Transportation Planning Fact Sheet

State Route (SR) 46 in San Luis Obispo County

Purpose of this Transportation Planning Fact Sheet:

Transportation Planning Fact Sheets provide one comprehensive summary document that captures physical, social, political, and development characteristics along State Routes and provides web links to various planning resources and documents. Fact sheets are to be used as supplemental planning documents to Transportation Concept Reports (TCRs) and to future Corridor System Management Plans (CSMPs).

Route Description:

According to the June 2009 *State Route 46 Corridor System Management Plan*, in San Luis Obispo County, SR 46 is approximately 61 miles in length and is divided into seven segments. It originates at its junction with SR 1, approximately 4 miles north of Cambria, and traverses northeasterly before intersecting US 101. At this point, the route continues north as double signed with US 101 for approximately 4 miles. In the City of Paso Robles, SR 46 digresses from US 101 in a northeasterly direction, traveling past the community of Shandon eastward toward the Kern County Line - reference map below. The route then continues through Kern County before terminating at SR 99 in the City of Bakersfield.

- Traffic: ranges between interregional, regional, rural and urban
- Access Control: transitions between conventional highway and expressway
- Functional Classification: alternates between rural and urban principal
- Terrain: rolling

Traffic Volumes:

- 2015 ADT: 4,600 - 29,300
- 2030 ADT: 6,700 - 42,600

Truck Traffic:

- Peak Hour: 2% -14%
- ADT: 3% - 17.5%

Route Designations:

- Focus Route
- Freeway and Expressway System
- High Emphasis Route
- Interregional Road System
- Scenic Highway System: Eligible Route
- Truck Restrictions: Terminal Access Route and SHELL Route

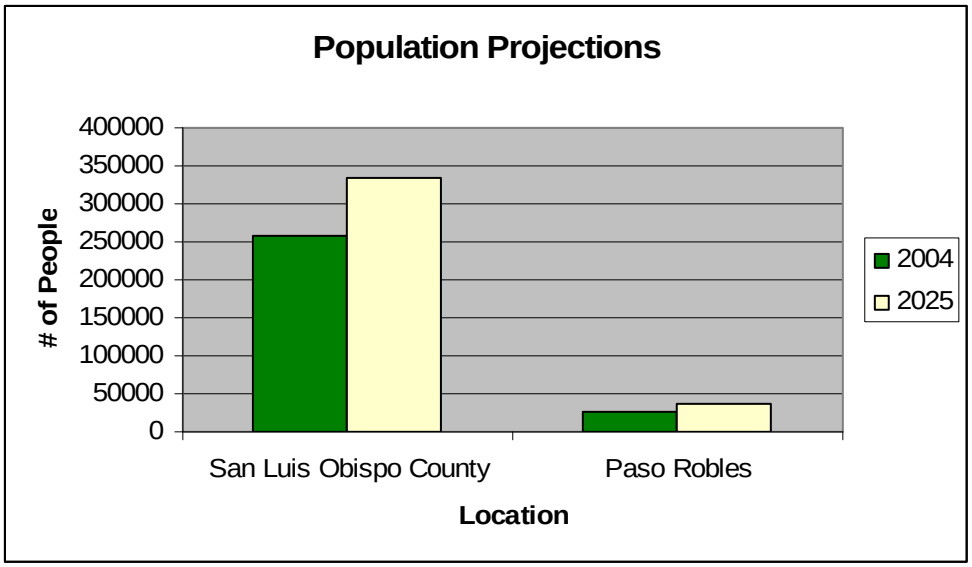
Future Concept:

According to the June 2009 *State Route 46 Corridor System Management Plan*, the future concept for SR 46 in San Luis Obispo County is defined by Level of Service (LOS):

Segment	Begin Postmile	End Postmile	Description	Future Concept
1	R0.15	R21.97	Junction Route 01/46W to South US 101/46W Interchange	*Reference* **"Notes:"** *Below*
2A	54.12 (US 101)	57.92 (US 101)	North of US 101/46W Interchange to US 101/46E Interchange	
2B	29.76	32.28	US 101/46 E Interchange to Airport Road	
2C	32.28	34.64	Airport Road to Jardine Road	
3A	34.64	48.62	Jardine Road to West Junction 41/46E	
3B	48.62	55.10	West Junction Routes 41/46E to East Junction SR 41/46E	
3C	55.10	60.85	East Junction Rotues 41/46E to San Luis Obispo/Kern County Line	
Notes:				
The existing SR 46 corridor includes a variety of facilities, modes and services that must be managed into a single multimodal system. Currently there are numerous projects that are in various stages of development within the corridor that address some of the deficiencies identified within the corridor. Until such time that a freeway is viable, management strategies will be implemented that will focus the effort to prolong the benefits of the projects programmed and the recommended concepts. These management strategies include: facility expansion, parallel road network development, intersection upgrades, operational improvements, modal options, intelligent transportation systems (ITS)/traveler information/traffic management/Incident management, transportation demand management, land use & transportation connection, maintenance and preservation, and system monitoring and evaluation.				

County Profile:

- San Luis Obispo County consists of seven incorporated cities. In San Luis Obispo County, SR 46 is located primarily within unincorporated area, with a small portion extending through the City of Paso Robles west of US 101 (web links connect to the city/county general plan).
- According to the San Luis Obispo Council of Governments (SLOCOG) 2005 *Regional Transportation Plan (RTP)*, San Luis Obispo County's annual growth rate is 1.24%. If this remains constant, population growth between 2004 and 2025 is expected to increase from 258,208 to 334,775 - reference chart below.



(SLOCOG, 2005 RTP)

- Approximately 15.2% of San Luis Obispo County residents speak another language other than English at home (US Census Bureau).
- San Luis Obispo County is a coastal area surrounded by the counties of Monterey, Kern, and Santa Barbara. According to the SLOCOG 2005 *RTP*, in the 1970's, the creation of new jobs in the San Luis Obispo region spurred an increasing growth trend in the area. Today this is further impacted by the migration of retired and semi-retired people to the area. Additionally, with the population boom of the 1970's, the proportion of people commuting by carpool, bike and transit has decreased, while individual car trips have increased. This trend has resulted in increased strain on the transportation systems in the region, projected to impact the Level of Service (LOS) at specific intersections and worsen congestion over time.

Bicycle Access:

- According to the 2009 *State Route 46 Corridor System Management Plan*, cycling is allowed on all public roads except where specifically prohibited such as on freeways. Consistently wide 8 foot shoulders are sufficient for accommodating bicycle use on the segment of SR 46 extending from SR 1 to US 101. The double signed segment of SR 46 with US 101 between SR 46W and SR 46E is not open to bicycle travel. The remaining segments east of US 101 see less bicycle travel than Segment 1, however bicycle access exists.
- According to the Caltrans-District 5 2004 *Bicycle Map: For State Highways of the Central Coast*, all of the State Highways are open to bicyclist except at a few sections of freeways. There are no restrictions for bicycle use on SR 46.
- According to the 2006 *San Luis Obispo County Bike Map*, 46 West from SR 1 to US 101 is designated as a Bike Lane Route.
- San Luis Obispo Council of Governments (SLOCOG) has yet to develop a regional bike plan. The County of San Luis Obispo's existing 2005 *County Bikeways Plan* is intended to be updated by 2010. The City of Paso Robles 2005 Bike Plan is currently being updated.

Public Transportation:

Public transit services along the SR 46 corridor include those listed below:

- Amtrak bus offers service from the Pine & 8th Street Rail Station in Paso Robles to Hanford and the San Joaquin Valley Rail Station in the Central Valley along SR 46.

- Greyhound offers intercity bus service between San Luis Obispo, Santa Maria, Santa Barbara, Ventura and Los Angeles.
- PR CATS offers service throughout the City of Paso Robles and includes fixed route services on their North County Shuttle from the SR 46/US 101 junction to the Cuesta College Campus.
- Dial-A-Ride provides curb to curb service anywhere in the City of Paso Robles
- San Luis Obispo Regional Transit Authority runabout provides ADA complimentary service

Park and Ride Lots:

A region wide inventory of park and ride lots conducted by SLOCOG in July 2008 found fifteen formal park and ride lots throughout the county. Nine are located in North County, two are located on the North Coast, one is located in Central County and three are located in South County.

Intercity Rail Service:

Amtrak serves San Luis Obispo County in providing rail and bus service from Los Angeles to Seattle. Their newly improved Coast Starlight train offers an all encompassing travel experience, complete with diner, sleeping and entertainment focused cars. Caltrans Pacific Surfliner also offers two trains a day with service from southern California to San Luis Obispo. The closest rail station to SR 46 in San Luis Obispo County is located within the corridor in the City of Paso Robles.

Airport:

Three airports are located throughout San Luis Obispo County and include: Paso Robles Municipal Airport (PRB), San Luis Obispo County Regional Airport (SBP) and Oceano County Airport (L52) Of these three, San Luis Obispo County Regional Airport (SBP) provides the most extensive public regional airline service in the County. The closest airports to SR 46 are PRB and SBP.

Transportation Agencies:

- San Luis Obispo Regional Transit Authority– MPO/Regional Transportation Agency
- South County Area Transit
- San Luis Obispo Regional Rideshare

CSMP Conceptual Recommendations:

According to *June 2009 State Route 46 Corridor System Management Plan, conceptual* recommendations for the segments of SR 46 are provided as follows:

Segment 1:

- Providing additional left-handed turn pockets to improve the operations at select locations is the long-term recommendation for this segment.
- In areas where wineries are located or permitted in the future, parallel local roads and driveway consolidation would be encouraged.

Segment 2A:

- The ultimate focus will be to widen US 101 to a six-lane freeway to accommodate projected traffic volumes. Other more specific recommendations for this segment include:
    - Operational Improvements such as auxiliary lanes and ramp metering
    - Reconstruct interchanges to increase capacity and accommodate future widening of US 101 to six lanes as operations and/or safety warrants
    - Improving the regional frontage and parallel road system, with emphasis on intercommunity connections
    - Improving the regional park-and-ride lot system and enhance transit express access
    - Implement recommendations of Central Coast ITS Plan when warranted
    - Improve and promote Transportation Demand Management measures

Segment 2B and 2C:

- Right-of-way preservation at the Union Road area and local road connections and extensions
- Develop a funding strategy for the long-term vision
- Develop a funding strategy for the construction of individual improvements, then initiate the Caltran's project development process and prepare a Project Study Report for projects on the State Highways
- *Local Road Extensions/Connections*:
    - Golden Hill Road extension to Dry Creek Road, via a bridge at Huerhuero Creek
    - Wisteria Lane extension to Airport Road
    - Union Road to Airport Road, via a bridge at Huerhuero Creek
- *Transit:* Expanded and/or new transit service within the corridor should be considered for the following locations:
    - Cuesta College – North County Campus
    - Airport Road Business Park
    - Chandler Ranch Area Specific Plan
    - Jardine Road
    - Shandon

  Additional transit locations should be developed in close coordination with the Regional Transportation Agency, the City of Paso Robles transit authority, and the Study partners to identify those locations that would best reduce singe-occupant-vehicle demand on the SR 46 E corridor.
- *Community Programs:* It is recommended that employers served by the corridor participate in a Transportation Demand Management Program. Currently, there is one such program in San Luis Obispo County that integrates all commute modes, the Transportation Choices Program.
- *Bike and Pedestrian Facilities:* It is recommended that locations for bicycle and pedestrian facilities be identified in the corridor.
- *Park and Ride Lots:* New and expanded park and ride facilities should be considered at the following locations:
    - Cuesta College- North County Campus
    - Airport Road Business Park
    - Chandler Ranch Area Specific Plan
    - Jardine Road
    - Shandon
    - Mid-State Fair Parking Lot

  Additional locations should be pursued that would best reduce singe occupant-vehicle demand on the SR 46 E corridor. It may be the case, locations for park and ride lots outside of the corridor may be effective for reducing trips within the corridor. Therefore, park and ride facilities within the corridor as well as outside of the corridor should be considered as mitigation for project specific traffic impacts.

Segment 3:

- Secure funding for the "Whitley 2" project segment (SR 46E Almond Drive to SR 46/SR 41 Junction).

Note: Reference section 3.4 of the June 2009 State Route 46 Corridor System Management Plan to find more information about currently programmed projects for segments 1 - 3

State Highway Projects:

For an updated list of State Highway projects (including State Transportation Improvement Plan/State Highway Operation and Protection Program) along SR 46 in San Luis Obispo County, click the Caltrans District 5 *Status of Projects* web link: http://www.dot.ca.gov/dist05/projects/pdf/d5sop.pdf

- For more information about Caltrans San Luis Obispo County highway projects, visit: http://www.dot.ca.gov/dist05/projects/#slo
- Transportation Projects identified in the SLOCOG 2005 Regional Transportation Plan: http://www.slocog.org/cm/Publications_and_Reports/Regional_Transportation_Plan.html

- Local Agency STIP Projects - Caltrans Local Assistance Website:
  http://www.dot.ca.gov/dist05/local/stip_index.html

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STATE ROUTE 46
CORRIDOR SYSTEM MANAGEMENT PLAN

SAN LUIS OBISPO COUNTY
JUNE 2009

CALTRANS

I recommend approval of this *Corridor System Management Plan* for State Route 46 in District 5 for the State Route 46 corridor.

Recommended Approval

5/20/09

AILEEN K. LOE Date
Deputy District Director
Planning & Local Programs

Recommended Approval

5/11/09

STEVE PRICE Date
Deputy District Director
Maintenance & Operations

I approve this *Corridor System Management Plan* for State Route 46 in District 5 as the overall Policy Statement and Strategic Plan that will guide transportation decisions and investments for the State Route 46 corridor.

