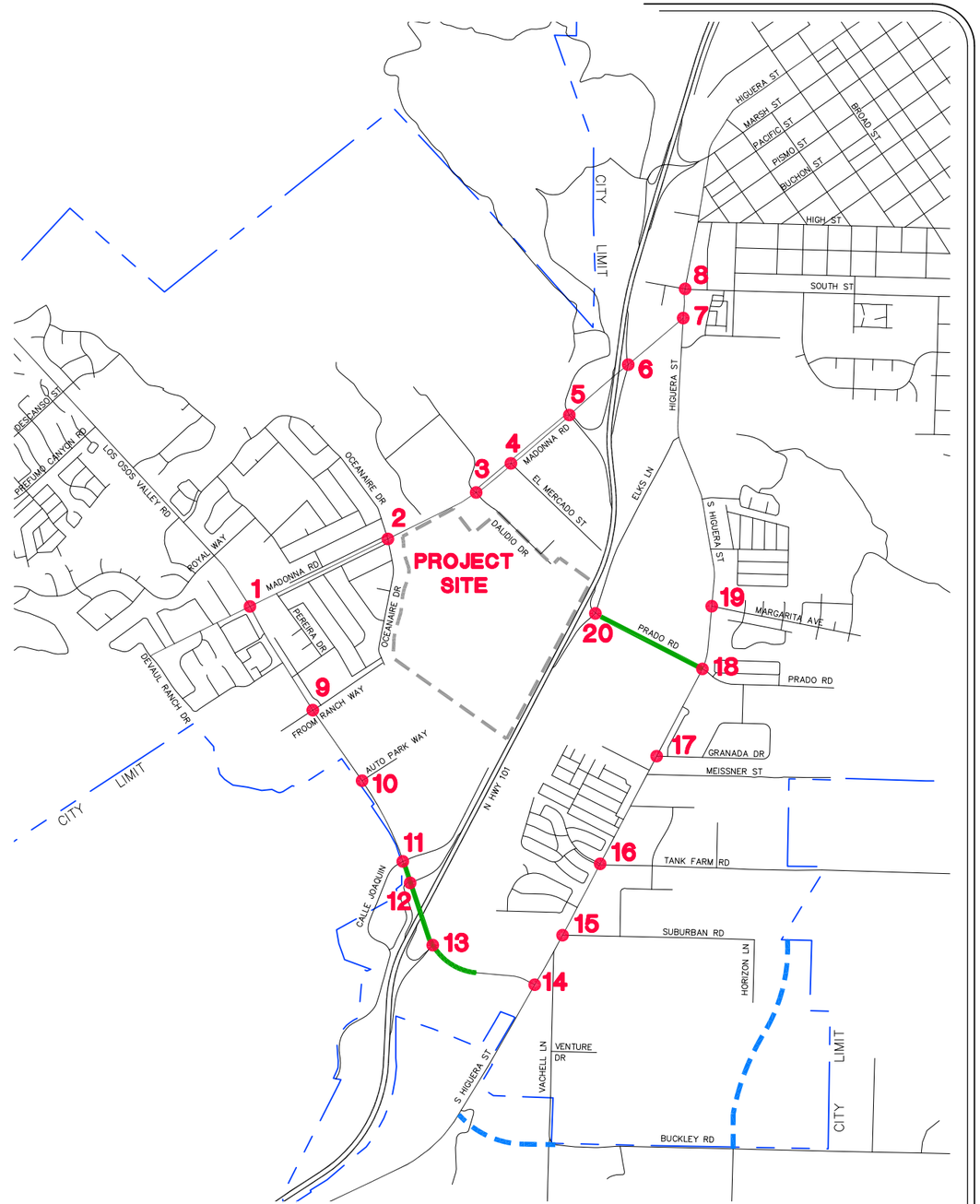



**San Luis Ranch Specific Plan Multimodal TIS**

Figure 9

# Year 2025 Near Term Projects



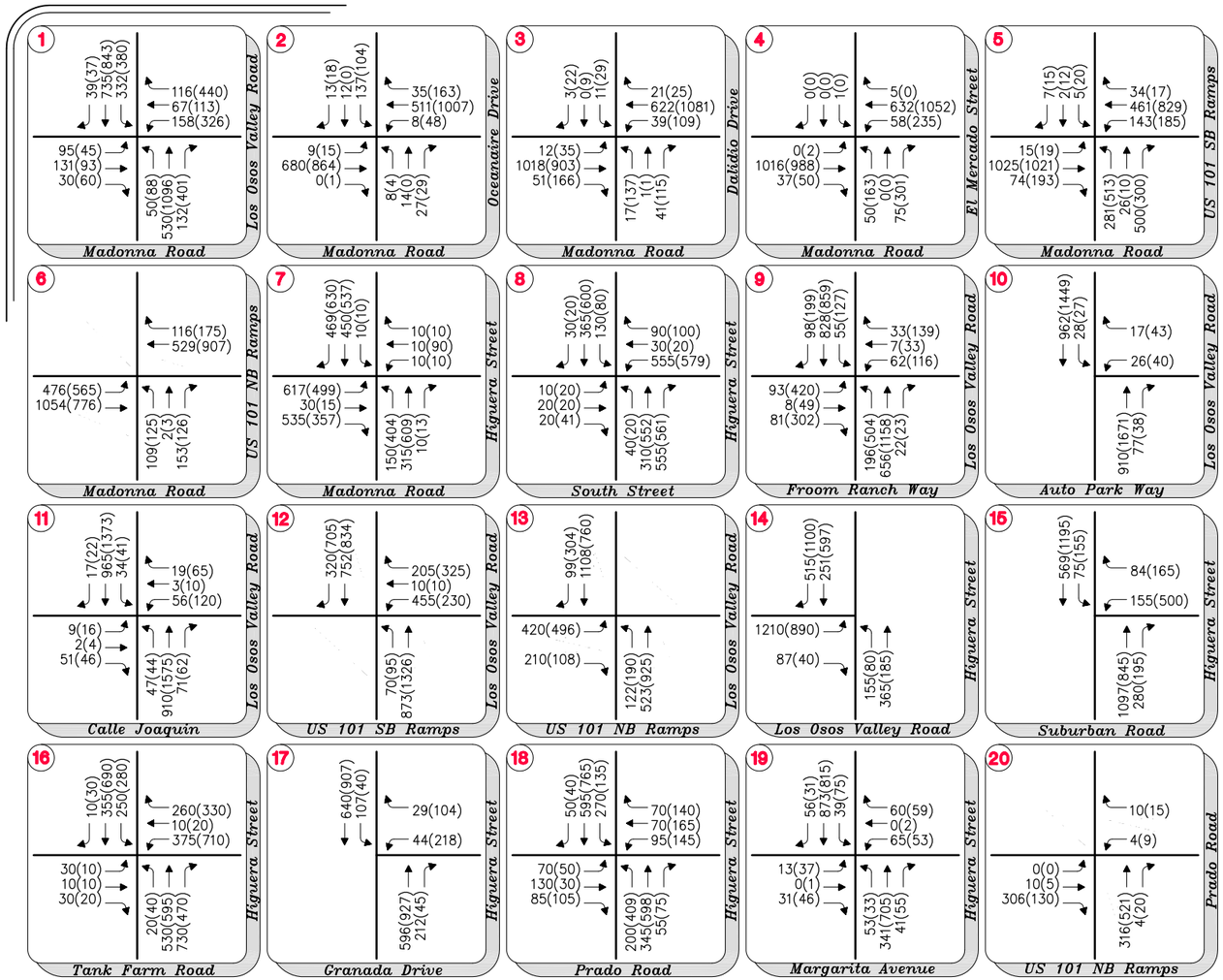

LEGEND:

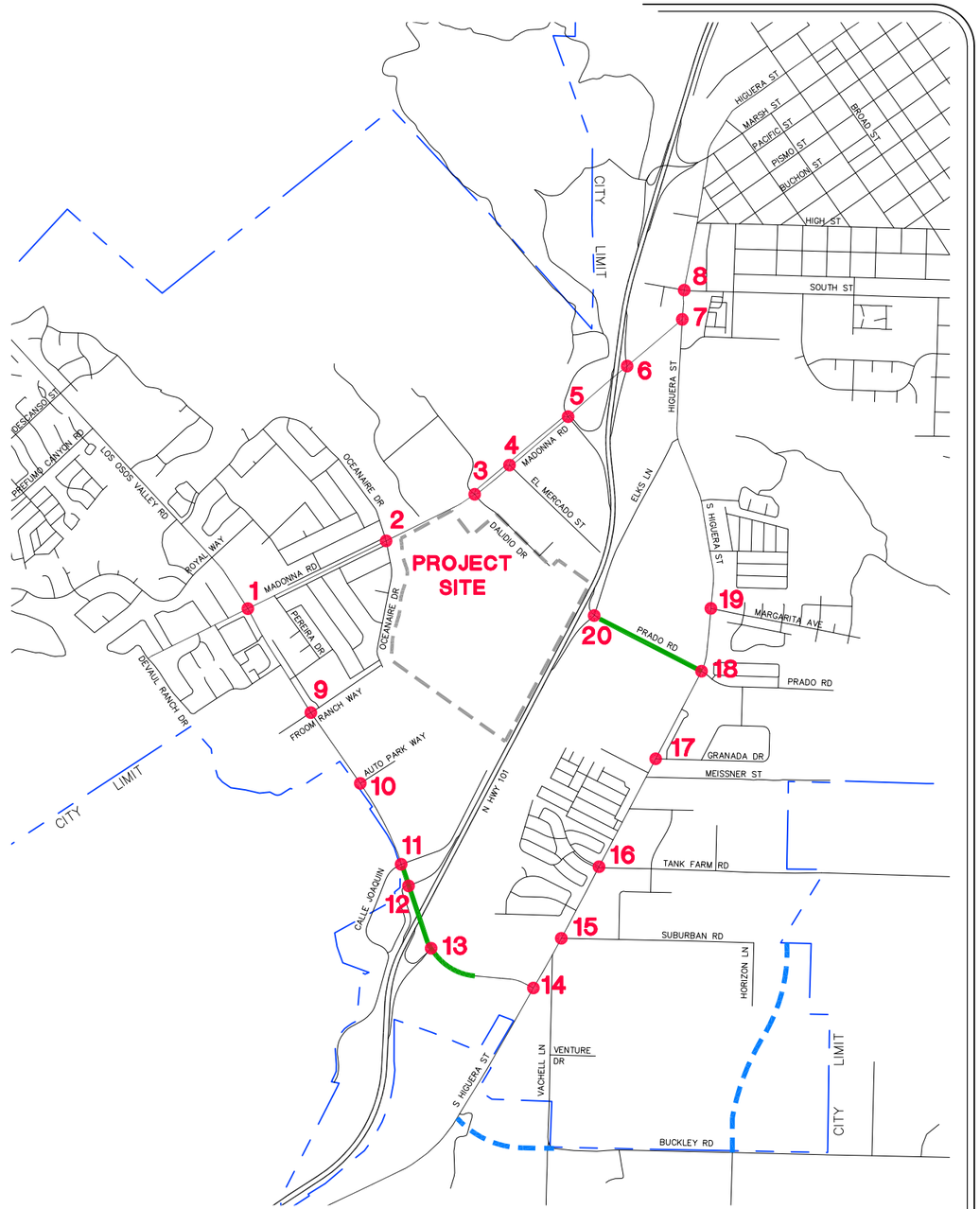
- BICYCLE LANE (CLASS II)
- BICYCLE LANE (CLASS I)
- VEHICLE LANE
- NEW VEHICLE LANE
- NEW ROADWAY
- WIDEN TO 4 LANES

**San Luis Ranch Specific Plan Multimodal TIS**

Figure 10

# Year 2025 Near Term Lane Geometrics and Control




LEGEND:

| | |
|---|---|
| XX | AM PEAK HOUR TRAFFIC VOLUMES |
| (XX) | PM PEAK HOUR TRAFFIC VOLUMES |
| | NEW ROADWAY |
| | WIDEN TO 4 LANES |

**San Luis Ranch Specific Plan Multimodal TIS**

Figure 11

# Year 2025 Near Term Peak Hour Traffic Volumes

# Near Term No Project Conditions Analysis

The Near Term conditions multimodal analysis for the study intersections and segments are presented below.

## Near Term No Project Conditions Intersection Analysis

Table 44 provides a summary of the Near Term conditions vehicular AM and PM peak hour intersection delay and LOS. Table 45 provides a summary of the Near Term pedestrian AM and PM peak hour conditions at the study intersections. Table 46 provides a summary of the Near Term bicycle AM and PM peak hour conditions at the study intersections. Table 47 provides a summary of the Near Term conditions queuing analysis.

**TABLE 44:**
**NEAR TERM NO PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE: AUTOMOBILE ANALYSIS**

| # | Intersection | Control Type[1,2] | Target LOS | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | v/c[3] | Delay | LOS | v/c[3] | Delay | LOS |
| 1 | Madonna Road/Los Osos Valley Road | Signal | D | | 24.8 | C | | 51.8 | D |
| 2 | Madonna Road/Oceanaire Drive | Signal | D | | 21.1 | C | | 17.7 | B |
| 3 | Madonna Road/Dalidio Drive | Signal | D | | 9.8 | A | | 43.1 | D |
| 4 | Madonna Road/El Mercado | Signal | D | | 7.9 | A | | 17.5 | B |
| **5** | **Madonna Road/US 101 SB Ramps/Madonna** | **Signal** | **C** | **1.22** | **44.0** | **D** | | 25.0 | C |
| 6 | Madonna Road/US 101 NB Ramps | Signal | C | | 18.3 | B | | 21.1 | C |
| 7 | Madonna Road/Higuera Street | Signal | D | | 32.7 | C | | 38.5 | D |
| **8** | **Higuera Street/South Street** | **Signal** | **D** | | 27.3 | C | **1.28** | **65.8** | **E** |
| 9 | Los Osos Valley Road/Froom Ranch Way | Signal | D | | 19.8 | B | | 36.4 | D |
| **10** | **Los Osos Valley Road/Auto Park Way** | **TWSC** | **D** | | 19.4 | C | **0.52** | **53.6** | **F** |
| 11 | Los Osos Valley Road/Calle Joaquin | Signal | D | | 9.0 | A | | 6.3 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Signal | C | | 21.0 | C | | 20.0 | B |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Signal | C | | 16.3 | B | | 21.0 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | Signal | D | | 22.2 | C | | 29.3 | C |
| 15 | S. Higuera Street/Suburban Drive | Signal | D | | 8.5 | A | | 19.9 | B |
| **16** | **S. Higuera Street/Tank Farm Road** | **Signal** | **D** | **1.31** | **72.2** | **E** | | 25.1 | C |
| 17 | S. Higuera Street/Granada Drive | Signal | D | | 8.3 | A | | 11.5 | B |
| 18 | S. Higuera Street/Prado Road | Signal | D | | 20.7 | C | | 27.8 | C |
| 19 | S. Higuera Street/Margarita Avenue | Signal | D | | 12.1 | B | | 14.6 | B |
| 20 | Prado Road/US 101 NB Ramps | AWSC | C | | 10.8 | B | | 12.1 | B |

*Notes:*
*1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout*
*2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC,*
*3. Volume to Capacity Ratio (v/c) is for worst movement delay, for unacceptable LOS only*

## TABLE 45:
## NEAR TERM CONDITIONS INTERSECTION LEVEL OF SERVICE: PEDESTRIAN ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Ped. Crosswalk Score | AM Peak Hour Ped. Crosswalk LOS | PM Peak Hour Ped. Crosswalk Score | PM Peak Hour Ped. Crosswalk LOS |
|---|---|---|---|---|---|---|---|
| 1 | **Madonna Road/Los Osos Valley Road** | EB | C | 2.11 | B | 2.13 | B |
| | | WB | C | 2.88 | C | 3.29 | C |
| | | **NB** | **C** | 3.11 | C | **3.51** | **D** |
| | | SB | C | 3.20 | C | 3.29 | C |
| 2 | Madonna Road/Oceanaire Drive | EB | C | 2.70 | B | 2.91 | C |
| | | WB | C | 3.08 | C | 3.34 | C |
| | | NB | C | 1.99 | A | 2.00 | A |
| | | SB | C | 1.81 | A | 1.85 | A |
| 3 | Madonna Road/Dalidio Drive | EB | C | 2.96 | C | 3.26 | C |
| | | WB | C | 2.98 | C | 3.07 | C |
| | | NB | C | 2.05 | B | 2.37 | B |
| | | SB | C | 1.96 | A | 2.00 | A |
| 4 | Madonna Road/El Mercado | EB | C | n/a | - | n/a | - |
| | | WB | C | 3.05 | C | 3.16 | C |
| | | NB | C | 2.28 | B | 2.64 | B |
| | | SB | C | 1.71 | A | 1.72 | A |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | C | 3.00 | C | 3.14 | C |
| | | WB | C | n/a | - | n/a | - |
| | | NB | C | 2.78 | C | 2.72 | B |
| | | SB | C | 2.17 | B | 2.18 | B |
| 6 | Madonna Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | 2.88 | C | 2.82 | C |
| | | NB | C | 2.01 | B | 2.01 | B |
| | | SB | C | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | C | 2.93 | C | 3.10 | C |
| | | WB | C | 2.01 | B | 2.02 | B |
| | | NB | C | 2.79 | C | 2.91 | C |
| | | SB | C | n/a | - | n/a | - |
| 8 | Higuera Street/South Street | EB | C | 2.03 | B | 2.06 | B |
| | | WB | C | 2.78 | C | 2.80 | C |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.51 | B | 2.60 | B |
| 9 | Los Osos Valley Road/Froom Ranch Way | EB | C | 2.51 | B | 2.88 | C |
| | | WB | C | 2.39 | B | 2.59 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 3.10 | C | 3.33 | C |
| 10 | Los Osos Valley Road/Auto Park Way | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | C | 2.47 | B | 2.28 | B |
| | | WB | C | 2.07 | B | 2.16 | B |
| | | NB | C | 3.02 | C | 3.29 | C |
| | | SB | C | 3.00 | C | 3.26 | C |
| 12 | Los Osos Valley Road/US 101 SB Ramps | EB | C | 1.85 | A | 2.23 | B |
| | | WB | C | 2.14 | B | 2.08 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | C | 2.36 | B | 2.36 | B |
| | | NB | C | 2.78 | C | 2.79 | C |
| | | SB | C | n/a | - | n/a | - |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | C | 2.99 | C | 2.91 | C |
| | | NB | C | 2.38 | B | 2.41 | B |
| | | SB | C | n/a | - | n/a | - |
| 15 | S. Higuera Street/Suburban Drive | WB | C | 2.33 | B | 2.57 | B |
| | | **NB** | **C** | 3.23 | C | **3.96** | **D** |
| | | SB | C | 2.88 | C | 3.02 | C |
| 16 | S. Higuera Street/Tank Farm Road | EB | C | 2.03 | B | 2.02 | B |
| | | WB | C | 3.01 | C | 3.19 | C |
| | | NB | C | 3.46 | C | 3.38 | C |
| | | SB | C | 2.77 | C | 2.91 | C |
| 17 | S. Higuera Street/Granada Drive | WB | C | 2.11 | B | 2.18 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.71 | B | 2.89 | C |
| 18 | S. Higuera Street/Prado Road | EB | C | 2.66 | B | 2.72 | B |
| | | WB | C | 2.40 | B | 2.48 | B |
| | | NB | C | 2.90 | C | 3.19 | C |
| | | SB | C | 2.86 | C | 2.92 | C |
| 19 | S. Higuera Street/Margarita Avenue | EB | C | 2.28 | B | 2.09 | B |
| | | WB | C | 2.13 | B | 2.20 | B |
| | | NB | C | 2.85 | C | 2.93 | C |
| | | SB | C | 2.76 | C | 2.90 | C |
| 20 | Prado Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.*

*HCM 2010 Methodologies for the pedestrian mode at two-way stop-controlled intersections is limited to the uncontrolled crossing. No methodology exists for evaluating pedestrian performance for the stop controlled approach (cross-street). However, it is reasoned that this type of control has negligible influence on pedestrian service along the segment.*

## TABLE 46:
## NEAR TERM CONDITIONS INTERSECTION LEVEL OF SERVICE: BICYCLE ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Bicycle LOS Score | AM Peak Hour Bicycle LOS LOS | PM Peak Hour Bicycle LOS Score | PM Peak Hour Bicycle LOS LOS |
|---|---|---|---|---|---|---|---|
| 1 | Madonna Road/Los Osos Valley Road | EB | D | 3.28 | C | 3.17 | C |
| | | WB | D | 3.36 | C | 4.25 | D |
| | | NB | D | 1.69 | A | 2.17 | B |
| | | SB | D | 2.69 | B | 2.68 | B |
| 2 | Madonna Road/Oceanaire Drive | EB | D | 2.71 | B | 2.89 | C |
| | | WB | D | 1.15 | A | 1.75 | A |
| | | NB | D | 2.74 | B | 2.72 | B |
| | | SB | D | 2.22 | B | 2.15 | B |
| 3 | Madonna Road/Dalidio Drive | EB | D | 2.14 | B | 2.07 | B |
| | | WB | D | 1.54 | A | 1.80 | A |
| | | NB | D | 3.00 | C | 3.32 | C |
| | | SB | D | 2.84 | C | 2.92 | C |
| 4 | Madonna Road/El Mercado | EB | D | 1.77 | A | 1.70 | A |
| | | WB | D | 1.73 | A | 2.02 | B |
| | | NB | D | 3.26 | C | 3.81 | D |
| | | SB | D | 3.03 | C | 3.03 | C |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | D | 1.96 | A | 1.97 | A |
| | | WB | D | 1.66 | A | 1.86 | A |
| | | NB | D | n/a | - | n/a | - |
| | | SB | D | 2.90 | C | 2.96 | C |
| 6 | Madonna Road/US 101 NB Ramps | EB | D | 2.62 | B | 2.25 | B |
| | | WB | D | 1.67 | A | 1.96 | A |
| | | NB | D | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | D | 3.36 | C | 2.74 | B |
| | | WB | D | 2.46 | B | 2.60 | B |
| | | NB | D | 1.80 | A | 2.27 | B |
| | | SB | D | 2.29 | B | 2.48 | B |
| 8 | Higuera Street/South Street | EB | D | 2.72 | B | 2.78 | C |
| | | WB | D | 2.75 | B | 2.83 | C |
| | | NB | D | 3.01 | C | 3.24 | C |
| | | SB | D | 1.58 | A | 1.75 | A |
| **9** | **Los Osos Valley Road/Froom Ranch Way** | **EB** | **D** | 3.42 | C | **4.42** | **E** |
| | | WB | D | 1.86 | A | 2.50 | B |
| | | NB | D | 1.84 | A | 2.28 | B |
| | | SB | D | 1.78 | A | 1.87 | A |
| 10 | Los Osos Valley Road/Auto Park Way | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | D | 2.99 | C | 2.99 | C |
| | | WB | D | 3.08 | C | 3.27 | C |
| | | NB | D | 1.54 | A | 2.02 | B |
| | | SB | D | 0.50 | A | 0.79 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | WB | D | n/a | - | n/a | - |
| | | NB | D | 2.86 | C | 3.20 | C |
| | | SB | D | 1.66 | A | 1.98 | A |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | NB | D | 1.99 | A | 2.35 | B |
| | | SB | D | 2.90 | C | 2.74 | B |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | D | 2.18 | B | 1.85 | A |
| | | NB | D | 2.20 | B | 1.74 | A |
| | | SB | D | 2.61 | B | 4.21 | D |
| 15 | S. Higuera Street/Suburban Drive | WB | D | 1.08 | A | 1.81 | A |
| | | NB | D | 2.43 | B | 2.09 | B |
| | | SB | D | 1.81 | A | 2.41 | B |
| 16 | S. Higuera Street/Tank Farm Road | EB | D | 2.72 | B | 2.67 | B |
| | | WB | D | 2.64 | B | 3.32 | C |
| | | NB | D | 2.39 | B | 2.20 | B |
| | | SB | D | 1.78 | A | 2.10 | B |
| 17 | S. Higuera Street/Granada Drive | WB | D | 2.63 | B | 3.07 | C |
| | | NB | D | 1.90 | A | 2.05 | B |
| | | SB | D | 1.99 | A | 2.17 | B |
| 18 | S. Higuera Street/Prado Road | EB | D | 2.48 | B | 2.30 | B |
| | | WB | D | 2.93 | C | 3.31 | C |
| | | NB | D | 1.76 | A | 2.18 | B |
| | | SB | D | 2.04 | B | 2.06 | B |
| 19 | S. Higuera Street/Margarita Avenue | EB | D | 2.49 | B | 2.57 | B |
| | | WB | D | 2.73 | B | 2.71 | B |
| | | NB | D | 1.68 | A | 1.99 | A |
| | | SB | D | 2.23 | B | 2.20 | B |
| 20 | Prado Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating bicycle performance at two-way stop-controlled intersections. However, it is reasoned that this type of control has negligible influence on bicycle service along the segment for stop controll on the cross-street.*