Approval

6/19/09

RICHARD KRUMHOLZ Date
District Director

Approval

6/16/09

RONALD L. DE CARLI Date
Executive Director
San Luis Obispo Council of Governments

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
CHAPTER 1 INTRODUCTION TO THE STATE ROUTE 46 CSMP 1
1.1 What is a Corridor System Management Plan? 1
1.2 Need, Purpose, Goal and Objectives 5
1.3 Relationship to Other Plans 6
1.4 Stakeholder Participation 11
CHAPTER 2 CORRIDOR & TRANSPORTATION SYSTEM CHARACTERISTICS 12
2.1 Corridor Description 12
Route Segments 13
Route Designations 15
Environmental Setting 16
Goods Movement 17
2.2 Setting & Context 18
Demographics 18
2.3 Parallel Routes and Local Connections 20
2.4 Bicycle Access 22
2.5 Transit 23
2.6 Transportation Demand Management 25
Commuter Programs 25
Park and Ride Lots 26
2.7 Intelligent Transportation System (ITS) Strategies 27
Traffic Management Center 27
Existing ITS Elements 28
Planned ITS Features 28
CHAPTER 3 COMPREHENSIVE CORRIDOR PERFORMANCE ASSESSMENT 31
3.1 Safety 31
Incident Management 35
3.2 Operations 36
Deficiencies 39
3.3 Corridor Maintenance and Preservation 44
3.4 Corridor Management Strategies 46
Management Strategies 46
Programmed Projects & Conceptual Recommendations 47
SOURCES CONSULTED 58
APPENDIX A: DEFINITION OF TERMS 59
APPENDIX B: CSMP MANAGEMENT TEAM LIST 64
APPENDIX C: ANALYSIS METHODOLOGY 65
APPENDIX D: STATE ROUTE 46 EAST COMPREHENSIVE CORRIDOR STUDY 69
APPENDIX E: SLOCOG STAFF REPORT & CSMP APPROVAL 71

LIST OF FIGURES

Figure 1.1 *CSMP Corridors in Caltrans District 5* 3
Figure 1.2 *State Route 46 CSMP Corridor Limits* 4
Figure 1.3 *Strategic Growth Plan* 6
Figure 1.4 *Planning Area Boundaries for San Luis Obispo County* 8
Figure 2.1 *State Route 46 in California* 12
Figure 2.2 *State Route 46 Segment Summary* 14
Figure 2.3 *Parallel Route and Local Road Connection* 21
Figure 2.4 *Existing Transit Facilities* 24
Figure 2.5 *Existing Intelligent Transportation Systems* 30
Figure 3.1 *State Route 46 Corridor Collision Data* 32
Figure 3.2 *Pictorial of the six levels of service (Mainline)* 36
Figure 3.3 *Pavement Conditions on SR 46* 45
Figure 3.4 *Programmed Highway Projects within the SR 46 Corridor* 51

LIST OF TABLES

Table 1.1 District 5 Projects with Proposition 1B Funding 2
Table 1.2 San Luis Obispo County Area Plan Circulation Recommendations to SR 46 7
Table 2.1 State Route 46 CSMP Segment Summary 13
Table 3.1 Collision Data for SR 46 Corridor in San Luis Obispo County 31
Table 3.2 Intersection Collision Data for Segment 1 33
Table 3.3 Intersection Collision Data for Segment 2A 34
Table 3.4 Segment 2B Mainline Collision Data 34
Table 3.5 Segment 2B Intersection Collision Data 35
Table 3.6 SR 46 Average Annual Daily Travel (ADDT) Summary 37
Table 3.7 SR 46 Level of Service (LOS) Summary 37
Table 3.8 SR 46 Travel Time Summary: Segments 1, 2A, 2c & 3 38
Table 3.9 SR 46 Travel Time Summary: Segment 2B 39
Table 3.10 SR 101 Existing Intersection Peak Hour Levels of Service 40
Table 3.11 SR 101 Level of Service (LOS): 2010 & 2030 Weekday A.M. Peak 41
Table 3.12 Pavement Conditions on SR 46 in San Luis Obispo County 44
Table 3.13 Programmed Highway Projects on the SR 46 Corridor 50
Table 3.14 SR 46E CCS Recommendations & Implementation 54
Table 3.14 SR 46E CCS Recommendations & Implementation (Continued) 55
Table 3.14 SR 46E CCS Recommendations & Implementation (Continued) 56
Table 3.15 SR 46 Corridor Improvement Project 57
Table 3.16 Segment 3 Level of Service (LOS) with the CMIA Project 57

EXECUTIVE SUMMARY

Caltrans and our partners are taking a dynamic turn in transportation planning with the creation of Corridor System Management Plans (CSMPs) for corridors associated with the Corridor Mobility Improvement Account (CMIA) funds. CSMP development recognizes the importance of multi-jurisdictional collaboration, to best support and manage multi-modal transportation services and facilities for the traveling public. Californians rely on transportation facilities and services to get to business, recreational, and service destinations, regardless of which agency may operate or fund a facility or service.

The CSMP approach is consistent with the goals and objectives of the Governor's *Strategic Growth Plan,* including public accountability for bond funded projects. The CSMP outlines a foundation to support partnership based, integrated corridor management of various travel modes (transit, cars, trucks, bicycles) and infrastructure (rail tracks, roads, highways, information systems, bike routes), to provide mobility in the most efficient and effective manner possible. This approach brings facility operations and transportation service provision together with capital projects into a coordinated system management strategy that focuses on high demand travel corridors such as State Route 46 (SR 46). This CSMP directly supports the implementation of the ***"SR 46 Corridor Improvement Project – Whitley 1"*** CMIA project in the corridor, which includes widening a portion of SR 46 from two-lanes to a four-lane divided expressway from Geneseo Road Almond Drive.

The objectives of the CSMP are to improve safety on the transportation system, reduce travel time or delay on all modes, reduce traffic congestion, improve connectivity between modes and facilities, improve travel time reliability, and expand mobility options along the corridor in a cost effective manner. The CSMP identifies key stakeholders, the managed network, current management strategies, existing travel conditions, major challenges to maintaining and improving mobility, and potential future management strategies and capital improvements. The managed transportation network for this *SR 46 CSMP* includes the portion of SR 46 that begins at the intersection with State Route 1 on the coast to the Kern and San Luis Obispo County lines, as well as select parallel and connector roadways, transit facilities that include express and regional bus services, and bike routes that are located roughly parallel to the corridor.

Key sections of this CSMP are described as follows:
Corridor & Transportation System Characteristics: Describes the existing corridor management activities, including all facilities and services currently in use. Given the somewhat rural nature of the corridor, there are very few system management strategies in operation along the SR 46 corridor. System management strategies in use include traffic operations system elements such as traffic signals and weigh-in motion sensors, as well as system management facilities and, park-and-ride lots, and transportation demand activities.

Comprehensive Corridor Performance Assessment: Evaluates system performance to better monitor outcomes for corridor management and investment decision-making, including the most appropriate system operational strategies and capital improvements. Performance measures utilized to evaluate corridor performance and identify specific deficiencies along the corridor are

specific baseline performance measurement level of service, delay, distressed pavement, and collision rate data by location that supports the mobility challenges findings.

Corridor Management Strategies: Includes a primary set of strategies and capital improvements that respond to the major corridor mobility challenges to achieve a better managed corridor network. Through collaboration and partnership, there are currently capital projects within the corridor that address existing deficiencies, the CSMP takes it one step further to look at conceptual recommendations that will prolong the investments made in the corridor and enhance the long-range vision.

The primary goals of the SR-46 CSMP are to develop strategies to manage the corridor before considering expansion, and sustain existing transportation investments made within the corridor. The SR 46E CCS multi-agency partnership successfully established goals which include: supporting the economy, enhancing public safety and security, reflecting community values and enhancing the environment. The following management strategies will be used to obtain these goals and manage SR 46 over the next 20 years:

Facility Expansion: The focus is to improve mobility and reliability, reduce congestion, improve safety and facilitate goods movement by expanding and managing the existing system. Existing studies have demonstrated that US 101 will need to be widened to six-lanes in the City of Paso Robles. Further studies determined that by 2040 or beyond it will be necessary to increase the number of lanes from four to six and convert the expressway to a freeway in the SR 46 East urbanized segment between the US 101/SR 46 East Interchange and Jardine Road. In order to accommodate projected traffic and increased facility expansion on US 101 and SR 46, it will also be necessary to expand the US 101 /SR46 East Interchange.

Parallel Road Network Development: The focus is to increase the capacity on the parallel road network to reduce local traffic on SR 46.

Intersection Upgrades: Existing traffic studies demonstrate that the existing intersections are failing in the near-term. The focus is to redesign and modernize the intersections to reduce delay, that would maximize mainline throughput. These upgrades could include improving the local road network, adding turn-movement storage, deceleration and/or acceleration lanes to the intersection, and converting at-grade intersections to grade-separated intersections.

Operational Improvements: The focus is to add auxiliary lanes, intersection improvements, better signage and lighting and other system refinements in order to reduce delay, preserve and enhance existing services and improve safety.

Modal Options: The focus is to provide viable transportation options for all users. Greater opportunity to use other transportation modes will reduce demand on SR 46. This includes facilitating and supporting the integration of transit, bicycle, and pedestrian transportation into a coordinated multimodal transportation system.

Intelligent Transportation Systems (ITS)/Traveler Information/Traffic Management/Incident Management: The focus is to upgrade communication and enable deployment of advanced transportation systems, to improve safety, incident response, and traveler information. Real time traveler information allows travelers to make more informed decisions regarding trip planning, route choices and mode selection. Traffic management reduces congestion through the use of technologies such as collision warning systems and advanced traffic management systems. Incidents are the primary cause of unexpected and variable delay. By improving incident management and response time, reductions occur in congestion and travel delay.

Transportation Demand Management: The focus is to reduce congestion by encouraging programs that increase the use of transit, improve bicycle and pedestrian access and encourage programs such as carpools, ridesharing, telecommuting, and park-and-ride facilities to reduce the demand.

Land Use & Transportation Connection: The way communities are planned and designed has an impact on travel behavior. Land use and transportation must be more closely linked. To achieve this strategy, Caltrans will partner with local agencies and assist in the development review process. This process has two main elements: general plans and development projects. An additional opportunity to partner and facilitate a connection between land use and transportation is the Regional Blueprint Program: *Community 2050*. The program was designed to integrate long-range planning for transportation, land use, housing, environmental resources, and infrastructure. The ultimate goal of blueprint planning is to facilitate consensus around a regional vision and preferred land use scenario that will enable the region to accommodate future growth while minimizing adverse impacts. The emphasis of the land use and transportation planning connection is becoming a priority for the State and new legislation such as SB 375 is implemented in the MPO areas.

Maintenance and Preservation: The focus is maintenance and preservation designed to get full return on system investments, reduce traveler costs, and reduced traveler and goods delay. Work in this area would include fully implementing the pavement management system, using innovations that improve the quality and durability of pavement, and incorporating higher-performance, lower maintenance facility features.

System Monitoring and Evaluation: The focus is to install real-time detection and to enhance data analysis and assessment. This allows for better management of existing traffic, as well as development of projects that better alleviate problems.

CHAPTER 1 INTRODUCTION TO THE STATE ROUTE 46 CSMP

1.1 What is a Corridor System Management Plan?

A Corridor System Management Plan (CSMP) is a planning tool that maximizes efficient and effective mobility in a corridor. It is partnership-based and integrates management of various travel modes (transit, cars, trucks, bicycles) and infrastructure (roads, highways, information systems, bike routes). The CSMP establishes a process to manage a set of transportation components within a corridor to be managed as a system rather than as independent units. As California shifts towards more performance-based planning documents, CSMPs will become an essential tool for protecting current and future infrastructure investments as well as coordinating a multi-modal approach to corridor improvements. The CSMP will evolve with changing development patterns, travel demands, and technological innovations. This CSMP is the "first generation CSMP," to be followed by updates as information is collected over time.

The CSMP focuses on strengthening partnerships, gathering and analyzing data, monitoring the transportation system performance, implementing operational strategies, and identifying strategic capital investment. The objectives of the CSMP are to reduce travel time or delay on all modes, reduce traffic congestion, improve connectivity, and expand mobility options along the corridor in a cost effective manner. The CSMP identifies key stakeholders, the transportation network, current management strategies, existing travel conditions, major challenges to maintaining and improving mobility, and potential future management strategies and capital improvements.

The CSMP is consistent with the San Luis Obispo Council of Governments (SLOCOG) Regional Transportation Plan (RTP), general plans, regional blueprint planning, and multimodal planning. The CSMP includes all projects listed in the current RTP, *Vision 2025*. CSMPs will assist in fulfilling the goals recently enacted by legislation such as Assembly Bill 32 that addressed air quality and green house gas emissions and Senate Bill 375 that addresses land use. The CSMP also supports Caltrans policy such as Deputy Directive (DD) 64, *Complete Streets*.

CSMPs are being prepared for corridors associated with the Corridor supported by the ***Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Ac***t of 2006, Proposition 1B. The location of each of the three CSMP corridors within the Caltrans District 5 service area are depicted below in Table 1.1 and *Figure 1.1* identifies the projects associated with the respective corridor. The CSMP for State Route 46, *Figure 1.2*, is created for the Proposition 1B funds that have been allocated for the widening of State Route (SR) 46 from 2 lanes to 4 lanes from Geneseo Road to Almond Drive, a project that is known as Whitley 1. Maximizing the throughput on the mainline and providing local connectivity will prolong the capital investments along the corridor. The total bond funding in the project is $67.7 million.

Table 1.1 District 5 Projects with Proposition 1B Funding

District 5 Projects with Proposition 1B Funding			
Route	**County**	**Project Description**	**Funding Allocated**
1	Santa Cruz	Morrisey to Soquel Auxiliary Lanes	$12.7 million
1	Monterey	Salinas Road Interchange	$37 million
46	San Luis Obispo	SR 46 Widening (Whitely 1)	$67.7 million
101	Santa Barbara	Mussel Shoals to Casitas Pass, High Occupancy Vehicle (HOV) Lanes	$131.6 million

Figure 1.1 CSMP Corridors in Caltrans District 5

Figure 1.2 State Route 46 CSMP in District 5

This CSMP is based on technical information that is divided into three chapters:

- Chapter 1: Provide an overview of the corridor system management planning process. Provide a definition of the CSMP transportation network, including rationale for the selection of the specific corridor limits and modes to be included in the corridor planning process.

- Chapter 2: Describe existing corridor management activities, including all facilities and services currently in use to maximize mobility within the and through the corridor, such as traffic operations system elements, traveler information services, and transportation demand management programs.

- Chapter 3: Provide an assessment of current corridor performance by identifying the major problems inhibiting efficient corridor operations for each element (mode) of the CSMP transportation network.

1.2 Need, Purpose, Goal and Objectives

The RTP, *Community 2050* (blueprint planning), and local general plans address large areas of a region. Transportation Concept Reports (TCRs), transit plans and capital improvement programs do not typically mix operational strategies and capital projects across agencies, inclusive of all modes, along a corridor that extends many miles. There are not standard planning processes and documents that provide this system approach on a corridor basis. This leads to inefficiencies and conflicts between modes and among jurisdictions, resulting in individual travelers impacted by longer travel times and higher travel costs.

There is a **need** for a planning approach that coordinates transportation facility operations and service with capital projects to produce a seamless transportation system focusing on high-demand corridors, such as SR 46. The **purpose** of the CSMP is to create a partnership planning process and resulting guidance document that focuses on system management strategies that coordinate all the individual transportation modes and that includes performance measures to track the effectiveness of the strategies and projects. The **goal** of the CSMP is to improve mobility along SR 46 corridor by the integrated management of the transportation network including the selected highway, parallel/connector roadways, transit, bicycle, and travel demand management components of the corridor. Managing the facilities in a multi-modal approach will ensure that investments made in the corridor can be prolonged over time. The **objectives** of the CSMP are to improve safety, reduce travel time delay, improve connectivity, and expand mobility options along the corridor in a cost effective manner. Implementation of the CSMP will improve safety on the transportation system and improve connectivity to jobs, housing, and commerce.

1.3 Relationship to Other Plans

State Planning

The CSMP approach is consistent with the goals and objectives of the Governor's Strategic Growth Plan, which among other things commits to minimizing increases in traffic congestion. Key elements of the strategy are illustrated in Figure 1.3.