**TABLE 47:**
**NEAR TERM CONDITIONS 95TH PERCENTILE QUEUING ANALYSIS**

| *Intersection* | | | | | 95th Percentile Queue/Lane (ft) | |
|---|---|---|---|---|---|---|
| ID | Location | Movement | No. Lanes | Total Storage (ft)[1] | AM Peak Hour | PM Peak Hour |
| 1 | Madonna Road/Los Osos Valley Road | Westbound Through/Right | 1 | 340 | 99 | **3822** |
| | | Westbound Right | 1 | 300 | 60 | **350** |
| | | Northbound Left | 1 | 200 | 70 | **253** |
| | | Northbound Right | 1 | 175 | 119 | **248** |
| 2 | Madonna | Westbound Right | 1 | 100 | 36 | **139** |
| 5 | Madonna Road/US 101 | Westbound Left | 1 | 260 | 160 | **322** |
| 7 | Madonna Road/Higuera Street | Eastbound Right | 1 | 150 | **221** | **192** |
| | | Northbound Left | 1 | 160 | 153 | **361** |
| 8 | Higuera Street/South Street | Westbound Left | 2 | 240 | **303** | **287** |
| | | Northbound Left | 1 | 60 | **103** | **77** |
| | | Northbound Right | 1 | 60 | **135** | **143** |
| | | Southbound Left | 1 | 70 | **115** | **118** |
| 9 | Los Osos Valley | Westbound Right | 1 | 50 | 50 | **81** |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Westbound Left/Through | 1 | 180 | **256** | **187** |
| | | Southbound Through | 1 | 240 | **275** | **284** |
| | | Southbound Right | 1 | 125 | **188** | **221** |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Eastbound Left/Right | 1 | 625 | 325 | 288 |
| | | Northbound Left | 1 | 395 | 134 | 181 |
| | | Northbound Through | 1 | - | 119 | 164 |
| | | Southbound Through | 1 | 865 | 542 | 257 |
| | | Southbound Right | 1 | 130 | **215** | **187** |
| 14 | S. Higuera Street/Los | Eastbound Right | 1 | 90 | **202** | **154** |
| 15 | S. Higuera Street/Suburban Drive | Westbound Right | 1 | 170 | 69 | **249** |
| | | Southbound Left | 1 | 200 | 158 | **272** |
| 16 | S. Higuera Street/Tank Farm Road | Northbound Right | 1 | 100 | **197** | **182** |
| | | Southbound Left | 1 | 165 | **210** | **231** |
| 17 | S. Higuera | Southbound Left | 1 | 80 | **94** | 77 |
| 18 | S. Higuera Street/Prado Road | Westbound Left | 1 | 105 | **110** | **140** |
| | | Northbound Left | 1 | 100 | **158** | **173** |
| 19 | S. Higuera Street/Margarita Avenue | Northbound Left | 1 | 60 | **75** | 57 |
| | | Southbound Left | 1 | 60 | **68** | **91** |

*Notes:* ***1. Bolded entries indicate queues exceed available storage***

2. Storage Length of " - " represents a lane which exceeds 900 feet, usually a through lane.

3. For Movements with more than one lane, the maximum of the 95th percentile queue is reported.

4. * Represents storage lengths for one lane; second lane is a left or right trap lane.

As shown in Table 44 above, the intersections of Madonna Road/US 101 SB Ramps/Madonna Inn, Higuera Street/South Street, Los Osos Valley Road/Auto Park Way, and S. Higuera Street/Tank Farm Road are projected to operate at unacceptable conditions during Near Term conditions. The northbound and southbound approaches experience long delays. Pedestrian and bicycle analysis shows acceptable conditions at the study intersections, except for the intersections of Los Osos Valley Road/Madonna Road and Los Osos Valley Road/Froom Ranch Way, respectively. Queuing analysis results show numerous locations in which the 95th percentile queue exceeds the available storage capacity during Near Term conditions.

## Near Term No Project Conditions Segment Analysis

Table 48 provides a summary of the Near Term vehicular AM and PM peak hour conditions for the study segments. Table 49 provides a summary of the Near Term pedestrian AM and PM peak hour conditions for the study segments. Table 50 provides a summary of the Near Term bicycle AM and PM peak hour conditions for the study segments. Table 51 provides a summary of the Near Term transit AM and PM peak hour conditions for the study segments. Table 52 provides a summary of the Near Term freeway segments analysis for AM and PM peak hour conditions for the study segments along US 101.

## TABLE 48:
## NEAR TERM CONDITIONS SEGMENT LEVEL OF SERVICE: AUTOMOBILE ANALYSIS

| AUTO SEGMENT LOS | | | | | | AM PEAK | | | | PM PEAK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | 22.1 | 42.1 | 52% | C | **11.8** | **42.1** | **28%** | **F** |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | C | 27.5 | 42.1 | 65% | C | 29.3 | 42.1 | 70% | B |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | C | 23.0 | 40.8 | 56% | C | 24.4 | 40.7 | 60% | C |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | 27.1 | 40.7 | 67% | C | **18.7** | **40.8** | **46%** | **D** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | 19.8 | 34.1 | 58% | C | **13.9** | **34.8** | **40%** | **E** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | 26.5 | 38.2 | 69% | B | **12.5** | **34.6** | **36%** | **E** |
| 4 | Madonna Rd | US 101 SB Ramps | El Mercado | WB | C | 31.1 | 37.9 | 82% | B | 22.3 | 37.3 | 60% | C |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | 21.3 | 37.8 | 56% | C | **18.4** | **37.7** | **49%** | **D** |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | C | 28.6 | 37.8 | 76% | B | 22.7 | 37.8 | 60% | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | C | 33.0 | 37.8 | 87% | A | 33.6 | 37.8 | 89% | A |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **11.2** | **37.2** | **30%** | **E** | **12.9** | **37.2** | **35%** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **13.1** | **37.2** | **35%** | **E** | **10.4** | **37.2** | **28%** | **F** |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | C | 34.0 | 44.5 | 76% | B | 33.2 | 44.5 | 75% | B |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | C | 33.0 | 44.8 | 74% | B | 33.3 | 44.8 | 74% | B |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **16.2** | **38.9** | **42%** | **D** | **11.6** | **38.9** | **30%** | **F** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | 22.7 | 38.9 | 58% | C | **19.1** | **38.9** | **49%** | **D** |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | C | 33.5 | 41.8 | 80% | B | 29.3 | 41.8 | 70% | B |
| | S. Higuera St | Granada Dr | Prado Rd | NB | C | 21.6 | 41.9 | 52% | C | 24.1 | 41.9 | 57% | C |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | C | 42.3 | 41.6 | 102% | A | 24.7 | 42.6 | 58% | C |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 29.7 | 41.6 | 71% | B | 26.8 | 42.6 | 63% | C |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | C | 27.1 | 42.4 | 64% | C | 21.6 | 41.2 | 52% | C |
| | **S. Higuera St** | **Suburban Drive** | **Tank Farm Road** | **NB** | **C** | **17.8** | **42.5** | **42%** | **D** | **16.3** | **41.3** | **39%** | **E** |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **20.4** | **42.1** | **49%** | **D** | **13.5** | **39.1** | **34%** | **E** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | 23.8 | 42.0 | 57% | C | **19.1** | **39.0** | **49%** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | 24.0 | 41.9 | 57% | C | **16.9** | **41.8** | **41%** | **D** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | 20.9 | 41.8 | 50% | C | **15.1** | **41.8** | **36%** | **E** |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | C | 29.1 | 43.0 | 68% | B | 30.5 | 43.0 | 71% | B |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | C | 30.0 | 43.2 | 69% | B | 22.9 | 43.2 | 53% | C |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **6.1** | **32.1** | **19%** | **F** | **13.2** | **32.1** | **41%** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | 16.2 | 31.1 | 52% | C | **14.1** | **31.1** | **45%** | **D** |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **C** | 23.5 | 37.7 | 62% | C | **17.5** | **37.7** | **46%** | **D** |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | C | 20.3 | 37.4 | 54% | C | 32.2 | 37.4 | 86% | A |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **17.5** | **39.4** | **45%** | **D** | **15.8** | **39.4** | **40%** | **D** |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | C | 24.5 | 39.2 | 63% | C | 27.0 | 39.2 | 69% | B |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 19.7 | 39.1 | 50% | C | 23.1 | 39.1 | 59% | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 23.4 | 39.0 | 60% | C | 21.7 | 39.0 | 56% | C |
| 19 | **Froom Ranch Wa** | **End** | **Los Osos Valley** | **WB** | **C** | **18.0** | **37.7** | **48%** | **D** | **13.0** | **37.9** | **34%** | **E** |
| | Froom Ranch Wa | Los Osos Valley | End | EB | C | 35.5 | 38.1 | 93% | A | 34.6 | 37.4 | 92% | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | C | 21.7 | 31.2 | 70% | B | 21.6 | 31.2 | 69% | B |
| | **Dalidio Dr** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **6.1** | **31.1** | **20%** | **F** | **0.6** | **31.1** | **2%** | **F** |

**TABLE 49:**
**NEAR TERM CONDITIONS SEGMENT LEVEL OF SERVICE: PEDESTRIAN ANALYSIS**

| PEDESTRIAN SEGMENT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Average Ped. Space ($ft^2$/p) | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | **6090** | **3.52** | **D** | **3.86** | **D** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **C** | **17482** | **3.93** | **D** | **4.06** | **D** |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **C** | **84000** | **3.62** | **D** | **3.97** | **D** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | **26250** | **3.80** | **D** | **3.88** | **D** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | **37450** | **3.53** | **D** | **3.86** | **D** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | **52920** | **3.68** | **D** | **3.75** | **D** |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **C** | **26250** | **3.62** | **D** | **3.79** | **D** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | **27915** | **3.70** | **D** | **3.77** | **D** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **C** | **No Peds** | **3.69** | **D** | **3.86** | **F** |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **C** | **No Peds** | **4.04** | **D** | **3.95** | **D** |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **25200** | **3.63** | **D** | **3.80** | **D** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **19838** | **3.84** | **D** | **3.76** | **D** |
| 7 | **S. Higuera St** | **Madonna Rd** | **Margarita Ave** | **SB** | **C** | **23247** | **3.86** | **D** | **3.88** | **D** |
| | **S. Higuera St** | **Margarita Ave** | **Madonna Rd** | **NB** | **C** | **5398** | **3.67** | **D** | **3.90** | **D** |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **40979** | **3.71** | **D** | **3.73** | **D** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | **21700** | **3.55** | **D** | **3.71** | **D** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **C** | **9292** | **3.65** | **D** | **3.77** | **D** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | C | 8400 | 3.26 | C | **3.52** | **D** |
| 10 | **S. Higuera St** | **Granada Dr** | **Tank Farm Road** | **SB** | **C** | **46305** | **3.62** | **D** | **3.80** | **D** |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 49140 | 3.26 | C | 3.36 | C |
| 11 | **S. Higuera St** | **Tank Farm Road** | **Suburban Drive** | **SB** | **C** | **12600** | **3.66** | **D** | **3.96** | **D** |
| | **S. Higuera St** | **Suburban Drive** | **Tank Farm Road** | **NB** | **C** | **31500** | **3.66** | **D** | **3.56** | **D** |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **39312** | **3.64** | **D** | **4.01** | **D** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | **43533** | **4.00** | **D** | **4.05** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | **21833** | **3.86** | **D** | **3.99** | **D** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **0** | **3.74** | **F** | **4.19** | **F** |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **C** | **27300** | **3.84** | **D** | **4.05** | **D** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **C** | **22050** | **3.75** | **D** | **4.09** | **D** |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **44100** | **3.69** | **D** | **3.70** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | **63000** | **3.66** | **D** | **4.01** | **D** |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **C** | **No Peds** | **3.93** | **D** | **3.91** | **D** |
| | **Los Osos Valley** | **US 101 NB Ramps** | **US 101 SB Ramps** | **NB** | **C** | **53928** | **3.82** | **D** | 3.27 | C |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **46575** | **3.94** | **D** | **3.78** | **D** |
| | **Los Osos Valley** | **S. Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **1680** | **3.88** | **D** | **4.27** | **E** |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 56133 | 2.76 | C | 2.84 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 3019 | 3.44 | C | 3.42 | C |
| 19 | **Froom Ranch Wa** | **End** | **Los Osos Valley** | **WB** | **C** | **No Peds** | 3.32 | C | **3.53** | **D** |
| | Froom Ranch Wa | Los Osos Valley | End | EB | C | 75600 | 1.67 | A | 1.81 | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | C | 56700 | 1.46 | A | 1.49 | A |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | C | 73710 | 3.04 | C | 3.38 | C |

**TABLE 50:**
**NEAR TERM CONDITIONS SEGMENT LEVEL OF SERVICE: BICYCLE ANALYSIS**

| BICYCLE SEGMENT LOS | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 3.60 | D | 4.13 | D |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 3.73 | D | 3.78 | D |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 3.14 | C | 3.23 | C |
| | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 3.56 | D | 3.43 | C |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 3.29 | C | 3.21 | C |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | 3.38 | C | 3.39 | C |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | 3.96 | D | **4.35** | **E** |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 3.61 | D | 3.62 | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 3.31 | C | 3.36 | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 3.37 | C | 3.31 | C |
| 6 | Madonna Rd | Higuera St | US 101 NB Ramps | WB | D | 3.50 | D | 3.56 | D |
| | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 3.69 | D | 3.52 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 3.90 | D | 3.90 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 4.09 | D | 4.18 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 3.67 | D | 3.67 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 3.90 | D | 3.96 | D |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 3.88 | D | 3.91 | D |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 3.45 | C | 3.53 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 4.13 | D | 4.19 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 3.52 | D | 3.55 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 3.35 | C | 3.46 | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 3.46 | C | 3.43 | C |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 3.28 | C | 3.92 | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 3.94 | D | 3.88 | D |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 3.72 | D | 3.74 | D |
| | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 3.39 | C | 3.49 | C |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 3.57 | D | 3.59 | D |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 3.83 | D | 3.91 | D |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | 3.29 | C | 3.34 | C |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 3.55 | D | 3.62 | D |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | 3.72 | D | 3.69 | D |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | 3.70 | D | 3.81 | D |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 3.42 | C | 3.37 | C |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 3.33 | C | 3.40 | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 3.14 | C | 3.18 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 3.91 | D | 3.86 | D |
| 19 | Froom Ranch Way | End | Los Osos Valley | WB | D | 3.32 | C | 3.47 | C |
| | Froom Ranch Way | Los Osos Valley | End | EB | D | 2.87 | C | 3.49 | C |
| 20 | **Dalidio Dr** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **4.30** | **E** | **4.33** | **E** |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 3.79 | D | 4.21 | D |

Notes:

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is incorporated into the methodology for evaluateing bicycle segment performance.