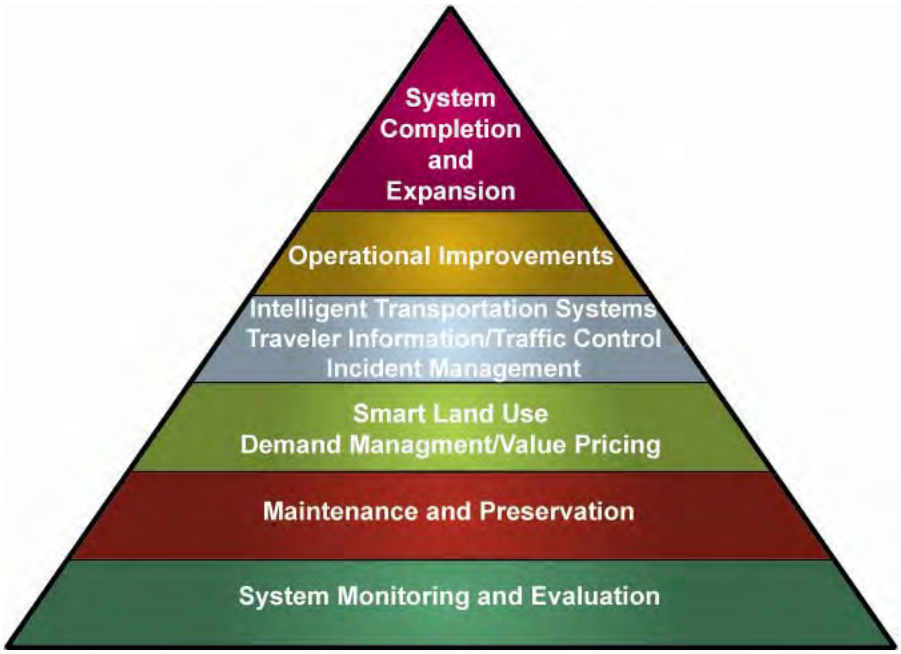

Figure 1.3 Strategic Growth Plan

At the base of the pyramid, and the foundation of transportation system management, is system monitoring and evaluation. It is essential to understand what is happening on the transportation system so that the best decisions can be made based on reliable data. The next few layers up the pyramid are focused on making the best use of existing resources and reducing the demand for new transportation facilities, particularly for peak hour travel. The top layer of the pyramid is system expansion. This layer assumes that all the underlying components are being addressed and that system capacity expansion investments are necessary.

In addition to the Governor's Strategic Growth Plan, there are a number of state planning documents that have been used as the foundation for the preparation of this CSMP. Baseline analysis and state system components were identified and defined using planning documents prepared by Caltrans, which include the *2006 California Transportation Plan* (CTP), the *1998 Interregional Transportation Strategic Plan* (ITSP), and several Caltrans District 5 plans that include the *2005 District System Management Plan* (DSMP), the 2*008 State Route 46 Transportation Concept Report* (TCR), and the 2009 *State Route 46 East Comprehensive Corridor Study* (SR 46E CCS). The CSMP is a more comprehensive partnership based approach to corridor analysis. This CSMP will supersede the SR 46 TCR.

Through a collaborative planning effort, the *State Route 46 East Comprehensive Corridor Study* (SR 46E CCS*)* developed a long-term vision for this stretch of the corridor, by identifying priority locations for long-term improvement, local connectivity, travel demand management strategies, and areas for right-of-way needs. The recommendations outlined in the SR 46E CCS will be incorporated into this CSMP to carry forward the recommendations developed between the partners as well as provide a consistency among the various planning documents.

Regional Planning

At the regional level, SLOCOG has developed *Vision 2025*, San Luis Obispo County's Regional Transportation Plan (RTP). *Vision 2025* is this region's long-range plan for the transportation system, the foundation of this plan lies in better connecting our highways, transit, bicycle/pedestrian, and local road networks to housing, jobs and commerce. The RTP builds upon the existing transportation system and the major projects and programs in progress, while looking toward the future and identifying needs and priorities. The RTP is currently being updated, which is expected to be completed in June 2010. The CSMP is consistent with the existing RTP and Caltrans will continue to work collaboratively with SLOCOG to ensure that subsequent updates are incorporated and consistent in this document.

SR 46 runs through the unincorporated community planning areas of Shandon, El Pomar-Estrella, Salinas River, Adelaida, and the North Coast in San Luis Obispo County, refer to *Figure 1.4*. Development of San Luis Obispo County's Community Area Plans identifies improvements to adjacent highways to improve local access, reduce demand and improve local circulation. The following Table 1.2, identifies recommended improvements to SR 46. As shown, the Salinas River Area Plan does not currently reflect the recommendations of the SR 46E CCS, rather it recommends an interchange improvement at Airport Road. As a partner in the development of the SR 46E CCS recommendations, the County will update the Salinas River Area Plan to be consistent with the recommendations outlined in the SR 46E CCS.

Table 1.2 San Luis Obispo County Area Plan Circulation Recommendations to SR 46

San Luis Obispo County Area Plan Circulation Recommendations to SR 46	
Area Plan	**Recommendations**
Shandon-Carrizo, 2003**	Remove undedicated potential access to SR 46 from River Road, Grace Drive and Artesia Drive.
El Pomar-Estrella, 2003	Widen SR 46 to four-lanes
Salinas River, 2007	Construct a full grade-separated interchange at the intersection of Airport Road. East of Branch Road widen to four-lanes to the east junction of SR46/SR41.
Adelaida, 2003	Provide funding for left-turn channelization at SR 46W and Vineyard Drive and Oakdale Road.
North Coast, 2008	No proposed recommendation to SR 46

***Please note: San Luis Obispo County has recently undertaken an update to the 2003 Shandon-Carrizo Area Plan, recommendations area derived from the approved 2003 area plan.*

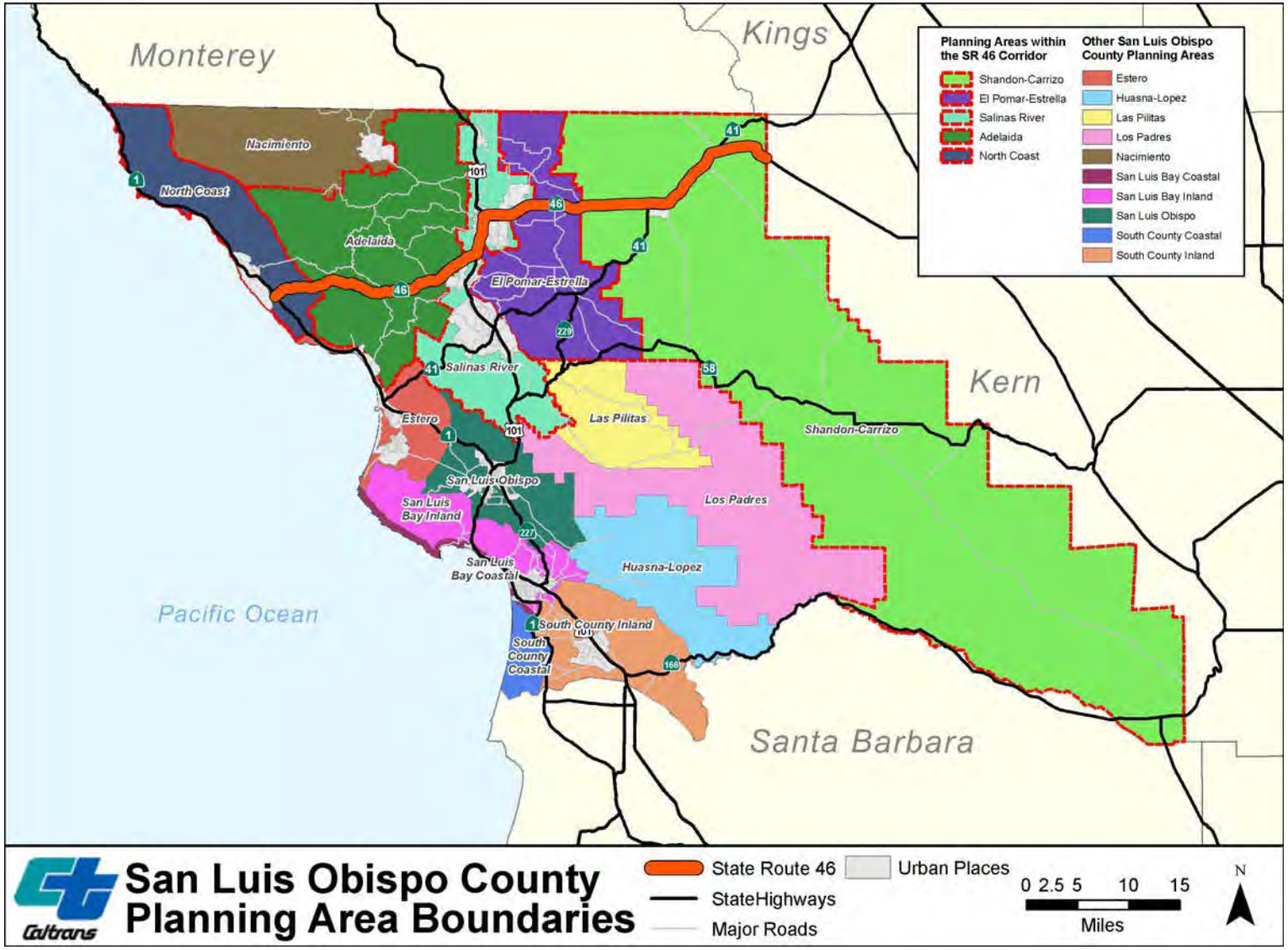

Figure 1.4 Planning Area Boundaries for San Luis Obispo County

Local Planning

Locally, the Circulation Element (2003) of the City of Paso Robles' General Plan identifies the future of SR 46E as either a four-lane freeway or six-lane expressway from SR 101 to Golden Hill Road. While widening is discussed as a feasible improvement, the General Plan indicates that alternative corridor solutions, such as interchange placement, needs to be studied. The City's plan also makes reference to the outcome of the SR 46E CCS to refine this determination. In addition, the City has completed the State Route (SR 46E) Parallel Routes Study. This Study considers possible local road connections that could relieve congestion and improve connectivity of the local street network, as well as SR 46E through Paso Robles. Study findings will be used in guiding the update of the City's Circulation Element, which is expected to be complete in 2009. The outcomes of the SR 46E CCS and Parallel Route Study are incorporated into the CSMP to provide consistency and demonstrate partnership between the agencies.

Air Quality Planning

Corridor System Management seeks to create conditions where vehicle flow on highways and roads occurs at a steady pace and travelers have a range of mobility options that enable them to travel other than by single occupant vehicle. System expansion is focused only where needed when travel demand exceeds the capacity of a well managed existing system. These conditions are beneficial to attaining air quality goals and reducing green house gas emissions. California first addressed climate change in 1988 with the passage of Assembly Bill (AB) 4420. This bill directed the California Energy Commission (CEC) to study global warming impacts to the state and develop an inventory of greenhouse gas emissions sources. In 2000, Senate Bill (SB) 1771 established the California Climate Action Registry to allow companies, cities and government agencies to voluntarily record their greenhouse gas emissions in anticipation of a possible program that would allow them to be credited for early reductions. In 2001, the United Nations' Intergovernmental Panel on Climate Change (IPCC) reported that "there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities." The following year, AB 1493 was signed into law, requiring California Air Resources Board (CARB) to develop regulations to reduce greenhouse gas emissions from passenger vehicles, light-duty trucks and non-commercial vehicles sold in California.

Recognizing the value of regional partners in addressing climate change, the governors of California, Washington, and Oregon created the West Coast Global Warming Initiative in 2003 with provisions for the states to work together on climate change-related programs. Two years later Governor Schwarzenegger signed Executive Order S-3-05, calling for the State to reduce greenhouse gas emissions to 1990 levels by 2020 and to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. The 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 greenhouse gas emissions reduction goal represents the level scientists believe is necessary to stabilize climate. In addition to establishing greenhouse gas emissions reduction targets for California, Executive Order S-3-05 established the Climate Action Team (CAT) for State agencies in 2005. Chaired by the Secretary of the California Environmental Protection Agency (CalEPA), the CAT has helped to direct State efforts on the reduction of greenhouse gas emissions and engage key State agencies including participation by Caltrans.

Lastly, in 2006, the Legislature passed and Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. It directed ARB to begin developing discrete early actions to reduce greenhouse gases while also preparing a Scoping Plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to become operative by 2012.

AB 32 includes a number of specific requirements for California Air Resources Board (CARB):

- Identify the statewide level of greenhouse gas emissions in 1990 to serve as the emissions limit to be achieved by 2020.
- Adopt a regulation requiring the mandatory reporting of greenhouse gas emissions.
- Identify and adopt regulations for *Discrete Early Actions* that could be enforceable on or before January 1, 2010.
- Ensure early voluntary reductions receive appropriate credit in the implementation of AB 32.

In response to AB 32, the CARB, as lead agency, has developed and approved the *Climate Change Scoping Plan,* which outlines the State's plan to achieve the 2020 green house gas emissions limit. According to the CARB, transportation accounts for nearly 38 percent of the green house gas emissions that are released, for this reason Caltrans has been an integral partner in addressing and implementing the State's strategy.

In addition to AB 32, recent legislation through State Bill (SB) 375 requires the California Air Resources Board (ARB) to set regional targets for the purpose of reducing greenhouse gas emissions from passenger vehicles, for 2020 and 2035. If regions develop integrated land use, housing and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review requirements of the California Environmental Quality Act (CEQA). The targets apply to the regions in the State covered by the 18 metropolitan planning organizations (MPO's). SB 375 relies upon regional planning processes already underway in MPOs in the state to accomplish its objectives. The provisions related to GHG emissions only apply to the MPOs in the state. Most notably, the measure requires the MPO to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP), which sets forth a vision for growth for the region taking into account the transportation, housing, environmental, and economic needs of the region. The SCS is the blueprint by which the region will meet its GHG emissions reductions target if there is a feasible way to do so. Currently SLOCOG, the MPO for San Luis Obispo County, has undertaken a blueprint planning through the *Community 2050*, which will address SB 375.

The new law will require the cooperation of CARB, CTC, Caltrans and the State Department of Housing and Community Development (HCD). SB 375 takes a step to by connecting the Regional Housing Needs Allocation (RHNA) to the transportation planning process. While these state agencies will be involved in setting the targets and adopting new guidelines, local governments and the MPOs will not only provide input into setting the targets, but will serve as the lead on implementation. Member cities and counties working through their MPOs are tasked with development of the new integrated regional planning and transportation strategies designed to meet the GHG targets.

1.4 Stakeholder Participation

Prior to undertaking the CSMP for SR 46, an effort was underway that was focused on the most congested segment of SR 46, the urban area between the interchange at US 101 and SR 46 E to Jardine Road. This study, the *State Route 46 East Comprehensive Corridor Study* (SR 46E CCS), had an extensive agency partnership and public engagement approach that identified values and priorities, addressed mobility improvement throughout this corridor, and produced strategies for transportation solutions for this segment.

The effort that was undertaken by the SR 46E CCS is incorporated into this CSMP. To achieve the goal of consistency among planning documents, coordination with agencies that have land use authority or funding authority is important. The extensive effort in the development of the SR 46E CCS has achieved that goal. The following outline details the approach used in this process for raising issues, sharing information, problem solving, and decision-making during the development of the corridor study.

The jurisdictions with decision-making authority for transportation, land use and funding planning were comprised of representatives from the following agencies:

- City of Paso Robles
- County of San Luis Obispo
- San Luis Obispo Council of Governments
- Caltrans and/or the California Department of Transportation (District 5)

The development of community values, mobility interests, corridor priorities, and funding priorities were established in a multi-agency collaborative approach. One task of the partners was to develop an appropriate outreach plan to all other interested stakeholders. The public outreach effort was implemented as a process to mobilize, engage, and inform by bringing together citizens, public officials, business leaders and community leaders to do the following:

1. Engage community members in an authentic dialogue about the purpose of long-range transportation planning within the corridor.
2. Gain a shared sense of community interest and concern.
3. Address misconceptions and obstacles.
4. Enhance mutual understanding of shared goals and issues.
5. Create conditions that will improve the ability to prioritize and identify mobility interests, thus addressing the needs of the corridor.

A variety of strategies were implemented to achieve the goals of the public engagement plan, such as:

- A Website Forum (www.46eastforthefuture.org)
- Community Workshops
- Media Publications
- Radio – Interviews with Q & A
- Status updates during community meetings
- Walking door to door through neighborhoods and commercial areas
- Speaking to community groups

CHAPTER 2 CORRIDOR & TRANSPORTATION SYSTEM CHARACTERISTICS

2.1 Corridor Description

SR 46 is a major interregional route that connects the Central Coast with the San Joaquin Valley and accommodates interregional, regional, rural, and urban traffic. SR 46 runs east-west through Caltrans Districts 5 and 6, starting at the junction of State Route 1 in San Luis Obispo County and ending at Route 99 in the Central Valley (Kern County), as displayed in *Figure 21*. State Routes 1, 101 and 41 connect with 46 (west to east) in San Luis Obispo County. Additionally, SR 46 has the highest traffic volumes within the Central Coast.

In District 6, SR 46 passes through western Kern County into the Central Valley as a 2 to 4 lane expressway. SR 46 terminates at SR 99 north of the City of Bakersfield. The District 6 Transportation Concept Report for SR 46 calls for a 4-lane expressway concept for its entire length. The District 6 CSMP was finalized in July 2008 for improvements between Kecks Road and SR 33 in Kern County, the funding allocated for this project was $95 million. Each district identified deficiencies and priorities and coordination between the districts took place to ensure that a consistent linkage was made at the county line.

Figure 2.1 State Route 46 CSMP in California

Route Segments

In District 5, SR 46 is divided by a segment of US 101 that connects the SR 46 West and SR 46 East sections (Table 2.1 and *Figure 2.2*). The SR 46 West segment describes that section of SR 46 that is west of US 101 and runs from US 101/SR 46 West interchange to Highway 1. SR 46 East describes the section of this route begins on US 101 north of the US 101/46 West Interchange and extends to the San Luis Obispo/Kern county line. The State Route 46 corridor has further been divided into three main segments. Segments were developed based on urban boundaries, changes in functional classification, significant changes in terrain, and changes in the function or use of the route. There is some boundary overlap for segments along this corridor.

Table 2.1 State Route 46 CSMP Segment Summary

State Route 46 Segment Summary			
Segment	**PM Begin**	**PM End**	**Description**
1	R0.15	R21.97	Junction Route 01/46W to South US 101/46W Interchange
2A	54.12 (US 101 break)	57.92 (US 101)	North of US 101/46W Interchange to US 101/46E Interchange
2B	29.76	32.28	US 101/46E Interchange to Airport Road
2C	32.28	34.64	Airport Road to Jardine Road
3A	34.64	48.62	Jardine Road to West Junction 41/46E
3B	48.62	55.10	West Junction Routes 41/46E to East Junction SR 41/46E
3C	55.10	60.85	East Junction Routes 41/46E to San Luis Obispo/Kern County Line

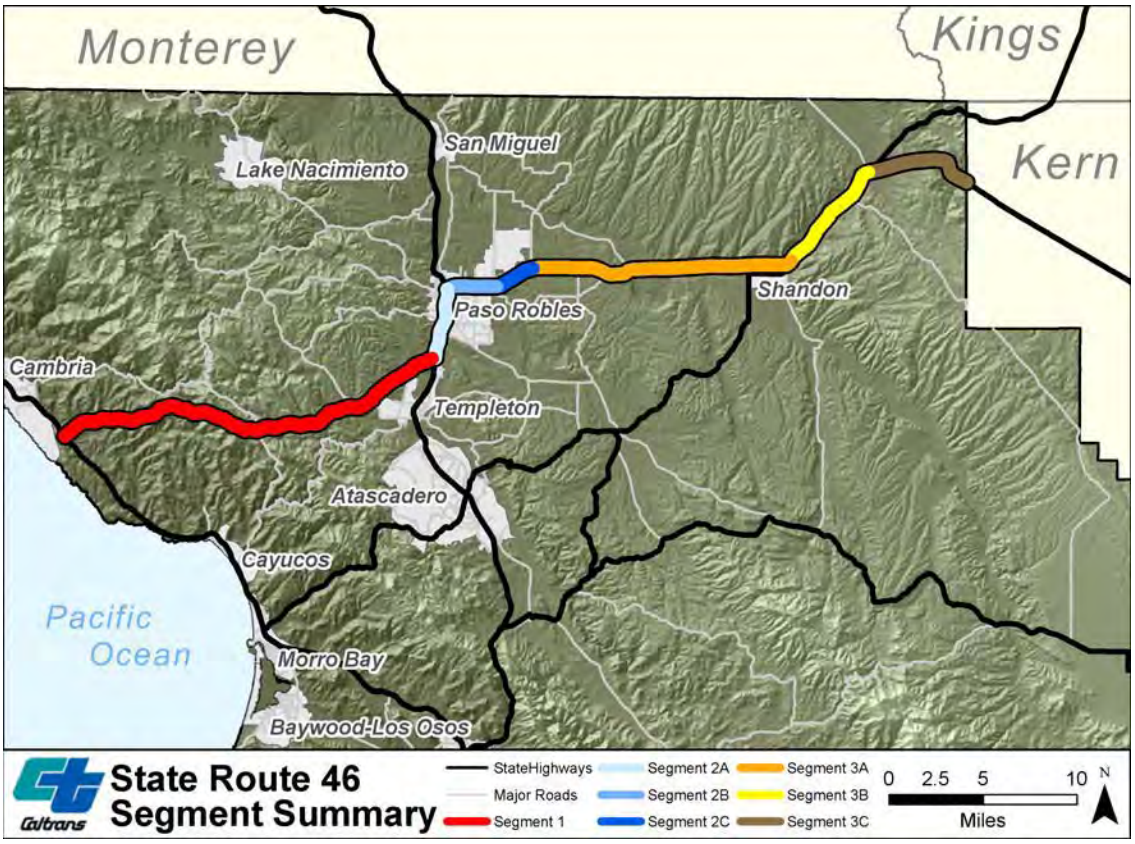

Figure 2.2 State Route 46 Segment Summary

Segment 1

Segment 1 of SR 46 originates at the junction with SR 1, approximately 4 miles south of Cambria, an unincorporated community in the North Coast. From SR 1, the segment climbs into the Santa Lucia mountain range, passing productive agricultural fields and grazing lands. From the crest of the mountains, the route winds down toward the Salinas River Valley and the south end of the City of Paso Robles. Extensive vineyards and several wineries are located along the eastern portion of Segment 1. Scattered residential and agricultural uses are predominate in this segment. As SR 46 approaches its junction with US 101, a major shopping and hotel complex is located at the end of the segment, adjacent to the southwest quadrant of the SR 46-West/101 interchange.

Segment 2

This segment begins on US 101 at the northern terminus of the 101/46 West interchange and continues to Jardine Road along SR 46E on the edge of Paso Robles' urban boundary. Regional and local traffic will continue to grow with the build-out of the City of Paso Robles' General Plan. A number of regionally significant land use proposals are currently being considered along or near this section of SR 46 East, which would increase demand on this segment of highway. More than 2,000 residential lots and more than 1,000 acres of new commercial, office, industrial, and recreational development are anticipated in the vicinity of Segment 2 by the year 2025. The

current enrollment at the Cuesta College North Campus, which opened in 1998, is less than 3,000; enrollment of 12,000 is projected at build-out.

Owing to the growth of traffic and attendant concerns related to safety, operations, and capacity, Segment 2 has been a focus of concern for the Department, the City of Paso Robles, and the San Luis Obispo Council of Governments (SLOCOG) in recent years. Segment 2 was the subject of the recently released *State Route 46 East Comprehensive Corridor Study* (SR 46E CCS) prepared by Caltrans.

Segment 3

Segment 3 begins at Jardine Road and ends at the San Luis Obispo/Kern County line. Sub segment 3A extends to PM 48.6 near the community of Shandon. State Route 41 joins SR 46 at this point. The two routes are double signed over Sub-segment 3B, which ends just past the community of Cholame, at the east junction of State Routes 46 and 41. From this point, SR 41 diverges to the northeast, while Sub-segment 3C of SR 46 continues to the county line, which is also the east boundary of District 5. Segment 3 carries primarily interregional traffic east and west between the Central Coast and Central Valley through areas of agriculture, grazing land, and open space.

Route Designations

The following designations and classifications provide information regarding the facility itself and its intended use. They also indicate the availability of special purpose funding related to the designation.

The Federal functional classification of SR 46 is Rural Minor Arterial/Rural Other Principal Arterial and Urban Minor Arterial/Urban Principle/Urban Other Principle Arterial. This classification recognizes trip lengths and travel densities that are indicative of substantial statewide and interstate travel as SR 46 passes through rural areas and serves trips between the Central Coast and Central Valley regions. SR 46 is designated as a Federal Aid Primary Route for its entire length.

The US Department of Defense, in cooperation with the US Department of Transportation, has identified SR 46 East as a Strategic Highway Corridor Network (STRAHNET) route. STRAHNET is a network of linked highways deemed essential to national defense for facilitating the movement of troops and equipment to airports, ports, rail lines and military bases.

SR 46 is on the Interregional Road System (IRRS) and SR 46 East is a designated Focus Route and High Emphasis Route in the Department's 1998 Interregional Transportation Strategic Plan (ITSP). The ITSP states that facility standards required for SR 46 East to meet the Focus Route concept are a 4-lane freeway from the 101/46 East junction to the future Dry Creek Road intersection and a 4-lane expressway from that point on to the San Luis Obispo/Kern County line. SR 46 East is also part of the National Highway System and is Scenic Highway System Eligible.

On January 1, 1998, California Senate Bill 45 created an Interregional Improvement Program (IIP) for which the Department submits projects in specified categories. The IIP funds project components that serve interregional movement of people and goods, including state highway projects on the IRRS. Because of the Focus Route designation, projects located along SR 46 receive a higher funding priority than other IRRS routes or non-IRRS routes.

SR 46 is a Subsystem of Highway for the movement of Extra Legal Loads (SHELL) route from the North 101/46 junction to the Kern County line. SHELL routes are a network of State Highways designated where overweight and/or extra-large vehicles may be permitted to travel under certain limited conditions. SR 46 is used for the transport of extra legal permitted loads. SR 46 is also a Terminal Access Route to the National Truck Network. SR 46 East is also part of the Freeway and Expressway System.

The first few miles of SR 46, from SR 1 to PM 5.20, lies within the California Coastal Zone. Development here is subject to compliance with Local Coastal Program certified under the California Coastal Act, which provides long-term environmental protection for California's 1,100-mile coastline for the benefit of current and future generations.

Environmental Setting

Scenic and Aesthetic Resources

Most of SR 46 in District 5 (from SR 1 to the Wye intersection with SR 41 at PM 55.1) is eligible for designation as a California Scenic Highway. Segment 1 of SR 46 extends from SR 1 to US 101, with the area from SR 1 to the crest of the first mountains (at approximately PM 5.0), lying in the California Coastal Zone. This part of the highway affords a spectacular scenic panorama extending beyond Morro Bay and Montana de Oro in the south to San Simeon and beyond on the north coast. As the highway crosses the Santa Lucia mountain range it provides views of oak-studded open space, productive vineyards, and scattered homesteads and wineries. Segment 2 passes urban and semi-rural development in Paso Robles, the only urban area along SR 46 in District 5. Segment 3 offers views of rolling hills, mountains, and ranch land. After periods of rain the hills are covered in lush green grasses. Colorful wildflowers are abundant in the late winter/early spring months.

Cultural Resources

The Migueleno people, a subset of the Salinan cultural group and the Chumash were native residents within the corridor. The Salinan people are believed to have occupied the region for at least several thousand years. The extent of their range is uncertain, but in general it consisted of a long, narrow strip along the rugged central California coast that extended inland through the Coast Ranges to the edge of the San Joaquin Valley. Along the southern boundary, Salinan territory appears to have melded into lands occupied by the Northern Chumash, with whom they shared many cultural and linguistic traits. Areas of cultural sensitivity have been identified at numerous locations along the SR 46 corridor in San Luis Obispo County. Potential project-related impacts to archaeological, cultural, and historical resources must be evaluated in compliance with the California Environmental Quality Act (CEQA). Environmental compliance could require further investigation of cultural sites and lead to future facility redesign and/or mitigation.

Biological Resources

Potential project related impacts to biological resources must be evaluated in accordance with CEQA, as well. Potential biological resource impacts on SR 46 include the following: impacts to oak woodlands, wetlands, steelhead and critical habitat, rare plants, San Joaquin kit fox and habitat, and California red-legged frog and critical habitat, and displacement and disruption to movement and dispersal patterns of animals such as pronghorn antelope and kit fox. Segment 1 lies entirely within watersheds that support California red-legged frogs and steelhead. Widening segments 2 and 3 could present additional barriers to animal movements by further dividing large, contiguous wildlife habitat areas.

Air Quality

The County of San Luis Obispo air quality exceeds the state standard for both ozone and air-borne particulate matter. San Luis Obispo County has prepared an air quality attainment plan as required under the California Clean Air Act (CAA). Transportation plans, programs and projects must conform to the attainment plan. The county meets Federal conformity standards for air quality. North County air quality is consistently worse than South County San Luis Obispo. Monitoring stations in Paso Robles and Atascadero regularly record the most excessive ozone levels.

Goods Movement

As the Central Coast continues to evolve and add population, it will be faced with the challenge of providing mobility for people and goods within and visiting the region. This growth in population will bring with it increased freight transportation demand that will create issues that need to be addressed in the transportation and land use planning process. The east to west connections, such as SR 46 serves as our primary farm-to-market connectors. These facilities carry California produce to domestic and international markets. Highways like SR 46 are being asked to serve a wider range of purposes today and will be in the future. In order to accommodate the projected growth in population and goods movement, additional investment in these facilities will be required.

Addressing goods movement issues requires a comprehensive understanding of goods movement in the Central Coast. This understanding can be best achieved by examining all the components of the goods movement system including the facilities – streets/highways, rail, ports; as well as the underlying commodity flows and freight generators. The Association of Monterey Bay Area Governments (AMBAG), in partnership with Caltrans and the regional transportation agencies of Santa Barbara County, San Luis Obispo County, San Benito County and Santa Cruz County, have embarked on a commodity flow study to analyze goods movement within the Central Coast. The AMBAG study is scheduled for completion by 2010.