## TABLE 51:
## NEAR TERM CONDITIONS SEGMENT LEVEL OF SERVICE: TRANSIT ANALYSIS

| TRANSIT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Route Name | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **D** | **Ruote 4** | **4.15** | **D** | **4.28** | **E** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **D** | **Route 5** | **4.35** | **E** | **3.98** | **D** |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **D** | **Route 4** | **4.47** | **E** | **4.62** | **E** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **D** | **Route 5** | **4.71** | **E** | **4.44** | **E** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **D** | **Route 4** | **4.29** | **E** | **4.45** | **E** |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | 0.00 | Not Analyzed | N/A | Not Analyzed | N/A |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | **Route 4** | **4.33** | **E** | **4.52** | **E** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **D** | **Route 5** | **4.58** | **E** | **4.32** | **E** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **D** | **Route 4** | 4.07 | D | **4.34** | **E** |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | Route 5 | 4.22 | D | 3.78 | D |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | **Route 4** | **4.29** | **E** | **4.39** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | **Route 5** | **4.49** | **E** | 4.13 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | Route 2 | Not Analyzed | N/A | 3.57 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | Route 2 | 3.72 | D | 3.75 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | Route 2 | Not Analyzed | N/A | 4.21 | D |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **D** | **Route 2** | 4.19 | D | **4.35** | **E** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **D** | **Route 2** | **4.41** | **E** | **4.33** | **E** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | Route 2 | 3.77 | D | 3.96 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | Route 2 | 3.82 | D | 3.91 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | Route 2 | 3.54 | D | 3.64 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | Route 2 | 4.03 | D | 4.00 | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 4** | **4.51** | **E** | **4.56** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 4** | 4.25 | D | **4.43** | **E** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.60** | **E** | **4.38** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 5** | **4.40** | **E** | 4.21 | D |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **D** | **Route 4** | **4.33** | **E** | 4.36 | E |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **D** | **Route 4** | 4.24 | D | **4.50** | **E** |
| 14 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.44** | **E** | 4.12 | D |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 5** | **4.35** | **E** | **4.30** | **E** |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | Route 2 | 3.83 | D | Not Analyzed | N/A |
| 19 | Froom Ranch | End | Los Osos Valley | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch | Los Osos Valley | End | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | Route 4 | 4.01 | D | 4.05 | D |
| | **Dalidio Dr** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.47** | **E** | **4.35** | **E** |

Notes:

Segment 20 transit is southbound for routes 4 and 5

Route 2 Serves the Prado Day Center stop during the AM peak hour, and the DMV/Margarita stop during the PM Peak Hour

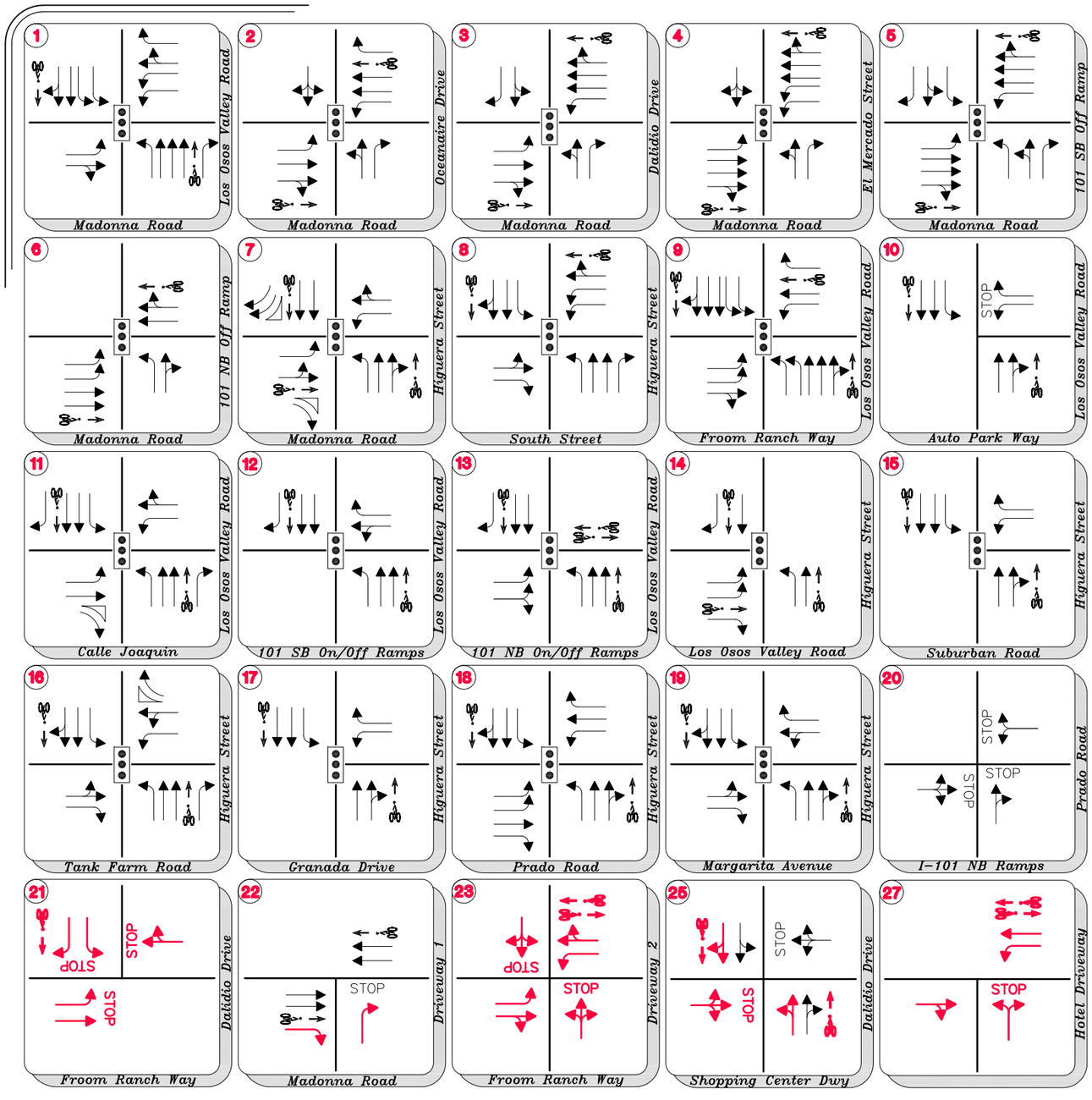
**TABLE 52:**
**NEAR TERM CONDITIONS SEGMENT LEVEL OF SERVICE: FREEWAY ANALYSIS**

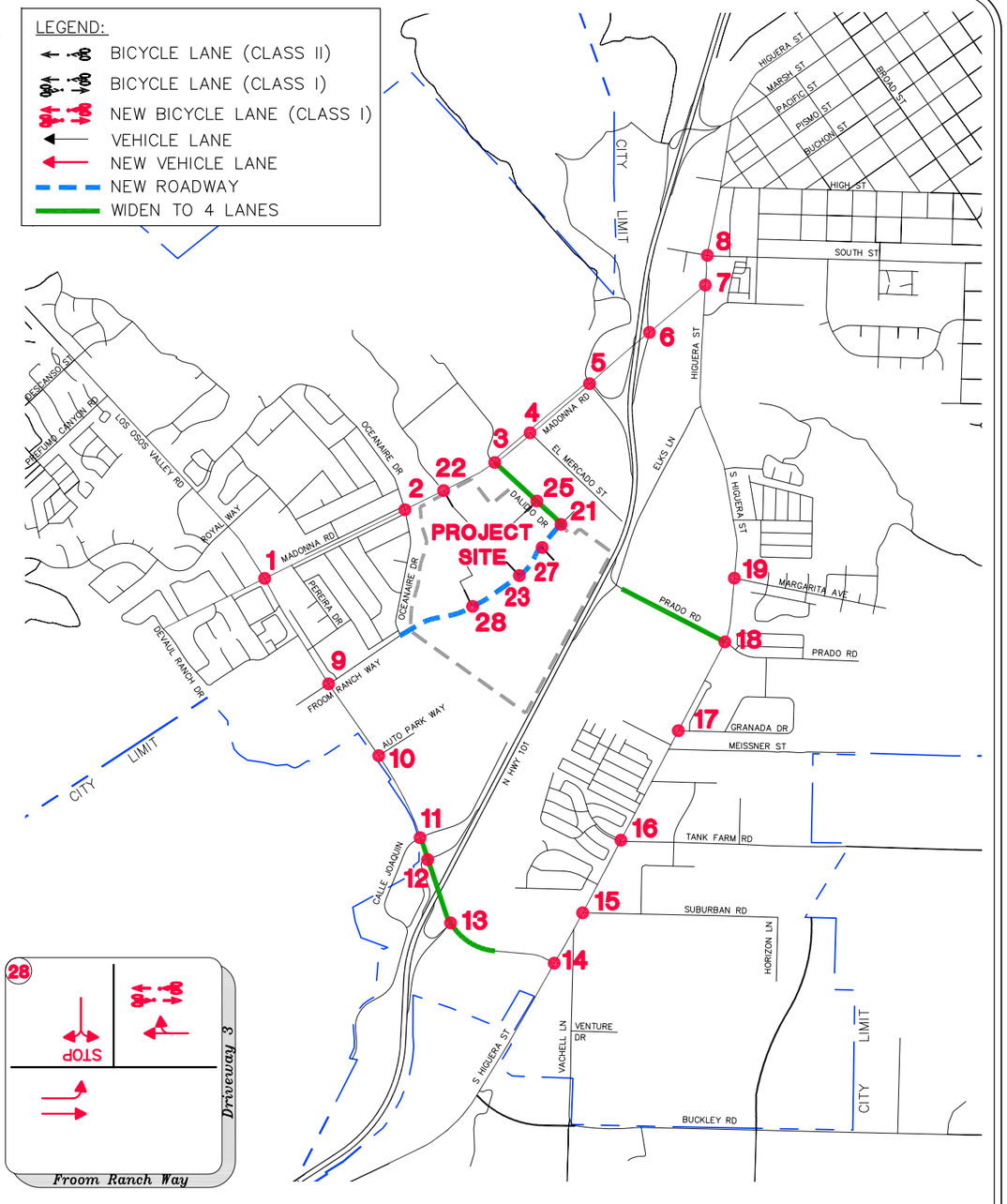
| Interchange Location | Target LOS | Segment Type | No. of Lanes | AM Peak Hour Volume | AM Peak Hour Density (pc/mi/ln) | AM Peak Hour LOS | PM Peak Hour Volume | PM Peak Hour Density (pc/mi/ln) | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|---|
| ***US 101 at Los Osos Valley Road*** | | | | | | | | | |
| US 101 NB South of Los Osos Valley Road | C | Freeway | 2 | **3,159** | **28.8** | **D** | 2,503 | 22.0 | C |
| US 101 SB South of Los Osos Valley Road | C | Freeway | 2 | 1,590 | 14.0 | B | **3,478** | **33.0** | **D** |
| ***US 101 at Prado Road*** | | | | | | | | | |
| US 101 NB South of Prado Road | C | Freeway | 2 | 2,750 | 24.3 | C | 2,393 | 21.0 | C |
| ***US 101 at Madonna Road*** | | | | | | | | | |
| US 101 NB South of Madonna Road | C | Freeway | 2 | 2,760 | 24.4 | C | 2,779 | 24.6 | C |
| US 101 SB South of Madonna Road | C | Freeway | 2 | 1,860 | 16.3 | B | **3,233** | **29.7** | **D** |

As shown in the Near Term Conditions segment analysis tables, most of the segments are currently operating at deficient LOS for pedestrian and transit modes, as well as several segments for automobile mode and only a couple segments for the bicycle mode. The segment of US 101 Northbound and Southbound south of Los Osos Valley Road and Southbound US 101 south of Madonna Road are operating at deficient LOS D during the Near Term conditions.