While goods movement brings economic benefits to the region, it also has an adverse impact on air quality, noise, congestion, and public health. Goods movement is responsible for higher percentages of nitrogen oxide (NOx) emissions and particulate matter 2.5 (PM2.5) emissions then passenger vehicles. With legislation such as Assembly Bill (AB) 32 and State Bill (SB) 375, transportation and land use planning will need to examine the impacts that goods movement

has on air quality. Several initiatives are underway that will likely have a major influence on the options for reducing truck emissions over the next decade. The California Air Resources Board (CARB) is in the process of adopting in-use truck rules that would apply to existing vehicles already on the road. As currently envisioned, the rules would be phased in to require that all truck engines meet the 2007 U.S. EPA emission standard by 2013, and all truck engines meet the 2010 U.S. EPA emission standards by 2021. It is essential that transportation planning along our highway corridors take into consideration strategies that are consistent with the intent of AB 32 and SB 375.

Caltrans District 5 lies within the Central Coast region of California's four Goods Movement Regions. SR 46 is one of two primary east-west corridors that link the Central Coast, via US 101 and SR 1, to the Central Valley and the Interstate Highway System. This connection is made in the City of Paso Robles. Agricultural commodities, raw materials, and manufactured goods are transported to, from and through the Central Coast predominately on heavy trucks. Union Pacific Rail Road's (UPRR) California Coastal freight line parallels US 101 but does not conduct significant loading and unloading operations within the region, therefore regional freight imports and exports travel by truck to their destination or to an intermodal facility elsewhere in California. Truck traffic accounts for nearly 20 percent of total vehicle traffic (Caltrans, 2005) on SR 46. SR 46 intersects SR 1, US 101, and SR 46 and the local and regional economies depend on these highway linkages for the shipment of goods. It should also be noted that SR 46 serves as an alternative route for traffic in the event of an incident, such as a collision or due to weather conditions, which result in a closure on Interstate 5 or State Route 99. Depending on the location, a closure on Interstate 5 could redirect north/south travel to US 101 and potentially across SR 46 to connect back to Interstate 5.

2.2 Setting & Context

Demographics

The communities that are adjacent to the SR 46 corridor are comprised of the Northern portion of San Luis Obispo County and are separated into two regions, each relating to distinct physical and community areas:

North County - The area north of Cuesta Grade generally centered on the Salinas River, containing the communities of Santa Margarita, Atascadero, Templeton, Paso Robles, Whitley Gardens, Shandon and San Miguel. This area is considered in the Land Use Element as the Salinas River planning area.

North Coast - The coastal terrace and adjacent upland areas south of the Monterey County line, including the communities of San Simeon, Cambria, Cayucos, Morro Bay and Baywood-Los Osos (the North Coast and Estero Planning Areas).

The only incorporated community in the corridor is the City of Paso Robles, comprising almost 20 square miles. The City is the fastest growing city in San Luis Obispo County. According to the Paso Robles 2004 General Plan Housing Element Revision, Paso Robles population in 2000 was 24,300 and projected to increase to 30,700 by year 2010; the 2010 projection is based on the assumption that growth will increase at a steady rate of 640 persons per year (Table 2.2)

Table 2.2 2000 & 2010 Growth Projection Comparison

2000 & 2010 Growth Projection Comparison				
Year	2000	2010	2020	% Change
Paso Robles	24,300	30,700	35,880	16.8%
San Luis Obispo County	248,332	269,734		8.6%
California	34,105,437	39,135,676		14.7%

2000 U.S. Census data also displays that young adults (ages 25-44) compose 27.7% of the 24,300 populations in Paso Robles. This is the largest demographic age group followed closely by school age (ages 5-19) individuals that compose 27.0% of the population. College age (ages 20-24) make up the smallest percentage of the population at 6.1%.

Data from the 2000 U.S. Census shows Paso Robles, San Luis Obispo County and California share the "Non-Hispanic or Latino-White Alone" group as the majority of the overall population, with "Hispanic or Latino" placing second. These two groups compose approximately 92% of the total population in both Paso Robles and San Luis Obispo County, where in California together they only total 79% of the population. However, the proportionality of race/cultural groups in Paso Robles is more similar to San Luis Obispo County than California.

2000 U.S. Census data also indicates that Paso Robles, San Luis Obispo County, and California identically rank in categories of occupation, but show more proportional variations. They rank from highest to lowest as follows:

- Management, Professional, and related Occupations
- Service Occupations; Sales and Office Occupations
- Farming, Fishing and Forestry
- Construction, Extraction, and Maintenance
- Production, Transportation, and Material Moving

For California, San Luis Obispo County, and Paso Robles, the occupation categories "Management, Professional, and related Occupations" and "Service Occupations, and Sales and Office Occupations" weigh highest. These two groups comprise 68% - 78% of the occupational total for each group, with Paso Robles having 68%. Paso Robles also maintains a higher percentage of the population in "Production, Transportation and Material Moving" and a lower portion in "Management, Professional and related Occupation" compared to San Luis Obispo County and California.

The 1999 median income according to the 2000 U.S. Census in Paso Robles was $39,217. This is 92% of the median income of San Luis Obispo County and 83% of California's median income.

2.3 Parallel Routes and Local Connections

As a primary component of the State Highway System, SR 46 serves a critical role in providing regional and interregional mobility, and accommodates many aspects of travel including: commuters, tourists, shoppers, public transit patrons, trucks, and emergency services. However, travel capture along the SR 46 Corridor varies east and west of US 101. SR 46 East primarily serves interregional and goods movement, driven by the large agricultural industry in the Central and Salinas Valleys. SR46 West predominately accommodates tourist and recreational transportation, serving as a gateway to wine country and popular travel destinations such as Hearst Castle, San Simeon and the Big Sur Coast.

Within the region, there are few comparable parallel east-west routes that can serve as an alternative to help alleviate traffic congestion along the corridor, or in case of a natural disaster or national security emergency. The most significant parallel route to SR 46 in San Luis Obispo County is SR 41, which also begins at SR 1 along the coast, is contiguous with SR 41 east of Shandon, and terminates at the Kern County Line. Additional parallel routes in San Luis Obispo County include SR 58 and SR 166, which are both south of SR 46 and connect the Central Valley to communities along or near the Central Coast (*Figure 2.3*).

Utilizing local road connections that intersect the SR 46 corridor can also serve as a method for reducing traffic demand on the highway. Such primary local roads intersecting SR 46 are indicated in *Figure 2.3*. Enhancements to these local facilities may result in improved circulation and alleviate congestion along the entire SR 46 corridor, as supported in the SR 46E CCS. The CCS identified new local road connections as a priority in the City of Paso Robles. The following desired local road connections are located completely within the City of Paso Robles jurisdictional limits:

- Golden Hill Road extension to Dry Creek Road, via a Huerhuero Creek Bridge
- Wisteria Lane extension to Airport Road
- Union Road to Airport Road, via a Huerhuero Creek bridge

The City of Paso Robles' General Plan Traffic Circulation Element is expected to also reflect the above road connections as outlined in the City's Parallel Route Study.

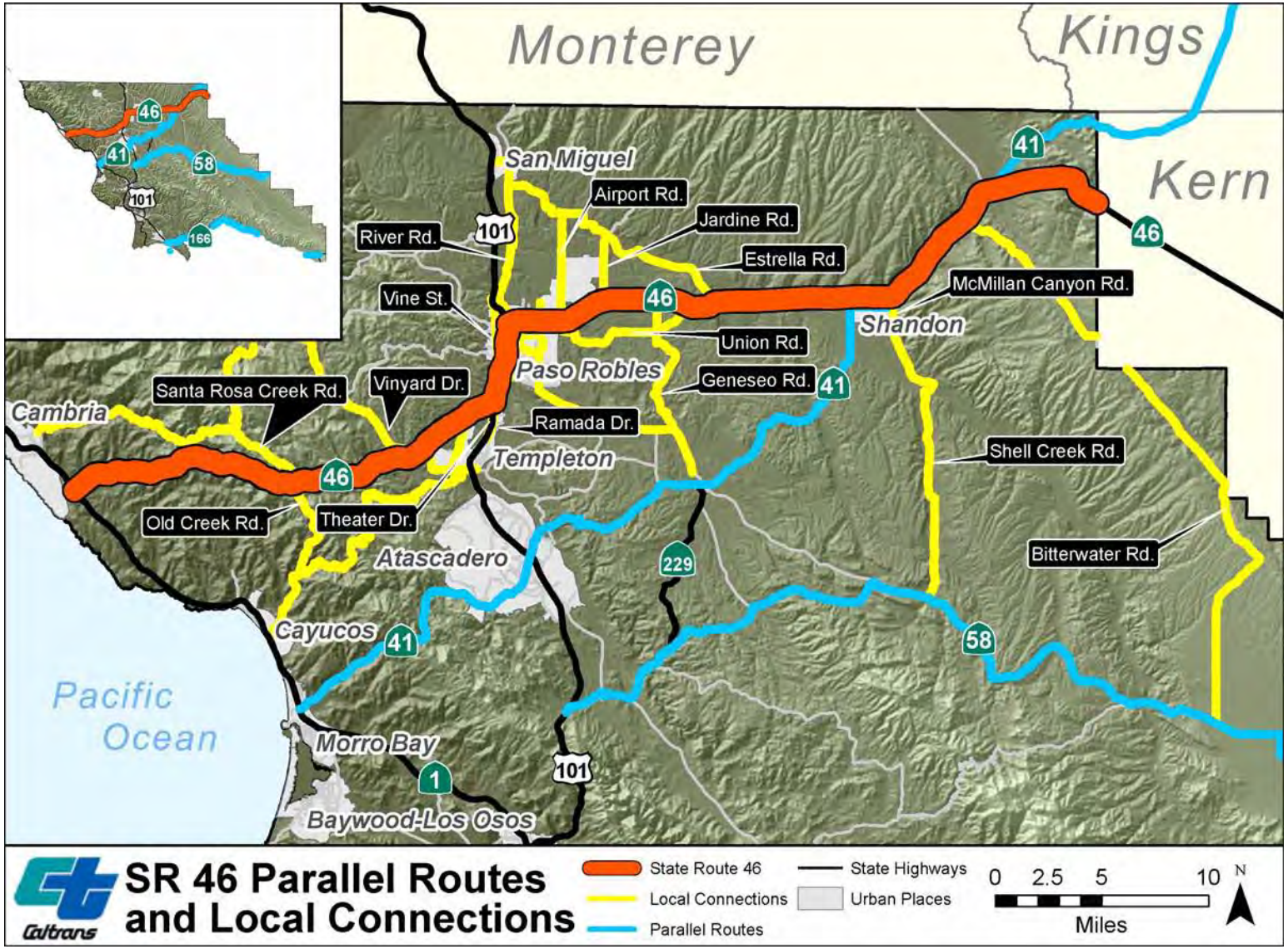

Figure 2.3 SR 46 Parallel Route and Local Connections

2.4 Bicycle Access

Cycling is allowed on all public roads except where specifically prohibited such as on freeways. Consistently wide 8 foot shoulders are sufficient for accommodating bicycle use on Segment 1 of SR 46. The segment of US 101 between SR 46W and SR 46E is not open to bicycle travel. Segments 2 and 3 see less bicycle travel than Segment 1, however bicycle access exists.

Currently the *2005 San Luis Obispo County Bikeways Plan* identifies connections to SR 46 West that would provide connections for the communities of Templeton & the City of Paso Robles:

- An existing Class II facility exists on Vineyard Drive between the Bethel Road and Elementary School. The plan would extend this facility from the Elementary School to SR 46 West.
- Provide a Class II facility on Ramada Drive between Main Street in Templeton north to SR 46 West.
- Provide a Class II facility on Theatre Drive between Main Street in Templeton north to the Paso Robles City Limit line.
- Maintain the existing Class III facility on McMillian Canyon Road between SR 41 and SR 46

The County Bikeways Plan is currently being updated and is expected to be completed by the end of 2010. Caltrans will continue to partner with the County as long-range planning efforts are made to the Bikeways Plan. Additionally the City of Paso Robles is in the process of updating their *2002 Bicycle Master Plan* the updated plan is expected in the fall of 2010. Currently the existing plan does not identify connections to SR 46 East, however current improvements under construction on South Vine from Spring Street to SR 46 West, includes a Class II facility.

2.5 Transit

While rail and public transit is concentrated around the US 101Corridor in San Luis Obispo County, public transportation services are available along the SR 46 Corridor (See *Figure 2.4*). Bus and shuttle services are the primary modes of public transportation along the SR 46 corridor, provided by Amtrak, City of Paso Robles, Greyhound, and other private companies.

Amtrak offers bus service on SR 46E from the Pine & 8th Street Rail Station in Paso Robles to Hanford in the Central Valley. This additionally provides access to and from the San Joaquin Valley Rail Station in the Central Valley, further accommodating travel demands as no west-east parallel passenger rail line exists along the SR 46 corridor.

Paso Robles Community Area Transit Service (PR CATS) offers service throughout the City of Paso Robles. Their North County Shuttle is a on a fixed route which extends service along SR 46E from the US 101/SR 46 junction to the Cuesta College Campus, and Dial-A-Ride provides curb to curb service anywhere in the City. PR CATS is another available service which connects with RTA, the regional transit system in downtown Paso Robles, thereby extending transit mobility for both Paso Robles residents and residents of the unincorporated area. Greyhound and private chartered buses also provide service to the Valley via SR 46, with privately sponsored bus tours to area wineries remaining a popular way to travel along SR 46. SLOCOG has initiated a short-range transit plan that will focus on transit improvements in the northeast quadrant of the City of Paso Robles (east of US 101 and North of SR 46). The plan is scheduled for the 2009/2010 fiscal year.

Lastly, it is important to note the Paso Robles Municipal Airport is one of three municipal airports in San Luis Obispo County as shown in *Figure 2.4* and located north of SR 46E on Airport Rd. The airport primarily serves private pilots and is a home base to almost 200 aircrafts. Currently, no major airlines provide mass air transportation services through the Paso Robles Municipal Airport, and considering projected population growth, demand, its proximity to the San Luis Obispo Regional Airport, and the economic state of the airline industry, it is unlikely that the airport will become a hub for major airlines within the 20 year planning horizon of this Study.