# Near Term Plus Project Conditions

The project generated peak hour volumes have been added to the derived Near Term No Project volumes to obtain the Near Term Plus Project conditions. The mode split for the project added traffic remains the same as existing conditions. The LOS has been quantified and compared to all study intersections and roadways analyzed in Near Term No Project conditions. All proposed driveway intersections have been evaluated for LOS operations, potential vehicle queuing and pedestrian and bicycle level of service. Figure 12 presents the Near Term Plus Project lane geometrics and control assuming the proposed project is in place. Figure 13 presents the Near Term Plus Project peak hour traffic volumes with the proposed project in place.

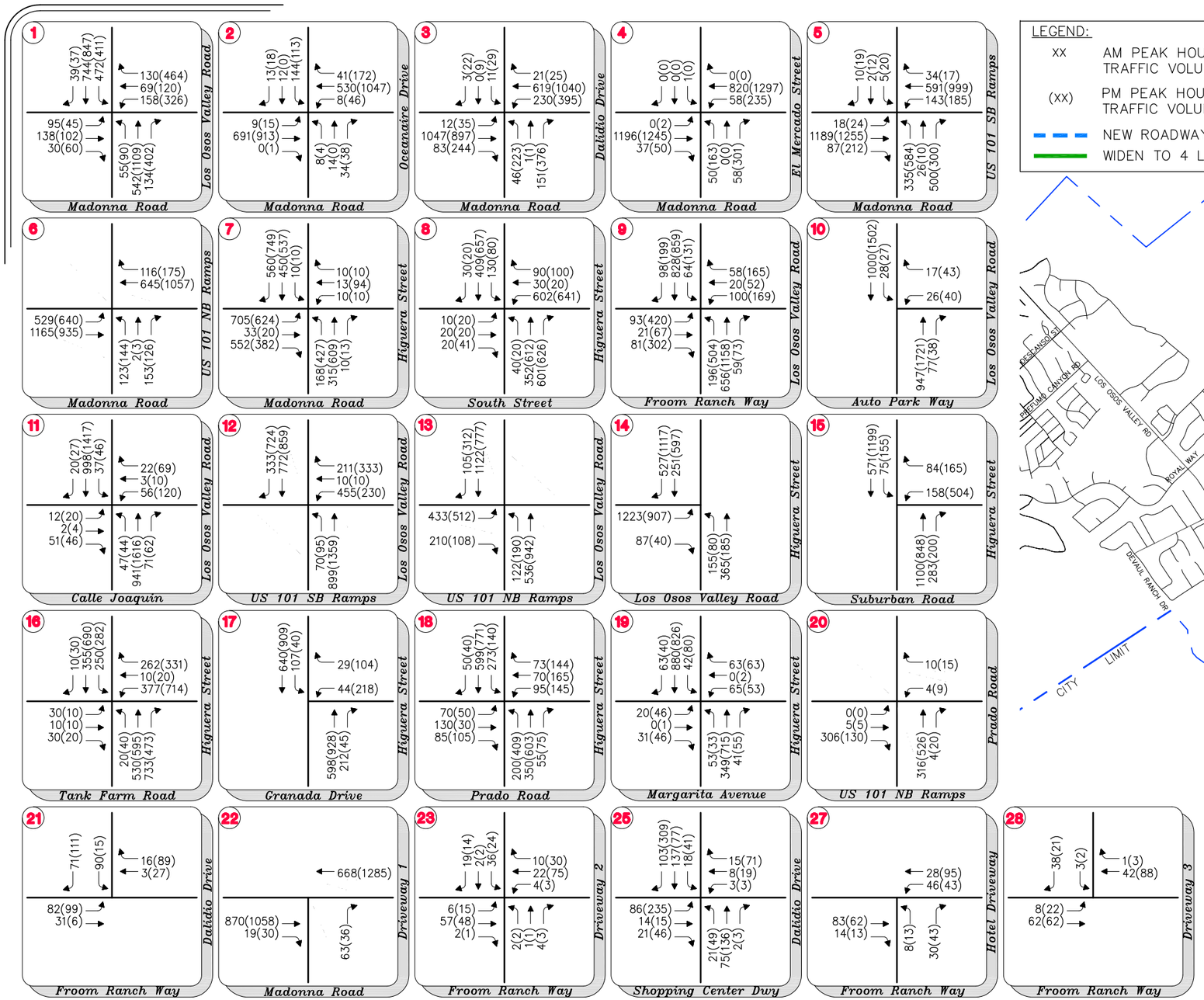



San Luis Ranch Specific Plan Multimodal TIS

Figure 12

# Year 2025 Near Term Plus Project Lane Geometrics and Control




San Luis Ranch Specific Plan Multimodal TIS

Figure 13

# Year 2025 Near Term Plus Project Peak Hour Traffic Volumes

# Near Term Plus Project Conditions Analysis

The Near Term Plus Project conditions multimodal analysis for the study intersections and segments are presented below.

## Near Term Plus Project Conditions Intersection Analysis

Table 53 provides a summary of the Near Term Plus Project conditions vehicular AM and PM peak hour intersection delay and LOS. Table 54 provides a summary of the Near Term Plus Project pedestrian AM and PM peak hour conditions at the study intersections. Table 55 provides a summary of the Near Term Plus Project bicycle AM and PM peak hour conditions at the study intersections. Table 56 provides a summary of the Near Term conditions queuing analysis.

**TABLE 53:**
**NEAR TERM PLUS PROJECT CONDITIONS INTERSECTION LOS: AUTOMOBILE ANALYSIS**

| | | | | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| # | Intersection | Control Type[1,2] | Target LOS | v/c[3] | Delay | LOS | v/c[3] | Delay | LOS |
| **1** | **Madonna Road/Los Osos Valley Road** | **Signal** | **D** | | 28.0 | C | **1.05** | **56.3** | **E** |
| 2 | Madonna Road/Oceanaire Drive | Signal | D | | 21.3 | C | | 19.0 | B |
| **3** | **Madonna Road/Dalidio Drive** | **Signal** | **D** | | 47.0 | D | **2.82** | **156.5** | **F** |
| 4 | Madonna Road/El Mercado | Signal | D | | 7.9 | A | | 20.0 | B |
| **5** | **Madonna Road/US 101 SB Ramps/Madonna** | **Signal** | **C** | **1.26** | **44.0** | **D** | | 24.9 | C |
| 6 | Madonna Road/US 101 NB Ramps | Signal | C | | 19.4 | B | | 22.2 | C |
| 7 | Madonna Road/Higuera Street | Signal | D | | 33.3 | C | | 43.6 | D |
| **8** | **Higuera Street/South Street** | **Signal** | **D** | | 27.7 | C | **1.43** | **81.0** | **F** |
| 9 | Los Osos Valley Road/Froom Ranch Way | Signal | D | | 22.7 | C | | 42.8 | D |
| **10** | **Los Osos Valley Road/Auto Park Way** | **TWSC** | **D** | | 20.2 | C | **0.57** | **59.7** | **F** |
| 11 | Los Osos Valley Road/Calle Joaquin | Signal | D | | 9.2 | A | | 6.6 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Signal | C | | 21.0 | C | | 20.0 | B |
| 13 | Los Osos Valley Road/US 101 NB Ramps | Signal | C | | 16.4 | B | | 21.5 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | Signal | D | | 23.1 | C | | 32.2 | C |
| 15 | S. Higuera Street/Suburban Drive | Signal | D | | 8.6 | A | | 20.2 | C |
| **16** | **S. Higuera Street/Tank Farm Road** | **Signal** | **D** | **1.32** | **73.2** | **E** | | 25.3 | C |
| 17 | S. Higuera Street/Granada Drive | Signal | D | | 8.3 | A | | 11.5 | B |
| 18 | S. Higuera Street/Prado Road | Signal | D | | 20.7 | C | | 28.0 | C |
| 19 | S. Higuera Street/Margarita Avenue | Signal | D | | 15.1 | B | | 14.8 | B |
| 20 | Prado Road/US 101 NB Ramps | AWSC | C | | 10.8 | B | | 15.6 | C |
| 21 | Froom Ranch Road/Dalidio Drive | AWSC | D | | 8.4 | A | | 8.4 | A |
| 22 | Madonna Road/Project Driveway | TWSC | D | | 12.7 | B | | 13.6 | B |
| 23 | Froom Ranch Road/Project Driveway #2 | TWSC | D | | 9.3 | A | | 9.7 | A |
| **25** | **Dalidio Drive/SC Project Driveway** | **TWSC** | **D** | | 12.9 | B | **0.86** | **52.3** | **F** |
| 26 | Dalidio Drive/Promenade | TWSC | D | | | A | | | A |
| 27 | Froom Ranch Road/Hotel Project Driveway | TWSC | D | | 9.2 | A | | 9.3 | A |
| 28 | Froom Ranch Road/Project Driveway #3 | TWSC | D | | 8.7 | A | | 9.0 | A |

*Notes:*
*1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout*
*2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal,*
*3. Volume to Capacity Ratio (v/c) is for worst movement delay, for unacceptable LOS only*

## TABLE 54:
## NEAR TERM PLUS PROJECT CONDITIONS INTERSECTION LOS: PEDESTRIAN ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Ped. Crosswalk Score | AM Peak Hour Ped. Crosswalk LOS | PM Peak Hour Ped. Crosswalk Score | PM Peak Hour Ped. Crosswalk LOS |
|---|---|---|---|---|---|---|---|
| 1 | **Madonna Road/Los Osos Valley Road** | EB | C | 2.11 | B | 2.13 | B |
| | | WB | C | 2.90 | C | 3.32 | C |
| | | **NB** | **C** | 3.12 | C | **3.52** | **D** |
| | | SB | C | 3.21 | C | 3.31 | C |
| 2 | Madonna Road/Oceanaire Drive | EB | C | 2.71 | B | 2.99 | C |
| | | WB | C | 3.11 | C | 3.39 | C |
| | | NB | C | 2.01 | B | 2.01 | B |
| | | SB | C | 1.82 | A | 1.85 | A |
| 3 | Madonna Road/Dalidio Drive | EB | C | 3.03 | C | 3.44 | C |
| | | WB | C | 3.05 | C | 3.17 | C |
| | | NB | C | 2.46 | B | 2.60 | B |
| | | SB | C | 2.96 | C | 2.00 | A |
| 4 | Madonna Road/El Mercado | EB | C | n/a | - | n/a | - |
| | | WB | C | 3.11 | C | 3.19 | C |
| | | NB | C | 2.25 | B | 2.51 | B |
| | | SB | C | 1.71 | A | 1.72 | A |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | C | 3.08 | C | 3.23 | C |
| | | WB | C | n/a | - | n/a | - |
| | | NB | C | 2.80 | C | 2.74 | B |
| | | SB | C | 2.18 | B | 2.19 | B |
| 6 | Madonna Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | 2.96 | C | 2.92 | C |
| | | NB | C | 2.02 | B | 2.02 | B |
| | | SB | C | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | C | 2.96 | C | 3.22 | C |
| | | WB | C | 2.01 | B | 2.02 | B |
| | | NB | C | 2.80 | C | 2.93 | C |
| | | SB | C | n/a | - | n/a | - |
| 8 | Higuera Street/South Street | EB | C | 2.03 | B | 2.06 | B |
| | | WB | C | 2.80 | C | 2.83 | C |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.52 | B | 2.62 | B |
| 9 | Los Osos Valley Road/Froom Ranch Way | EB | C | 2.51 | B | 2.80 | C |
| | | WB | C | 2.45 | B | 2.65 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 3.11 | C | 3.34 | C |
| 10 | Los Osos Valley Road/Auto Park Way | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | C | 2.47 | B | 2.28 | B |
| | | WB | C | 2.08 | B | 2.18 | B |
| | | NB | C | 3.03 | C | 3.31 | C |
| | | SB | C | 3.03 | C | 3.29 | C |
| 12 | Los Osos Valley Road/US 101 SB Ramps | EB | C | 1.86 | A | 2.24 | B |
| | | WB | C | 2.15 | B | 2.08 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | n/a | - | n/a | - |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | C | 2.35 | B | 2.37 | B |
| | | NB | C | 2.78 | C | 2.79 | C |
| | | SB | C | n/a | - | n/a | - |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | C | 3.00 | C | 2.92 | C |
| | | NB | C | 2.38 | B | 2.41 | B |
| | | SB | C | n/a | - | n/a | - |
| 15 | **S. Higuera Street/Suburban Drive** | WB | C | 2.33 | B | 2.57 | B |
| | | **NB** | **C** | 3.25 | C | **3.98** | **D** |
| | | SB | C | 2.88 | C | 3.02 | C |
| 16 | S. Higuera Street/Tank Farm Road | EB | C | 2.03 | B | 2.02 | B |
| | | WB | C | 3.01 | C | 3.20 | C |
| | | NB | C | 3.46 | C | 3.39 | C |
| | | SB | C | 2.77 | C | 2.91 | C |
| 17 | S. Higuera Street/Granada Drive | WB | C | 2.11 | B | 2.18 | B |
| | | NB | C | n/a | - | n/a | - |
| | | SB | C | 2.71 | B | 2.89 | C |
| 18 | S. Higuera Street/Prado Road | EB | C | 2.66 | B | 2.72 | B |
| | | WB | C | 2.40 | B | 2.49 | B |
| | | NB | C | 2.90 | C | 3.19 | C |
| | | SB | C | 2.86 | C | 2.93 | C |
| 19 | S. Higuera Street/Margarita Avenue | EB | C | 2.28 | B | 2.09 | B |
| | | WB | C | 2.14 | B | 2.22 | B |
| | | NB | C | 2.85 | C | 2.94 | C |
| | | SB | C | 2.78 | C | 2.93 | C |
| 20 | Prado Road/US 101 NB Ramps | EB | C | n/a | - | n/a | - |
| | | WB | C | | - | | - |
| | | NB | C | | - | | - |
| | | SB | C | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective.*