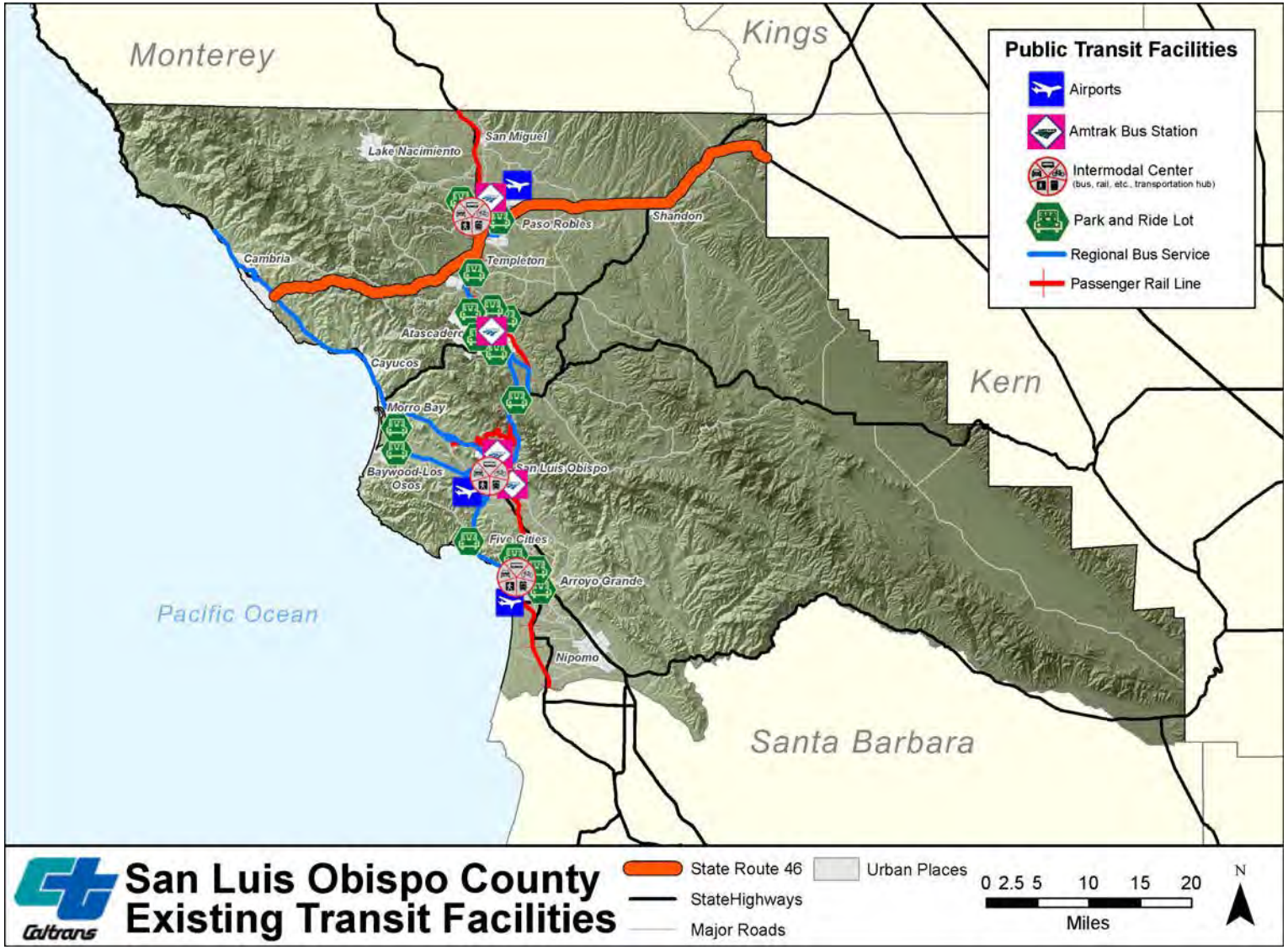

Figure 2.4 San Luis Obispo County Existing Transit Facilities

2.6 Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies and policies to reduce automobile travel demand and facilitate alternative mobility options. It will be necessary to both propose new TDM programs and enhance existing programs, such as transit facilities, ridesharing programs, and park and ride lots, to reduce demand on SR 46E. New TDM elements such as bike/pedestrian facilities and employer-based programs would need to be developed concurrently with identified funding sources.

Commuter Programs

Currently, there is the TDM Program in San Luis Obispo County that integrates all commute modes. The Transportation Choices Program is managed by the San Luis Obispo Regional Rideshare (SLO Rideshare) and is directed by a Steering Committee that includes the Air Pollution Control District, Regional Transit Authority, Ride-On Transportation and the SLO Bike Coalition. The following services are currently part of the TDM program managed by SLO Rideshare:

- Trip Reduction Plan and Employee Commuter Survey**:** As a part of Transportation Choices Program, Rideshare works with the employer to administer a company wide survey of employee commute behaviors and interests. Based upon this survey, Rideshare and the employer develop a Trip Reduction Plan. This plan identifies how the employer can reduce employee related commute trips and make measurable recommendations.

- Carpool: Carpool is an effective and inexpensive way to reduce vehicle trips. The SLO Rideshare has a free online carpool matching system that allows commuters traveling on the same corridor at the same time to share the ride. As of February 2009, the system has 2800 users.

- Vanpool: Currently there are three active vanpool operators in the County (VPSI, Enterprise Vanpool and Ride-On Transportation). The three operators are also partners of Rideshare's Transportation Choices Program. Rideshare and the vanpool operators assist employers and commuters with interoffice and countywide vanpool matching.

- Guaranteed Ride Home (GRH): This program allows users of Rideshare's TripLink system to receive four free rides per year during emergencies.

- Mid-day Shuttles: Currently the Lunchtime Express Shuttle operates in the City of San Luis Obispo, allowing two or more individuals to receive free rides to sponsoring restaurants. This program is managed by Ride-On Transportation and is funded by the participating restaurants.

- Incentive Program and Employer Trip Reduction Tracking: Lucky Bucks, Rideshare's online incentive program, is used to reward participants for not driving alone to work. The program is administered by Rideshare and funded by participating employers. Once users sign up for TripLink online, they can record the days they ride the bus, vanpool, carpool, ride a bike, or walk to work in a personal online commute calendar. Each day they do not drive alone earns them "Lucky Bucks" that can be redeemed for movie tickets, gift certificates to local businesses and donations to local charities. The employer to determine the organizations monthly reduction in trips, vehicle miles, and emissions can then use the data from the commute calendars.

Park and Ride Lots

In addition to the Traffic Demand Management strategies identified above, park and ride lots can be used to encourage commuters to participate in vanpools/carpools. As shown in *Figure 2.4*, currently there are fifteen formal park and ride lots in San Luis Obispo County with three located along the SR 46 Corridor: Paso Robles Multi-modal Station (40 car spaces), Wal-Mart (28 car spaces), and Las Tablas in Templeton (42 car spaces). The San Luis Obispo Council of Governments (SLOCOG) August 6, 2008 staff report, *2008 Park-and-ride Lot Maintenance and Improvements Needs Report,* indicated improvement needs for all fifteen existing Park and Ride Lot facilities in San Luis Obispo County. These locations are identified in Table 2.3.

Table 2.3 Existing Park and Ride Lots in San Luis Obispo County

Existing Park and Ride Lots in San Luis Obispo County	
Park and Ride Lot	**Needs Identified for Expansion and Multi-modal**
Multi Modal Station, Paso Robles	X
Walmart, Paso Robles	X
Las Tablas, Templeton	X
St. Williams Church, Atascadero	X
Highway 41, Atascadero	X
Curbaril Ave., Atascadero	X
Santa Rosa Rd., Atascadero	X
Santa Barbara Rd., Atascadero	X
Highway 58, Santa Margarita	
Church of Nazarene, Los Osos	X
Von's Market, Los Osos	X
Bob Jones Trail, Avila Beach	X
Prime Outlets, Pismo Beach	X
Wal-Mart, Arroyo Grande	
Halcyon Road, Arroyo Grande	X

Additionally, the staff report indicated 44 potential new locations for future development of Park and Ride Lot facilities in San Luis Obispo County. Seven of which are proposed on or along the SR 46 Corridor in the communities of Cambria, Templeton and Paso Robles (Table 2.4).

Table 2.4 Proposed Park and Ride Lots Along the SR 46 Corridor

Proposed Park and Ride Lots Along the SR 46 Corridor		
City	**Lot Name**	**Address**
Cambria	Cambria Drive	Cambria Drive/Highway 1
Cambria	Santa Rosa Catholic Church	1174 Main Street
Cambria	First Baptist Church	2120 Green Street
Cambria	South Main Street	South Main Street, ¼ mi. N of HWY 1
Paso Robles	Target	2305 Theatre Drive
Paso Robles	Mid-State Fair Parking Lot	Riverside and 24th Street
Templeton	Trader Joe's Employee Parking	Rossi Road & Vineyard Drive

Other possible locations for new park and ride facilities include:

- Cuesta College – North County Campus
- Airport Road Business Park
- Chandler Ranch Area Specific Plan
- Jardine Road
- Shandon

Increasing the number of Park and Ride Lots County wide would contribute to reduced demand on the single-occupant-vehicle within the County and subsequently along the SR 46 corridor. It may also be determined that park and ride locations outside the corridor would serve commuters who work in the corridor, in addition to residents who commute to work through and outside the corridor.

2.7 Intelligent Transportation System (ITS) Strategies

Intelligent Transportation Systems (ITS) are a broad range of diverse technologies which, when applied to our current transportation system, can help improve safety, reduce congestion, enhance mobility, minimize environmental impacts, save energy, and promote economic productivity. ITS technologies are varied and include information processing, communications, control, and electronics. Examples of ITS technologies include Changeable Message Signs and Close-circuit Television.

Traffic Management Center

The cornerstone of the Central Coast ITS Implementation Plan is the Traffic Management Center (TMC) operated since October 2001 from District 5 offices in San Luis Obispo. The TMC operates Monday through Friday, 6:00 AM to 6:00 PM.
Caltrans and CHP personnel staff monitor real time traffic conditions, provide pre-trip and en route information to travelers, coordinate emergency response efforts, and manage traffic flow.

The TMC coordinates the following district-wide ITS components:

1. **Closed Circuit Television (CCTV)**: CCTV is used to continuously monitor road conditions visually, verify changeable message sign function, and detect/verify incidents for more effective response. CCTV will improve online communications with motorists as to freeway conditions to allow them to make routing choices before they enter the congested zone.

2. **Incident Management System:** This function directly links regional TMCs with emergency service agencies and resources. The incident management system employs a computer-aided dispatch (CAD) system to alert local resources to incidents. The TMC dispatches an appropriate response in coordination with emergency management and other incident response personnel to confirmed incidents.

3. **Synchronized signals**: Operate in a similar way as a ramp meter, however the focus is on local road intersections adjacent to a highway.

4. **Changeable message signs (CMS)**: Convey important information pertaining to road conditions, weather, traffic incidents, etc., to motorists in a timely manner. They are controlled from the TMC or remote locations.

Existing ITS Elements

Changeable Message Signs (CMS) *(Figure 2.5)*

- US 101 and Paso Robles Street (SB on US 101 just north of Paso Robles)
- US 101 and SR 46 West (WB on SR 46 just west of US 101)
- SR 1 and SR 46 (NB on SR 1 just south of SR 46)
- SR 46E and SR 41 (the Wye area)
- Mobile Changeable Message Signs are also used along the 46 corridor.

Closed Circuit Television (CCTV) *(Figure 2.5)*

- US 101 and SR 46 East

Incident Management System

This function directly links regional TMC with emergency service agencies and resources. The incident management system employs a computer-aided dispatch (CAD) system to alert local resources to incidents. The TMC dispatches an appropriate response in coordination with emergency management and other incident response personnel to confirmed incidents.

Planned ITS Features

Ramp meters *(Figure 2.5)*

Ramp meters regulate the flow of traffic entering the highway, which allows a maximization of the existing capacity. A ramp meter is proposed in Paso Robles at Spring Street as part of the 2011 46E/101 Interchange Project.

Interactive Traveler Information, 511 telephones, web-based traveler information service

Interactive Traveler Information, 511 telephones, and web-based traveler information service allows travelers to obtain more targeted information that will assist them in travel decisions. Applications include interactive kiosks at selected sites and ultimately the Internet. Travelers will have direct access to route information and real time information on traffic and transit conditions, enabling better decisions.

Road Weather Information System (RWIS)

An environmental detection system would utilize planned "smart" call boxes in conjunction with a roadway weather information system to remotely sense environmental conditions, weather hazards, or low visibility conditions (e.g., high winds, fog, blowing dust, wet pavement, etc.).

Smart call box sites can host different types of RWIS sensors for these environmental conditions and send alerts to the CHP's computer aid dispatch (CAD) system and transmitted remotely via CMS. An environmental detection system can provide high wind and fog detection, as well as monitor air quality along streets and highways where visibility and high levels of pollutant emissions are known to occur. RWIS can improve safety by providing traveler information in a timely manner.

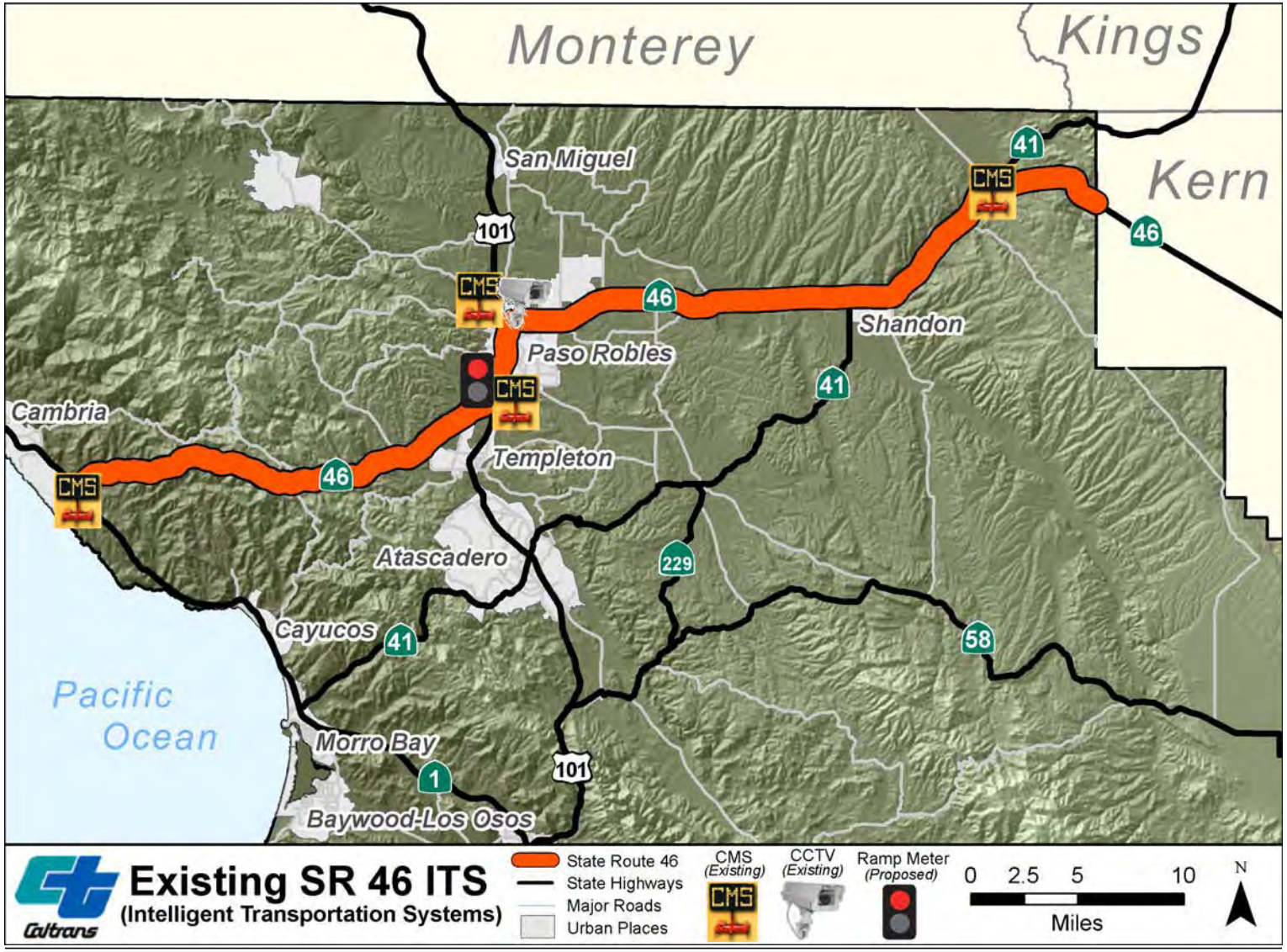

Figure 2.5 Existing SR 46 ITS (Intelligent Transportation Systems)

CHAPTER 3 COMPREHENSIVE CORRIDOR PERFORMANCE ASSESSMENT

The comprehensive corridor performance assessment is an analysis of the existing conditions, future conditions, and deficiencies associated with the corridor based on performance measures. Performance measures are basic to corridor management and investment decision making. Using performance measures can help identify the most efficient and effective system operational strategies and capital improvements. Performance measures provide the important dynamic daily information needed to rapidly address operational problems caused by traffic congestion and are also used to verify if improvements to the transportation system generate the desired results. To adequately identify the current and projected deficiencies within the corridor, prioritize locations for investment, and develop a range of solutions, Caltrans and the partners identified a set of performance measures: ***collision rates/concentrations, delay,*** and ***life cycle cost***. These measures and the deficiencies associated with the data are described in the following sections.