*HCM 2010 Methodologies for the pedestrian mode at two-way stop-controlled intersections is limited to the uncontrolled crossing. No methodology exists for evaluating pedestrian performance for the stop controlled approach (cross-street). However, it is reasoned that this type of control has negligible influence on pedestrian service along the segment.*

## TABLE 55:
## NEAR TERM PLUS PROJECT CONDITIONS INTERSECTION LOS: BICYCLE ANALYSIS

| # | Intersection | Approach | Target LOS | AM Peak Hour Bicycle LOS Score | AM Peak Hour Bicycle LOS LOS | PM Peak Hour Bicycle LOS Score | PM Peak Hour Bicycle LOS LOS |
|---|---|---|---|---|---|---|---|
| 1 | **Madonna Road/Los Osos Valley Road** | EB | D | 3.29 | C | 3.18 | C |
| | | **WB** | **D** | 3.39 | C | **4.30** | **E** |
| | | NB | D | 1.70 | A | 2.18 | B |
| | | SB | D | 2.72 | B | 2.71 | B |
| 2 | Madonna Road/Oceanaire Drive | EB | D | 2.74 | B | 2.96 | C |
| | | WB | D | 1.17 | A | 1.79 | A |
| | | NB | D | 2.76 | C | 2.74 | B |
| | | SB | D | 2.23 | B | 2.23 | B |
| 3 | Madonna Road/Dalidio Drive | EB | D | 2.23 | B | 2.13 | B |
| | | WB | D | 1.66 | A | 1.94 | A |
| | | NB | D | 2.19 | B | 2.84 | C |
| | | SB | D | 1.77 | A | 1.84 | A |
| 4 | Madonna Road/El Mercado | EB | D | 1.89 | A | 1.84 | A |
| | | WB | D | 1.85 | A | 2.16 | B |
| | | NB | D | 3.23 | C | 3.81 | D |
| | | SB | D | 3.03 | C | 3.03 | C |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | EB | D | 2.07 | B | 2.12 | B |
| | | WB | D | 1.74 | A | 1.96 | A |
| | | NB | D | n/a | - | n/a | - |
| | | SB | D | 2.91 | C | 2.96 | C |
| 6 | Madonna Road/US 101 NB Ramps | EB | D | 2.78 | C | 2.45 | B |
| | | WB | D | 1.79 | A | 2.09 | B |
| | | NB | D | n/a | - | n/a | - |
| 7 | Madonna Road/Higuera Street | EB | D | 3.56 | D | 3.01 | C |
| | | WB | D | 2.46 | B | 2.60 | B |
| | | NB | D | 1.81 | A | 2.29 | B |
| | | SB | D | 2.37 | B | 2.59 | B |
| 8 | Higuera Street/South Street | EB | D | 2.72 | B | 2.78 | C |
| | | WB | D | 2.83 | C | 2.94 | C |
| | | NB | D | 3.09 | C | 3.35 | C |
| | | SB | D | 1.62 | A | 1.80 | A |
| 9 | **Los Osos Valley Road/Froom Ranch Way** | **EB** | **D** | 3.44 | C | **4.45** | **E** |
| | | WB | D | 2.00 | A | 2.67 | B |
| | | NB | D | 1.86 | A | 2.31 | B |
| | | SB | D | 1.78 | A | 1.87 | A |
| 10 | Los Osos Valley Road/Auto Park Way | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |
| 11 | Los Osos Valley Road/Calle Joaquin | EB | D | 2.99 | C | 2.99 | C |
| | | WB | D | 3.08 | C | 3.27 | C |
| | | NB | D | 1.57 | A | 2.06 | B |
| | | SB | D | 0.53 | A | 0.84 | A |
| 12 | Los Osos Valley Road/US 101 SB Ramps | WB | D | n/a | - | n/a | - |
| | | NB | D | 2.89 | C | 3.23 | C |
| | | SB | D | 1.69 | A | 2.02 | B |
| 13 | Los Osos Valley Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | NB | D | 1.95 | A | 2.37 | B |
| | | SB | D | 2.88 | C | 2.76 | C |
| 14 | S. Higuera Street/Los Osos Valley Road | EB | D | 2.19 | B | 1.86 | A |
| | | NB | D | 2.20 | B | 1.74 | A |
| | | SB | D | 2.63 | B | 4.24 | D |
| 15 | S. Higuera Street/Suburban Drive | WB | D | 1.09 | A | 1.82 | A |
| | | NB | D | 2.43 | B | 2.10 | B |
| | | SB | D | 1.82 | A | 2.41 | B |
| 16 | S. Higuera Street/Tank Farm Road | EB | D | 2.72 | B | 2.67 | B |
| | | WB | D | 2.65 | B | 3.33 | C |
| | | NB | D | 2.39 | B | 2.21 | B |
| | | SB | D | 1.78 | A | 2.10 | B |
| 17 | S. Higuera Street/Granada Drive | WB | D | 2.63 | B | 3.07 | C |
| | | NB | D | 1.90 | A | 2.05 | B |
| | | SB | D | 1.99 | A | 2.17 | B |
| 18 | S. Higuera Street/Prado Road | EB | D | 2.48 | B | 2.30 | B |
| | | WB | D | 2.93 | C | 3.31 | C |
| | | NB | D | 1.76 | A | 2.19 | B |
| | | SB | D | 2.05 | B | 2.07 | B |
| 19 | S. Higuera Street/Margarita Avenue | EB | D | 2.51 | B | 2.58 | B |
| | | WB | D | 2.74 | B | 2.72 | B |
| | | NB | D | 1.68 | A | 2.00 | A |
| | | SB | D | 2.25 | B | 2.22 | B |
| 20 | Prado Road/US 101 NB Ramps | EB | D | n/a | - | n/a | - |
| | | WB | D | | - | | - |
| | | NB | D | | - | | - |
| | | SB | D | | - | | - |

*Notes:*

*HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating bicycle performance at two-way stop-controlled intersections. However, it is reasoned that this type of control has negligible influence on bicycle service along the segment for stop controll on the cross-street.*

**TABLE 56:**
**NEAR TERM PLUS PROJECT CONDITIONS 95TH PERCENTILE QUEUING ANALYSIS**

| *Intersection* | | | | | 95th Percentile Queue/Lane (ft) | |
|---|---|---|---|---|---|---|
| ID | Location | Movement | No. Lanes | Total Storage (ft)[1] | AM Peak Hour | PM Peak Hour |
| 1 | Madonna Road/Los | Northbound Right | 1 | 175 | 100 | **261** |
| 2 | Madonna | Westbound Right | 1 | 100 | 58 | **140** |
| 3 | Madonna Road/Dalidio Drive | Westbound Left | 1 | 275 | 194 | **336** |
| | | Westbound Through/Right | 3 | 570 | 108 | **610** |
| 4 | Madonna Road/El | Westbound Left | 2 | 260 | 50 | **535** |
| 5 | Madonna Road/US 101 SB Ramps/Madonna Inn | Eastbound Left | 1 | 100 | 83 | **111** |
| | | Westbound Left | 1 | 260 | 170 | **539** |
| 6 | Madonna Road/US 101 | Northbound Left | 1 | 185 | 156 | **258** |
| 7 | Madonna Road/Higuera Street | Eastbound Right | 1 | 150 | **248** | **314** |
| | | Northbound Left | 1 | 160 | **185** | **376** |
| | | Southbound Left/Through | 2 | 250 | 159 | **430** |
| | | Southbound Right | 2 | 340 | 164 | **592** |
| 8 | Higuera Street/South Street | Westbound Left | 2 | 240 | **342** | **1024** |
| | | Northbound Left | 1 | 60 | **102** | 44 |
| | | Northbound Right | 1 | 60 | **104** | **127** |
| | | Southbound Left | 1 | 70 | **116** | **122** |
| 9 | Los Osos Valley | Westbound Right | 1 | 50 | **60** | **119** |
| 12 | Los Osos Valley Road/US 101 SB Ramps | Westbound Left/Through | 1 | 180 | **259** | **216** |
| | | Southbound Through | 1 | 240 | **293** | **273** |
| | | Southbound Right | 1 | 125 | **188** | **177** |
| 13 | Los Osos Valley | Southbound Right | 1 | 130 | **244** | **248** |
| 14 | S. Higuera Street/Los | Eastbound Right | 1 | 90 | **189** | **156** |
| 15 | S. Higuera | Southbound Left | 1 | 200 | 149 | **259** |
| 16 | S. Higuera Street/Tank Farm Road | Northbound Right | 1 | 100 | **186** | **170** |
| | | Southbound Left | 1 | 165 | **211** | **243** |
| 17 | S. Higuera | Southbound Left | 1 | 80 | **85** | 65 |
| 18 | S. Higuera Street/Prado Road | Westbound Left | 1 | 105 | **110** | **131** |
| | | Westbound Right | 1 | 100 | 49 | **137** |
| | | Northbound Left | 1 | 100 | **158** | **186** |
| 19 | S. Higuera Street/Margarita Avenue | Northbound Left | 1 | 60 | **78** | **70** |
| | | Southbound Left | 1 | 60 | **83** | **99** |
| 24 | Prado Road/US 101 SB | Westbound Left/Through | 1 | 250 | 158 | **424** |

*Notes:* ***1. Bolded entries indicate queues exceed available storage***

2. Storage Length of " - " represents a lane which exceeds 900 feet, usually a through lane.

3. For Movements with more than one lane, the maximum of the 95th percentile queue is reported.

4. * Represents storage lengths for one lane; second lane is a left or right trap lane.

As shown in Table 53, the intersections of Los Osos Valley Road/Madonna Road, Madonna Road/Dalidio Drive, Madonna Road/US 101 SB Ramps/Madonna Inn, Higuera Street/South Street, Los Osos Valley Road/Auto Park Way, and S. Higuera Street/Tank Farm Road are projected to operate at unacceptable conditions during Near Term Plus Project Conditions. . Queuing analysis results show numerous locations in which the 95th percentile queue are expected to exceed the available storage capacity during Near Term Plus Project conditions.

Pedestrian analysis shows acceptable conditions at the study intersections. Bicycle analysis shows deficiencies at of Los Osos Valley Road/Madonna Road and at Los Osos Valley

Road/Froom Ranch Way. Transportation improvements required to mitigate project-related impacts are detailed in a subsequent section of this report.

## Near Term Plus Project Conditions Segment Analysis

Table 57 provides a summary of the Near Term Plus Project vehicular AM and PM peak hour conditions for the study segments. Table 58 provides a summary of the Near Term Existing Plus Project pedestrian AM and PM peak hour conditions for the study segments. Table 59 provides a summary of the Near Term Plus Project bicycle AM and PM peak hour conditions for the study segments. Table 60 provides a summary of the Near Term Plus Project transit AM and PM peak hour conditions for the study segments. Table 61 provides a summary of the Near Term Plus Project freeway segments analysis for AM and PM peak hour conditions for the study segments along US 101. Transportation improvements required to mitigate project-related impacts are detailed in a subsequent section of this report.

## TABLE 57:
## NEAR TERM PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: AUTOMOBILE ANALYSIS

| AUTO SEGMENT LOS | | | | | | AM PEAK | | | | PM PEAK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS | Travel Speed (mph) | Base Free-Flow Speed BFFS (mph) | Travel Speed/ BFFS (%) | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | **21.7** | **42.1** | **51%** | **C** | **10.2** | **42.1** | **24%** | **F** |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | C | 28.0 | 42.1 | 67% | C | 28.5 | 42.1 | 68% | B |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | C | 23.6 | 40.8 | 58% | C | 23.8 | 40.7 | 59% | C |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | **11.5** | **40.7** | **28%** | **F** | **16.3** | **40.8** | **40%** | **E** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | **14.9** | **34.1** | **44%** | **D** | **14.2** | **34.8** | **41%** | **D** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | **26.0** | **38.2** | **68%** | **B** | **11.5** | **34.6** | **33%** | **E** |
| 4 | Madonna Rd | US 101 SB Ramps | El Mercado | WB | C | 30.8 | 37.9 | 81% | B | 22.0 | 37.3 | 59% | C |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | **20.7** | **37.8** | **55%** | **C** | **17.5** | **37.7** | **46%** | **D** |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | C | 28.4 | 37.8 | 75% | B | 22.3 | 37.8 | 59% | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | C | 32.8 | 37.8 | 87% | A | 33.3 | 37.8 | 88% | A |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **10.6** | **37.2** | **29%** | **F** | **14.1** | **37.2** | **38%** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **12.6** | **37.2** | **34%** | **E** | **8.0** | **37.2** | **21%** | **F** |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | C | 32.6 | 44.5 | 73% | B | 33.1 | 44.5 | 74% | B |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | C | 33.0 | 44.8 | 74% | B | 33.5 | 44.8 | 75% | B |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **16.2** | **38.9** | **42%** | **D** | **11.5** | **38.9** | **30%** | **F** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | **21.2** | **38.9** | **55%** | **C** | **19.1** | **38.9** | **49%** | **D** |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | C | 33.5 | 41.8 | 80% | B | 29.3 | 41.8 | 70% | B |
| | S. Higuera St | Granada Dr | Prado Rd | NB | C | 21.6 | 41.9 | 52% | C | 23.9 | 41.9 | 57% | C |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | C | 42.3 | 41.6 | 102% | A | 24.7 | 42.6 | 58% | C |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 29.7 | 41.6 | 71% | B | 26.8 | 42.6 | 63% | C |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | C | 27.1 | 42.4 | 64% | C | 21.5 | 41.2 | 52% | C |
| | **S. Higuera St** | **Suburban Drive** | **Tank Farm Road** | **NB** | **C** | **17.8** | **42.5** | **42%** | **D** | **16.2** | **41.3** | **39%** | **E** |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **20.4** | **42.1** | **49%** | **D** | **13.4** | **39.1** | **34%** | **E** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | **23.7** | **42.0** | **56%** | **C** | **18.9** | **39.0** | **49%** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | **22.7** | **41.9** | **54%** | **C** | **15.2** | **41.8** | **36%** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **20.5** | **41.8** | **49%** | **D** | **14.8** | **41.8** | **36%** | **E** |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | C | 29.0 | 43.0 | 67% | B | 30.3 | 43.0 | 71% | B |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **C** | **28.1** | **43.2** | **65%** | **C** | **21.4** | **43.2** | **50%** | **D** |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **6.2** | **32.1** | **19%** | **F** | **13.1** | **32.1** | **41%** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | **16.2** | **31.1** | **52%** | **C** | **13.9** | **31.1** | **45%** | **D** |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | C | 24.7 | 37.7 | 66% | C | 21.0 | 37.7 | 56% | C |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | C | 20.2 | 37.4 | 54% | C | 32.2 | 37.4 | 86% | A |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **16.9** | **39.4** | **43%** | **D** | **15.6** | **39.4** | **39%** | **E** |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | C | 24.2 | 39.2 | 62% | C | 26.7 | 39.2 | 68% | B |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 27.4 | 39.1 | 70% | B | 23.9 | 39.1 | 61% | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 23.4 | 39.0 | 60% | C | 21.7 | 39.0 | 56% | C |
| 19 | **Froom Ranch Way** | **Dick's Sporting Goods** | **Los Osos Valley** | **WB** | **C** | **17.8** | **38.0** | **47%** | **D** | **13.0** | **37.4** | **35%** | **E** |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods I | EB | C | 34.7 | 37.4 | 93% | A | 34.9 | 37.9 | 92% | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | C | 29.3 | 39.3 | 74% | B | 29.5 | 39.3 | 75% | B |
| | **Dalidio Dr** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **11.2** | **37.8** | **30%** | **F** | **1.1** | **37.8** | **3%** | **F** |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods I | WB | D | 40.0 | 40.6 | 98% | A | 39.9 | 40.6 | 98% | A |
| | Froom Ranch Way | Dick's Sporting Goods | Dalidio | EB | D | 34.1 | 40.8 | 84% | B | 33.9 | 40.8 | 83% | B |

## TABLE 58:
## NEAR TERM PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: PEDESTRIAN ANALYSIS

| PEDESTRIAN SEGMENT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Average Ped. Space ($ft^2$/p) | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | **Madonna Rd** | **Oceanaire Dr** | **LOVR** | **WB** | **C** | **2648** | **3.54** | **D** | **3.88** | **D** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **C** | **17482** | **3.93** | **D** | **4.10** | **D** |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **C** | **12000** | **3.64** | **D** | **4.00** | **D** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **C** | **5833** | **3.84** | **D** | **3.97** | **D** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **C** | **37450** | **3.61** | **D** | **3.99** | **D** |
| | **Madonna Rd** | **Dalidio Dr** | **El Mercado** | **EB** | **C** | **52920** | **3.74** | **D** | **3.89** | **D** |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **C** | **26250** | **3.68** | **D** | **3.87** | **D** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **C** | **27915** | **3.77** | **D** | **3.87** | **D** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **C** | **No Peds** | **3.76** | **D** | **3.95** | **F** |
| | **Madonna Rd** | **US 101 SB Ramps** | **US 101 NB Ramps** | **EB** | **C** | **No Peds** | **4.12** | **D** | **4.07** | **D** |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **25200** | **3.70** | **D** | **3.88** | **D** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **C** | **19838** | **3.90** | **D** | **3.86** | **D** |
| 7 | **S. Higuera St** | **Madonna Rd** | **Margarita Ave** | **SB** | **C** | **23247** | **3.87** | **D** | **3.90** | **D** |
| | **S. Higuera St** | **Margarita Ave** | **Madonna Rd** | **NB** | **C** | **5398** | **3.68** | **D** | **3.92** | **D** |
| 8 | **S. Higuera St** | **Margarita Ave** | **Prado Rd** | **SB** | **C** | **40979** | **3.71** | **D** | **3.74** | **D** |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **C** | **21700** | **3.55** | **D** | **3.71** | **D** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **C** | **9292** | **3.65** | **D** | **3.77** | **D** |
| | **S. Higuera St** | **Granada Dr** | **Prado Rd** | **NB** | **C** | **8400** | 3.26 | C | **3.53** | **D** |
| 10 | **S. Higuera St** | **Granada Dr** | **Tank Farm Road** | **SB** | **C** | **46305** | **3.62** | **D** | **3.80** | **D** |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | C | 49140 | 3.24 | C | 3.36 | C |
| 11 | **S. Higuera St** | **Tank Farm Road** | **Suburban Drive** | **SB** | **C** | **12600** | **3.66** | **D** | **3.96** | **D** |
| | **S. Higuera St** | **Suburban Drive** | **Tank Farm Road** | **NB** | **C** | **31500** | **3.66** | **D** | **3.56** | **D** |
| 12 | **S. Higuera St** | **Suburban Drive** | **Los Osos Valley Road** | **SB** | **C** | **39312** | **3.64** | **D** | **4.02** | **D** |
| | **S. Higuera St** | **Los Osos Valley Road** | **Suburban Drive** | **NB** | **C** | **43533** | **4.00** | **D** | **4.06** | **D** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **C** | **3853** | **3.86** | **D** | **3.99** | **D** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **C** | **0** | **3.75** | **F** | **4.19** | **F** |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **C** | **27300** | **3.87** | **D** | **4.08** | **D** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **C** | **22050** | **3.75** | **D** | **4.11** | **D** |
| 15 | **Los Osos Valley** | **Calle Joaquin** | **US 101 SB Ramps** | **SB** | **C** | **44100** | **3.71** | **D** | **3.72** | **D** |
| | **Los Osos Valley** | **US 101 SB Ramps** | **Calle Joaquin** | **NB** | **C** | **63000** | **3.68** | **D** | **4.03** | **D** |
| 16 | **Los Osos Valley** | **US 101 SB Ramps** | **US 101 NB Ramps** | **SB** | **C** | **No Peds** | **3.94** | **D** | **3.92** | **D** |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | C | 53928 | 3.83 | D | 3.29 | C |
| 17 | **Los Osos Valley** | **US 101 NB Ramps** | **S. Higuera St** | **EB** | **C** | **46575** | **3.95** | **D** | **3.79** | **D** |
| | **Los Osos Valley** | **S. Higuera St** | **US 101 NB Ramps** | **WB** | **C** | **1680** | **3.89** | **D** | **4.29** | **E** |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | C | 25200 | 2.76 | C | 2.85 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | C | 3019 | 3.44 | C | 3.42 | C |
| 19 | Froom Ranch Way | Dick's Sporting Goods | Los Osos Valley | WB | C | 4846 | 3.06 | C | 3.26 | C |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods I | EB | C | No Peds | 1.79 | A | 1.75 | A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | C | 3500 | 1.64 | A | 1.60 | A |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | C | 21000 | 3.10 | C | 3.30 | C |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods I | WB | C | 8400 | 1.55 | A | 1.57 | A |
| | Froom Ranch Way | Dick's Sporting Goods | Dalidio | EB | C | No Peds | 1.64 | A | 1.64 | A |

Notes:

Sidewalk is present along frontage roads for segments #1 - Madonna Road and #13 - Los Osos Valley Road, and is not accounted for in this analysis.

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is reasoned that it has negligible influence on pedestrian sevice along the segment.

**TABLE 59:**
**NEAR TERM PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: BICYCLE ANALYSIS**

| BICYCLE SEGMENT LOS | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | 3.61 | D | 4.17 | D |
| | Madonna Rd | LOVR | Oceanaire Dr | EB | D | 3.73 | D | 3.80 | D |
| 2 | Madonna Rd | Dalidio | Oceanaire Dr | WB | D | 3.15 | C | 3.24 | C |
| | Madonna Rd | Oceanaire Dr | Dalidio | EB | D | 3.57 | D | 3.44 | C |
| 3 | Madonna Rd | El Mercado | Dalidio Dr | WB | D | 3.31 | C | 3.24 | C |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | 3.40 | C | 3.42 | C |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | 3.98 | D | **4.38** | **E** |
| | Madonna Rd | El Mercado | US 101 SB Ramps | EB | D | 3.64 | D | 3.65 | D |
| 5 | Madonna Rd | US 101 NB Ramps | US 101 SB Ramps | WB | D | 3.33 | C | 3.38 | C |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | 3.40 | C | 3.35 | C |
| 6 | Madonna Rd | Higuera St | US 101 NB Ramps | WB | D | 3.52 | D | 3.58 | D |
| | Madonna Rd | US 101 NB Ramps | Higuera St | EB | D | 3.77 | D | 3.59 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | 3.91 | D | 3.90 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | 4.09 | D | 4.19 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | 3.67 | D | 3.67 | D |
| | S. Higuera St | Prado Rd | Margarita Ave | NB | D | 3.87 | D | 3.97 | D |
| 9 | S. Higuera St | Prado Rd | Granada Dr | SB | D | 3.88 | D | 3.91 | D |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | 3.45 | C | 3.53 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | 4.13 | D | 4.19 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | 3.52 | D | 3.55 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | 3.35 | C | 3.46 | C |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | 3.46 | C | 3.43 | C |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | 3.28 | C | 3.94 | D |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | 3.94 | D | 3.88 | D |
| 13 | Los Osos Valley | Madonna Rd | Froom Ranch Way | SB | D | 3.72 | D | 3.74 | D |
| | Los Osos Valley | Froom Ranch Way | Madonna Rd | NB | D | 3.39 | C | 3.49 | C |
| 14 | Los Osos Valley | Froom Ranch Way | Calle Joaquin | SB | D | 3.57 | D | 3.60 | D |
| | Los Osos Valley | Calle Joaquin | Froom Ranch Way | NB | D | 3.83 | D | 3.91 | D |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | 3.29 | C | 3.35 | C |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | 3.55 | D | 3.62 | D |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | 3.72 | D | 3.69 | D |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | 3.71 | D | 3.82 | D |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | 3.42 | C | 3.37 | C |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | 3.33 | C | 3.41 | C |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | 3.14 | C | 3.18 | C |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | 3.91 | D | 3.86 | D |
| 19 | Froom Ranch Way | Dick's Sporting Goods I | Los Osos Valley | WB | D | 3.42 | C | 3.52 | D |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods I | EB | D | 3.33 | C | 3.52 | D |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | 3.35 | C | 2.93 | C |
| | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 3.35 | C | 3.42 | C |
| 21 | Froom Ranch Way | Dalidio | Dick's Sporting Goods I | WB | D | 2.49 | B | 2.92 | C |
| | Froom Ranch Way | Dick's Sporting Goods I | Dalidio | EB | D | 3.42 | C | 3.40 | C |

Notes:

HCM 2010 Methodologies do not model segments bounded by all-way stop control. Procedures have not been developed yet to address the effect of all-way stop control or yield control on intersection performance from a pedestrian or bicyce perspective. No methodology exists for evaluating two-way stop-controlled interesction performance (with the cross-street stop controlled) for pedestrians and bicycles. However, it is incorporated into the methodology for evaluateing bicycle segment performance.