3.1 Safety

One of the performance measures to appraise that the SR 46 corridor is operating now, and in the future, is ***collision rates/concentrations***. Areas of higher than average collision rates/concentrations indicated focus locations to improve safety. Through analysis of the collision history improvements can be identified and installed to improve the safety of this facility.

The collision history for the corridor was derived from the most recent three years - August 1, 2005 to July 31, 2008. The "actual rates" are those rates that recorded based on collision data for a specific route and then compared to the expected "statewide rates." Table 3.1 and *Figure 3.1* summarizes the rates for the segments of SR 46.

Table 3.1 Collision Data for SR 46 Corridor in San Luis Obispo County

Collision Data for SR 46 in San Luis Obispo County		
Segment	**Actual Collision Rate***	**Statewide Average Collision Rate**
1	**1.02**	1.02
2A	**0.80**	0.75
2B	**1.84**	1.04
2C	0.38	0.60
3A	0.39	0.60
3B	0.35	0.67
3C	0.50	0.60

** Rates are incidents per million vehicle miles for 3-year period from:8/01/2005 to 7/31/2008*

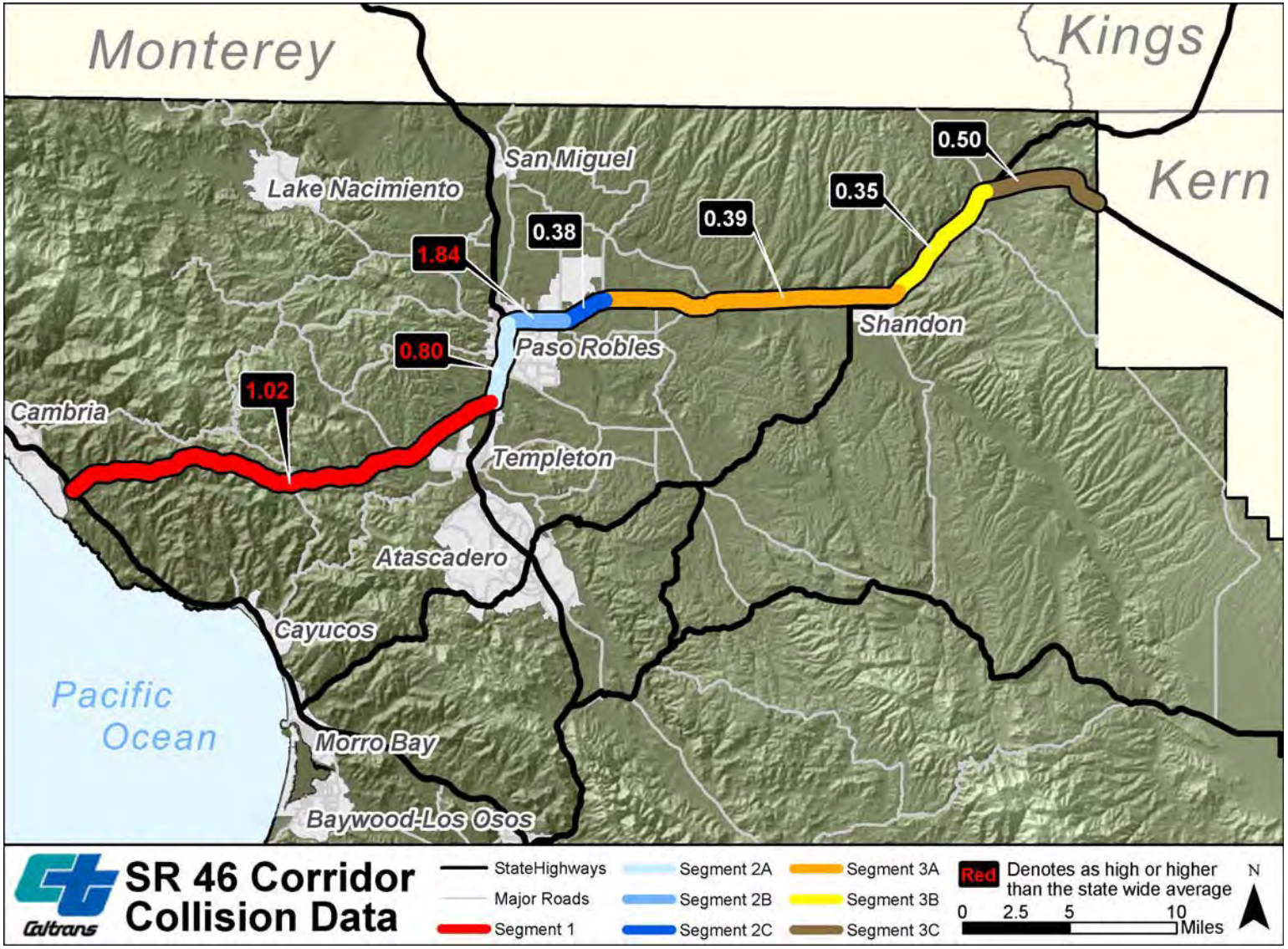

Figure 3.1 State Route 46 Corridor Collision Data

Most of the "actual" rates for the six segments are less than the "statewide average" rates, however the following exception currently are at or exceeds the "statewide average":

- Segment 1, from the junction of SR46/SR1 to the junction of SR 46W/US 101.
- Segment 2B, the urbanized section of SR 46 from the Interchange of US 101/SR 46E to Airport Road
- Segment 2A, from US 101/SR 46W Interchange to US 101/ SR 46E Interchange

The following table (Table 3.2) identifies the locations were intersection collision data exceeds the statewide average along the Segment 1.

Table 3.2 Intersection Collision Data for Segment 1

Intersection Collision Data for Segment 1		
Intersection	**Actual Collision Rate***	**Statewide Average Collision Rate**
Junction at SR46 and SR 1	0.29	0.70
Green Valley Road	***0.23***	0.20
Private Drive (PM 9.8)	0.00	0.15
Cypress Mountain Drive	***0.70***	0.30
Dover Canyon Road	0.00	0.20
York Mountain Road (PM 13.2)	0.00	0.20
York Mountain Road (PM 14.8)	***0.49***	0.20
Jack Creek Road	***0.73***	0.20
Vineyard Drive	***1.11***	0.30
Las Tablas Drive	0.00	0.20
Oakdale Road	0.13	0.20
Anderson Road	0.00	0.20
Bethel Road	***0.67***	0.20
Arbor Road	***0.25***	0.20
Theater Drive	***1.63***	0.45
US 101 SB Ramps	0.80	0.45

The following table (Table 3.3) identifies the locations were intersection collision data exceeds the statewide average along the Segment 2A.

Table 3.3 Intersection Collision Data for Segment 2A

Intersection Collision Data for Segment 2A		
Intersection	**Actual Collision Rate***	**Statewide Average Collision Rate**
South Bound on-ramp @ US 101/ 46 W Interchange	***0.81***	0.19
North Bound off-ramp @ US 101/46 W Interchange	***1.52***	0.42
South Bound off-ramp @ US 101/46 W Interchange	0.28	0.31
North Bound on-ramp @ US 101/46 W Interchange	0.28	0.26
South Bound on-ramp @ US 101/46 E Interchange	0.16	0.26
North Bound off-ramp @ US 101/46 E Interchange	0.39	0.42
North Bound on-ramp @ US 101/46 E Interchange	0.45	0.20
South Bound off-ramp @ US 101/46 E Interchange	***1.51***	0.42

To further understand the collision concentrations in segment 2B, the following data has been broken down into mainline collisions and intersection collision data (Table 3.4 and 3.5). Most of these accidents are due to traffic congestion, speeding and improper lane changes or turning movements. The collision concentrations identified below currently exceed the state wide average for similar facilities.

Table 3.4 Segment 2B Mainline Collision Data

Mainline Collisions from April 2003 - March 2006								
Segment		**Number of Collisions**	**Actual Collision Rate**			**Statewide Average**		
From	**To**		**Fatalities**	**Fatalities + Injuries**	**Total**	**Fatalities**	**Fatalities + Injuries**	**Total**
US Route 101 PM 29.76	Buena Vista PM 30.51	60	.047	0.94	***2.81***	0.018	0.62	1.35
Buena Vista PM 30.51	Golden Hill PM 31.31	34	0.00	0.27	***1.55***	0.018	0.62	1.35
Golden Hill PM 31.31	Union PM 31.80	20	0.00	0.38	***1.51***	0.018	0.62	1.35
Union PM 31.80	Airport PM 32.15	6	0.00	0.33	0.65	0.017	0.59	1.29

Table 3.5 Segment 2B Intersection Collision Data

Intersection Collision Data from August 2005 - July 2008							
Ramps and Intersection	Number of Collisions	Actual Collision Rate			Statewide Average		
		Fatalities	Fatalities + Injuries	Total	Fatalities	Fatalities + Injuries	Total
Intersection Route 46/Rte 101 NB Ramps	27	0.00	0.19	***0.84***	0.002	0.14	0.35
Buena Vista PM 30.51	14	0.00	0.06	***0.44***	0.001	0.06	0.15
Golden Hill PM 31.31	35	0.00	0.31	***1.21***	0.002	0.14	0.35
Union PM 31.80	12	0.00	0.06	***0.25***	0.001	0.06	0.15
Airport PM 32.15	11	0.00	0.21	***0.38***	0.001	0.06	0.15

Incident Management

Rural highways have different safety and operational challenges from that of urban highways. With the exception of the segment through the City of Paso Robles, rural roadways make up the entirety of the route in San Luis Obispo County. Rural routes often include undivided highways to which head-on collisions are a main concern. Due to the lack of alternative routes, redirecting traffic after a traffic incident can be challenging. Because of these factors it is important for maintenance crews to respond to non-recurring traffic incidents (non-recurring refers to incidents such as a collision that does not "recur" on a daily basis) as efficiently as possible. Maintenance stations are located at the SR1/SR46 junction on the coast and on US 101 in the community of Templeton. Along SR 46, District 5 is responsible for responding for incidents from Route 33 in Kern County to the junction of SR1/SR 46 near the community of Cambria on the coast. In addition to incident management for events that occur on SR 46, there are situations where an incident such as a collision or weather closure, occurring on Interstate 5 or SR 99, would result in SR 46 serving as an alternate route.

The Transportation Management Center is dedicated to improve response time to clear incidents on all state highways within District 5, including SR 46. A recent California Highway Incident Management Summit was held with various agency partners to discuss a goal of clearing highway incidents within 90 minutes. Some top solutions were to implement technical interoperable (systems that operate between more than one agency) communication systems, establish Caltrans/CHP communication centers, train with consistent terminology within the departments, and revise laws to allow quick clearing activities. Integrating a communication strategy that notifies the agencies responding to the incident and providing accurate information to the public is a priority in District 5.

3.2 Operations

Delay is a performance measure that indicates if a transportation facility is operating well to move traffic, either along the mainline or through an intersection. This takes into account the traffic volumes, the queues created due to congestion, and the time and money lost due to delay within the system. Level of Service (LOS) analysis measures the flow of traffic, based on the geometrics (i.e., two lanes) of a road and the capacity. LOS describes operating conditions a typical driver will experience on a typical day. Like a report card, the LOS is defined in categories ranging from A to F, refer to *Figure 3.2*. "A" represents the best traffic flow through "F," which represents the worst congestion. Table 3.7 indentify the LOS data associated with each segment of SR 46. This data is a combination of the existing conditions and a comparison of the projected future conditions. Table 3.6 summarizes the Average Annual Daily Traffic (AADT) per segment.

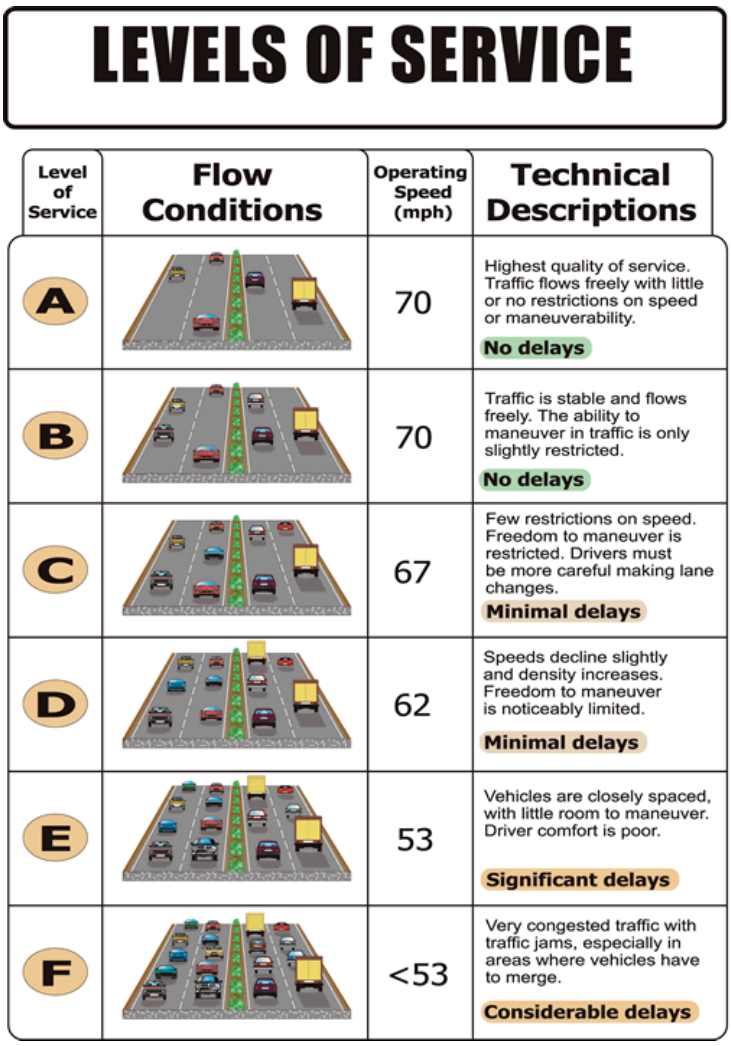

Figure 3.2 Pictorial of the six levels of service (Mainline)

Table 3.6 SR 46 Average Annual Daily Travel (ADDT) Summary

SR 46 Average Annual Daily Travel (AADT) Summary			
Segment	2006 (Existing)	2030 (Future)	% Increase 2006 to 2030
1	7,000	17,000	41%
2A	63,000	81,000	29%
2B	25,000	51,000	49%
2C	21,000	38,000	55%
3A	12,000	21,000	57%
3B	14,000	26,000	54%
3C	8,000	17,000	47%

Table 3.7 SR 46 Level of Service (LOS) Summary

SR 46 Level of Service (LOS) Summary				
Segment	Peak LOS Data			
	Existing		Future	
	2005	2006	2020	2030
1		B - C		C - E
2A		D		F
2B	C - F		F	F
2C		E		A - C
3A		D		D
3B		D		D
3C		D		E

Congestion and travel time studies show that queuing in the westbound direction of SR 46E (Segment 2B) in the PM peak is a regular occurrence. A travel time study was conducted for the PM peak hour for the westbound queue. The study was accomplished using the "Floating Car" method. This type of study requires driving at the prevailing speed of traffic and timing between points along the route. Studies were performed during the afternoon and evening peak hours.