## TABLE 60:
## NEAR TERM PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: TRANSIT ANALYSIS

| TRANSIT LOS | | | | | | | AM PEAK | | PM PEAK | |
|---|---|---|---|---|---|---|---|---|---|---|
| ID | Roadway | From | To | Direction | LOS Threshold | Route Name | SEGMENT SCORE | LOS | SEGMENT SCORE | LOS |
| 1 | Madonna Rd | Oceanaire Dr | LOVR | WB | D | Ruote 4 | 4.16 | D | **4.28** | **E** |
| | **Madonna Rd** | **LOVR** | **Oceanaire Dr** | **EB** | **D** | **Route 5** | **4.34** | **E** | 4.01 | D |
| 2 | **Madonna Rd** | **Dalidio** | **Oceanaire Dr** | **WB** | **D** | **Route 4** | **4.47** | **E** | **4.63** | **E** |
| | **Madonna Rd** | **Oceanaire Dr** | **Dalidio** | **EB** | **D** | **Route 5** | **4.70** | **E** | **4.44** | **E** |
| 3 | **Madonna Rd** | **El Mercado** | **Dalidio Dr** | **WB** | **D** | **Route 4** | **4.34** | **E** | **4.49** | **E** |
| | Madonna Rd | Dalidio Dr | El Mercado | EB | D | Route 5 | Not Analyzed | N/A | Not Analyzed | N/A |
| 4 | **Madonna Rd** | **US 101 SB Ramps** | **El Mercado** | **WB** | **D** | **Route 4** | **4.35** | **E** | **4.55** | **E** |
| | **Madonna Rd** | **El Mercado** | **US 101 SB Ramps** | **EB** | **D** | **Route 5** | **4.60** | **E** | **4.35** | **E** |
| 5 | **Madonna Rd** | **US 101 NB Ramps** | **US 101 SB Ramps** | **WB** | **D** | **Route 4** | 4.09 | D | **4.38** | **E** |
| | Madonna Rd | US 101 SB Ramps | US 101 NB Ramps | EB | D | Route 5 | 4.25 | D | 3.83 | D |
| 6 | **Madonna Rd** | **Higuera St** | **US 101 NB Ramps** | **WB** | **D** | **Route 4** | **4.31** | **E** | **4.43** | **E** |
| | **Madonna Rd** | **US 101 NB Ramps** | **Higuera St** | **EB** | **D** | **Route 5** | **4.51** | **E** | 4.16 | D |
| 7 | S. Higuera St | Madonna Rd | Margarita Ave | SB | D | Route 2 | Not Analyzed | N/A | 3.58 | D |
| | S. Higuera St | Margarita Ave | Madonna Rd | NB | D | Route 2 | 3.72 | D | 3.75 | D |
| 8 | S. Higuera St | Margarita Ave | Prado Rd | SB | D | Route 2 | Not Analyzed | N/A | 4.21 | D |
| | **S. Higuera St** | **Prado Rd** | **Margarita Ave** | **NB** | **D** | **Route 2** | 4.22 | D | **4.34** | **E** |
| 9 | **S. Higuera St** | **Prado Rd** | **Granada Dr** | **SB** | **D** | **Route 2** | **4.41** | **E** | **4.33** | **E** |
| | S. Higuera St | Granada Dr | Prado Rd | NB | D | Route 2 | 3.77 | D | 3.95 | D |
| 10 | S. Higuera St | Granada Dr | Tank Farm Road | SB | D | Route 2 | 3.82 | D | 3.91 | D |
| | S. Higuera St | Tank Farm Road | Granada Dr | NB | D | Route 2 | 3.54 | D | 3.64 | D |
| 11 | S. Higuera St | Tank Farm Road | Suburban Drive | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Suburban Drive | Tank Farm Road | NB | D | Route 2 | 4.03 | D | 4.00 | D |
| 12 | S. Higuera St | Suburban Drive | Los Osos Valley Road | SB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| | S. Higuera St | Los Osos Valley Road | Suburban Drive | NB | D | - | Not Analyzed | N/A | Not Analyzed | N/A |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 4** | **4.53** | **E** | **4.56** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 4** | **4.25** | **E** | **4.43** | **E** |
| 13 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.61** | **E** | **4.38** | **E** |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 5** | **4.36** | **E** | 4.21 | D |
| 14 | **Los Osos Valley** | **Froom Ranch Way** | **Calle Joaquin** | **SB** | **D** | **Route 4** | **4.34** | **E** | **4.37** | **E** |
| | **Los Osos Valley** | **Calle Joaquin** | **Froom Ranch Way** | **NB** | **D** | **Route 4** | **4.27** | **E** | **4.54** | **E** |
| 14 | **Los Osos Valley** | **Madonna Rd** | **Froom Ranch Way** | **SB** | **D** | **Route 5** | **4.45** | **E** | 4.14 | D |
| | **Los Osos Valley** | **Froom Ranch Way** | **Madonna Rd** | **NB** | **D** | **Route 5** | **4.38** | **E** | **4.35** | **E** |
| 15 | Los Osos Valley | Calle Joaquin | US 101 SB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 SB Ramps | Calle Joaquin | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 16 | Los Osos Valley | US 101 SB Ramps | US 101 NB Ramps | SB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | US 101 NB Ramps | US 101 SB Ramps | NB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 17 | Los Osos Valley | US 101 NB Ramps | S. Higuera St | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Los Osos Valley | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 18 | Prado Rd | S. Higuera St | US 101 NB Ramps | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Prado Rd | US 101 NB Ramps | S. Higuera St | EB | D | Route 2 | 3.83 | D | Not Analyzed | N/A |
| 19 | Froom Ranch Way | Dick's Sporting | Los Osos Valley | WB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch Way | Los Osos Valley | Dick's Sporting Goods | EB | D | | Not Analyzed | N/A | Not Analyzed | N/A |
| 20 | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | Route 4 | 3.64 | D | 3.65 | D |
| | Dalidio Dr | Madonna Rd | Froom Ranch Way | SB | D | Route 5 | 4.20 | D | 3.96 | D |
| 21 | Dalidio Dr | Froom Ranch Way | Madonna Rd | NB | D | 0.00 | Not Analyzed | N/A | Not Analyzed | N/A |
| | Froom Ranch Way | Dalidio | Dick's Sporting Goods | WB | D | 0.00 | Not Analyzed | N/A | Not Analyzed | N/A |

Notes:

Segment 20 transit is southbound for routes 4 and 5

Route 2 Serves the Prado Day Center stop during the AM peak hour, and the DMV/Margarita stop during the PM Peak Hour

**TABLE 61:**
**NEAR TERM PLUS PROJECT CONDITIONS SEGMENT LEVEL OF SERVICE: FREEWAY ANALYSIS**

| Interchange Location | Target LOS | Segment Type | No. of Lanes | AM Peak Hour Volume | AM Peak Hour Density (pc/mi/ln) | AM Peak Hour LOS | PM Peak Hour Volume | PM Peak Hour Density (pc/mi/ln) | PM Peak Hour LOS |
|---|---|---|---|---|---|---|---|---|---|
| ***US 101 at Los Osos Valley Road*** | | | | | | | | | |
| US 101 NB South of Los Osos Valley Road | C | Freeway | 2 | **3,186** | **29.1** | **D** | 2,538 | 22.3 | C |
| US 101 SB South of Los Osos Valley Road | C | Freeway | 2 | 1,616 | 14.2 | B | **3,516** | **33.5** | **D** |
| ***US 101 at Prado Road*** | | | | | | | | | |
| US 101 NB South of Prado Road | C | Freeway | 2 | 2,770 | 24.5 | C | 2,420 | 21.2 | C |
| ***US 101 at Madonna Road*** | | | | | | | | | |
| US 101 NB South of Madonna Road | C | Freeway | 2 | 2,780 | 24.6 | C | 2,806 | 24.8 | C |
| US 101 SB South of Madonna Road | C | Freeway | 2 | 1,879 | 16.5 | B | **3,260** | **30.0** | **D** |

As shown in the Near Term Plus Project Conditions segment analysis tables, most of the pedestrian and transit facilities are projected to operate at unacceptable levels of service as well as several segments for automobile mode and only one segment for the bicycle mode.

# Project Proposed Infrastructure Phasing

This section evaluates the proposed phasing of infrastructure included within the project description. Table 7-9 below of the San Luis Ranch Specific Plan is the applicant's proposed infrastructure phasing plan.

Table 7-9 San Luis Ranch Build-Out Phasing Plan

| Phase/Trigger | Improvement |
|---|---|
| Phases 1 and 2 - Residential | Froom Ranch Way Extension |
| Phases 1 and 2 - Residential | Madonna Road Improvements |
| Phase 3 - Commercial | Dalidio Drive Improvements |
| Phase 3 - Commercial | Traffic Signal Improvements |
| Phase 3 - Commercial | Froom Ranch Way Bridge |
| After Specific Plan Build-Out | Prado Road Connection - US 101 |

## Froom Ranch Way Extension: Phases 1 & 2

The specific plan describes this infrastructure as the extension of Froom Ranch Way (2-lane collector road with class I path) from the existing Dalidio Drive to the south up to but not including the Froom Ranch Way Bridge. There are no anticipated impacts associated with the proposed timing of these improvements.

## Madonna Road Improvements: Phases 1 & 2

The specific plan describes this infrastructure as a right-in and right-out connection with acceleration and deceleration lanes, sidewalk, curb, and gutter, as well as widening to match

the segments east and west of the Specific Plan. There are no anticipated impacts associated with the proposed timing of these improvements.

**Dalidio/Prado Improvements: Phase 3**

The specific plan describes this infrastructure as widening to two lanes in both directions. Due to level of service and queuing impacts the Prado Road Overcrossing is triggered at part of Phase 2, the projected volumes on Prado Road with that connection occurring under Phase 2 would exceed the 2 lane capacity of Dalidio/Prado Road prior to the improvements proposed to occur at Phase 3 causing a significant impact. Changing timing the Dalidio/Prado Improvement to occur simultaneously with the Prado Road Overcrossing at Phase 2 would mitigate this impact.

**Traffic Signal Improvements: Phase 3**

The specific plan describes this infrastructure as driveway access controls along Dalidio/Prado for the proposed commercial lots. There are no anticipated impacts associated with the proposed timing of these improvements. However due to level of service and queuing impacts, mitigation for this access point is roundabout control, significant reconfiguration of Dalidio/Prado would be required if construction of the roundabout were to occur at Phase 3.

**Froom Ranch Way Bridge: Phase 3**

The specific plan describes this infrastructure as completing the Froom Ranch connection to the south providing access to LOVR. If this connection does not occur until Phase 3 all traffic from Phases 1 & 2 as well as left turning traffic from Prado Road to Froom Ranch Way would be forced to use the Dalidio & Madonna Intersection. This volume in combination with the volume already projected at the Dalidio & Madonna Intersection would cause a significant impact to the intersection reducing it to an unacceptable level of service. Changing timing of the Froom Ranch Way Bridge to occur as part of Phases 1&2 would mitigate this impact.

**Prado Road Bridge: After Specific Plan Buildout**

The specific plan describes this infrastructure as the Prado Road/ Hwy 101 Overcrossing (with or without full ramp access to Hwy 101). Operational assessment under both the existing and near term scenarios identified significant impacts at multiple segments, intersections, and interchanges without the overcrossing and NB ramps in place. Operational assessment under the cumulative scenario identified significant impacts at multiple interchanges without the SB ramps in place. Changing the timing of the Prado Road Overcrossing & NB Ramp to Phase 2 and the SB ramps to Cumulative would mitigate this impact.