Travel time for this study was measured as the average time it took a vehicle traveling westbound on SR 46 from the junction at SR 46E/SR 41(segments 2A, 2B, 2C and 3) to reach the southbound off-ramp at the interchange at US 101/SR 46W as displayed in Table 3.8 and Table 3.9. These studies were conducted in April 2005, June 2005 and May 2009. Travel time studies were also conducted in April 2008 for segment 1 during the morning and evening peak hours and in both the eastbound and westbound direction.

Table 3.8 SR 46 Travel Time Summary: Segments 1, 2A, 2c & 3

SR 46 Travel Time Summary: Segments 1, 2A, 2c & 3				
Time of Day	Segment	Travel Direction	Average Speed (mph)	Total Delay (seconds)/ Vehicle
PM Peak, Thursday, summertime	1	Eastbound	57	7.3
AM Peak, Thursday	1	Eastbound	59	49
PM Peak, Friday, summertime	1	Westbound	58	18
AM Peak, Friday	1	Westbound	63	8.3
PM Peak, Friday	2A	westbound	62	9.3
For travel time data for segment 2B please refer to Table 3.8				
PM Peak, Friday	2C	westbound	57	1.5
PM Peak, Friday	3	Westbound	62	0

Table 3.9 SR 46 Travel Time Summary: Segment 2B

SR 46 Travel Time Summary: Segment 2B			
Time of Day	Travel Direction	Average Speed (mph)	Total Delay (seconds)/ Vehicle
Airport Road to Union Road	Westbound	60	0
Union Road to Golden Hill Road	Westbound	11	136
Golden Hill Road to Buena Vista Road	Westbound	4	715
Buena Vista Road to 101/46E NB ramps	Westbound	3	880
101/46E NB ramps to 101/46E SB ramps	Westbound	12	18
101/46 SB ramps to 101 SB ramp merge	westbound	56	2

Deficiencies

Deficiencies within the corridor are identified by segment; however there are numerous TDM programs within San Luis Obispo County that apply to all the segments. Programs such as rideshare have been developed over the years with a main focus of getting commuters into the City of San Luis Obispo. Currently, lack of mobility choices exist in this corridor. It will be necessary to both propose new TDM programs and enhance existing programs, such as, transit facilities, ride-sharing program and park and ride lots to reduce the demand on the facility and provide choices for commuters.

Segment 1: Junction with Highway 1 to SR 46 West/US 101 Interchange

Segment 1, which extends from SR 1 to US 101, is a 2-Lane conventional highway that currently operates between LOS B to C. This section is projected to operate at LOS C to E by the year 2030. Currently narrow shoulders and limited opportunities for left-turn channelization at key intersections are resulting in deficiencies within the corridor. Operational improvements such as left-hand turn pockets and passing lanes will help to mitigate the increase in traffic volumes due to increasing development activities related to viticulture and tourism. In areas where wineries are located, or permitted in the future, the use of parallel local roads and driveway consolidation is encouraged. The Highway 46 West Corridor Study completed in April 2000 by the San Luis Obispo County Public Works Department fully addresses these issues.

Segment 2A: North of the US 101/SR 46 West Junction to US 101/SR 46E Interchange

Segment 2A along of US 101 carries heavy commuter traffic as well as interregional and local traffic. During weekday peak periods, the dominant traffic flow is southbound in the morning and northbound in the evening as motorist travel to and from jobs and school (California Polytechnic State University) in the City of San Luis Obispo. This is especially true in the urban area of Paso Robles with directional splits 57 percent (57 percent of the traffic travels in one direction i.e., towards San Luis Obispo).

Since SR 46E connects at the interchange of US 101/SR 46E, this section of US 101 experiences heavy congestion due to local trips, interregional goods movement and recreational traffic. Congestion is particularly heavy during the summer when major events are held at the Paso Robles Event Center and on weekends when traffic between the San Joaquin Valley and coastal communities is heaviest. US 101 serves as the connection for those motorists traveling west along SR 46E and for those making connections north and south on to US 101.

The AADTs in the urban area near the 13th Street Bridge in the City of Paso Robles have averaged 63,000. Truck traffic represented 6 to 11 percent of total traffic in this segment, and except for unusually high heavy truck traffic at the junction of Routes 101 and 46 East, trucks of five or more axles represented 53 to 61 percent of total truck traffic. Table 3.10 and 3.11 summarizes the level of service for this segment of Route 101.

Table 3.10 SR 101 Existing Intersection Peak Hour Levels of Service

SR 101 Existing Intersection Peak Hour Level of Service			
Intersection	Projected Peak LOS Data		
	Summer Friday Peak	Weekday AM Peak	Weekday PM Peak
Route 101/Route 46 E	LOS F	LOS C	LOS C
Route 101 Northbound/Route 46 E	LOS E	LOS C	LOS C
Route 101 Southbound/16th Street	LOS D	LOS B	LOS C
Riverside Avenue/13th Street	LOS C	LOS C	LOS C

Table 3.11 SR 101 Level of Service (LOS): 2010 & 2030 Weekday A.M. Peak

SR 101 Level of Service (LOS): 2010 & 2030 Weekday AM Peak		
Segment	Projected Peak LOS Data	
	2010	2030
Route 46E to 16th – 17th Street	LOS B	LOS B
16th/17th Street to Pine	LOS A	LOS B
Pine Street to Spring Street	LOS B	LOS C
Spring St to Route 46W	LOS C	LOS E

Segment 2B & 2C: US 101/SR 46 East Interchange to Jardine Road

Segments 2B and 2C begin at the US 101/SR 46E Interchange and end at Jardine Road. The demand on these segments will only continue to increase over time, resulting in decreased performance. The recreational opportunities, goods movement needs, local needs and numerous other opportunities in North County will continue to draw travelers to the Central Coast. SR 46E as a main route for travelers from all over California will require that improvement be made to this corridor. Central California is a region rich in agricultural land uses; SR 46E provides a critical path for the nationwide distribution of agricultural goods. The deficiencies are known, and the implementation of corridor preservation would ensure that SR 46E is sustained as a route of significance to this region. The US 101/SR 46E Interchange is the main bottleneck along the SR 46E corridor. Lack of storage capacity for westbound travelers and the local trips contribute to increased congestion at the existing signals. The existing deficiencies are described below in more detail. Located west to east on the SR 46E corridor, existing deficiencies are identified:

US 101/SR46 East Interchange

This interchange displays inadequate storage capacity for SR 46E westbound travelers making a connection to southbound 101. The existing left-turn lane pocket does not accommodate all the vehicles at this signal. Multiple signal cycles are required to move vehicles through the intersection, primarily due to the limited green-time of each signal cycle and the number of vehicles making this movement. This essentially causes a bottleneck at the interchange, resulting in a chain reaction of delay, and a queue that during summertime Friday afternoon peak periods can extend on the westbound lanes through the Buena Vista and Golden Hill Road intersections. This queue ultimately creates deficiency at the Buena Vista and Golden Hill Road intersections.

Buena Vista Drive (Half Signal Intersection)

Inadequate merging and weaving distance between Buena Vista Drive and Golden Hill Road create the existing deficiency at Buena Vista Drive. For travelers making a left-turn movement onto eastbound SR 46, they must first merge into the number one lane (i.e. fast lane) using the existing acceleration lane. For those that wish to make a right-hand turn onto Golden Hill Road, they must quickly switch lanes and enter the number two lane (i.e., slow lane). This deficiency is complicated further during times of heavy congestion and provides less opportunity to switch lanes. In addition, the queue that is created from the SR101/SR 46E Interchange extends through the Buena Vista Drive intersection.

Golden Hill Road (Full Signal Intersection)

The existing signal at Golden Hill Road is causing queues to back up on all four legs of the signal. The existing left-turn lanes on all four legs cannot accommodate the number of vehicles making these movements. Multiple signal cycles are required to clear the intersection; the green time is not adequate. This delay at the intersection has created a queue that extends on the local road system south on Golden Hill Road and through the Union Road/Golden Hill Road intersection. There is also a queue on SR 46E for westbound and eastbound users making left-turns onto Golden Hill Road. According to the Golden Hill Retail Center's traffic analysis, by 2030 the LOS for this intersections during the weekday and Friday PM peak will be F.

Union Road, Airport Road, Mill Road, and Jardine Road (Unsignalized Intersections)

The existing unsignalized intersections have operational and delay issues with gap acceptance. A gap is when a vehicle must find an opening in the traffic to make a traffic movement, such as the vehicle that is entering or exiting SR 46E. A delay is created for vehicles entering or exiting SR 46E, which results in queues developing on the local roads and in the SR 46E left-turn lane. These movements are commonly referred to as "unprotected" movements, which means that the SR 46E through lanes continue through the intersection without stopping. Three movements affected in this instance at each intersection include:

- The traveler wishing to make a left-turn onto the local road, who must wait until there is a gap in the traffic to make the turn
- The traveler in the left-turn lane on the local road who wishes to connect to SR 46E
- The traveler in the right-turn lane on the local road who wishes to connect to SR 46E

Additionally, for the right-turn movement of travelers entering SR 46E, there is less than adequate merging distance for vehicles that need to merge onto SR 46E. Finally, topography and geometrics at these intersections has impacted sight distance, contributing to deficiencies in turning movements at this location.

Segment 3: Jardine Road to San Luis Obispo & Kern County Lines

Segment 3, which extends from Jardine Road to the San Luis Obispo County/Kern County Line, primarily carries interregional traffic east and west between the Central Coast and the San Joaquin Valley. Currently this segment operates at a LOS D. The demand on this segment will continue to increase over time, resulting in decreased performance. The recreational opportunities, goods movement needs, local needs and numerous other opportunities in North County will continue to draw travelers to the Central Coast. The SR 46 East corridor is a designated Safety Corridor.

Additionally, this segment of SR 46E carries a high percentage of truck volume which indicates the importance of this route as a goods movement corridor. However trucks also affect operations and safety on this route. Due to their weight and size, trucks require more space and time than passenger vehicles do to speed up and slow down. In addition, trucks cannot maintain high speed on steeper grades. Delays and frustration by faster motorists coming up behind the trucks result because passing opportunities are few. The large size of trucks can also restrict sight distance for vehicles that are passing, entering or leaving the highway. Finally, the severity of high-speed accidents is usually greater when trucks are involved. Although the overall accident rate for this segment is below the statewide average, the severity (accidents resulting in injury or fatality) are a cause for concern in this segment. In 1996 a grassroots committee comprised of local citizens called Fix 46 was established to facilitate the construction of safety projects, and ultimately, the conversion of this segment from a 2-lane facility to a 4-lane divided expressway. Efforts have included receiving grants for increased law enforcement along the route, increasing fines for motorists caught driving in an unsafe manner, the installation of concrete median barrier, and the designation of the segment as a daytime headlight zone. The implementation of the above mentioned projects and law enforcement programs has resulted in some improvement within this segment. As shown in Table 3.1 the safety rates for this segment of SR 46E are below the statewide average.

3.3 Corridor Maintenance and Preservation

Caltrans is the owner and operator of California's highways. As such, Caltrans is tasked with maintaining and preserving the state highway system. The existing system can be impacted by local community expansion and development. These areas of focused expansion and development are often referred to as corridors. In order to keep the system as highly functional as possible, it is necessary to analyze proposed alternatives within these corridors and to evaluate the short and long term effects on the system. One method used to analyze these impacts is referred to as the Life Cycle Cost Analysis (LCCA). LCCA enables a cost comparison to be made between competing alternatives and equivalent benefits. It accounts for all relevant costs to the sponsoring agency, owner, operator of the facility and the roadway user that would occur throughout the life of an alternative. Relevant costs include initial construction, future maintenance and rehabilitation, and user costs. The analytical process helps to identify the lowest cost option to accomplish the project while taking into account the cost of preserving and maintaining the system over time. The type of traffic using the corridor also plays a significant role in the level of maintenance and rehabilitation to preserve the integrity of the system.

Currently, trucks account for as much as 20 percent of the traffic on SR 46 compared to a state-wide average of about 9 percent. A high level of truck traffic can significantly accelerate the rate of deterioration of the pavement. Pavement distress on SR 46 can be broken down into three categories: no distress, minor distress, and major distress. In 2007, a pavement condition survey was performed along this stretch of highway. The findings indicated that 22 percent of the corridor was experiencing major distress (severe cracking with or without rough ride) and 18 percent was minor distress (moderate cracking with or without rough ride), please refer to Table 3.12. Areas of major distress could be remedied by rehabilitation or reconstruction, while minor distress could be remedied by asphalt concrete overlays and/or rehabilitation. Areas of distress are identified in Figure 3.3. Projects addressing these deficiencies would be programmed under Pavement Preservation Program through the State Highway Operation and Protection Program (SHOPP).

Preventative maintenance strategies are also routinely utilized in order to extend the service life of pavement already in a state of good repair. These strategies typically include the placement of seal coats such as slurry seals, chip seals, and open grade friction courses to name a few. Maintenance State Forces also perform routine maintenance activities such as digouts, grader blankets and crack sealing. In addition to pavement maintenance, other activities that preserve the whole facility would include, although not limited to, bridge work, signal work, striping, drainage, and fence repair. Together these activities make up the coordinated effort implemented by Caltrans to keep the system in a state of good repair. Access to the work sites is an issue of primary concern to the State. As projects are proposed within the corridor proposals would need to include strategies that are easily maintained and would provide access for maintenance staff that promotes worker safety.

Table 3.12 Pavement Conditions on SR 46 in San Luis Obispo County

Pavement Conditions on SR 46 in San Luis Obispo County	
Pavement Distress Type	Percent of total SR 46 lane miles in San Luis Obispo County
Major	22%
Minor	18%

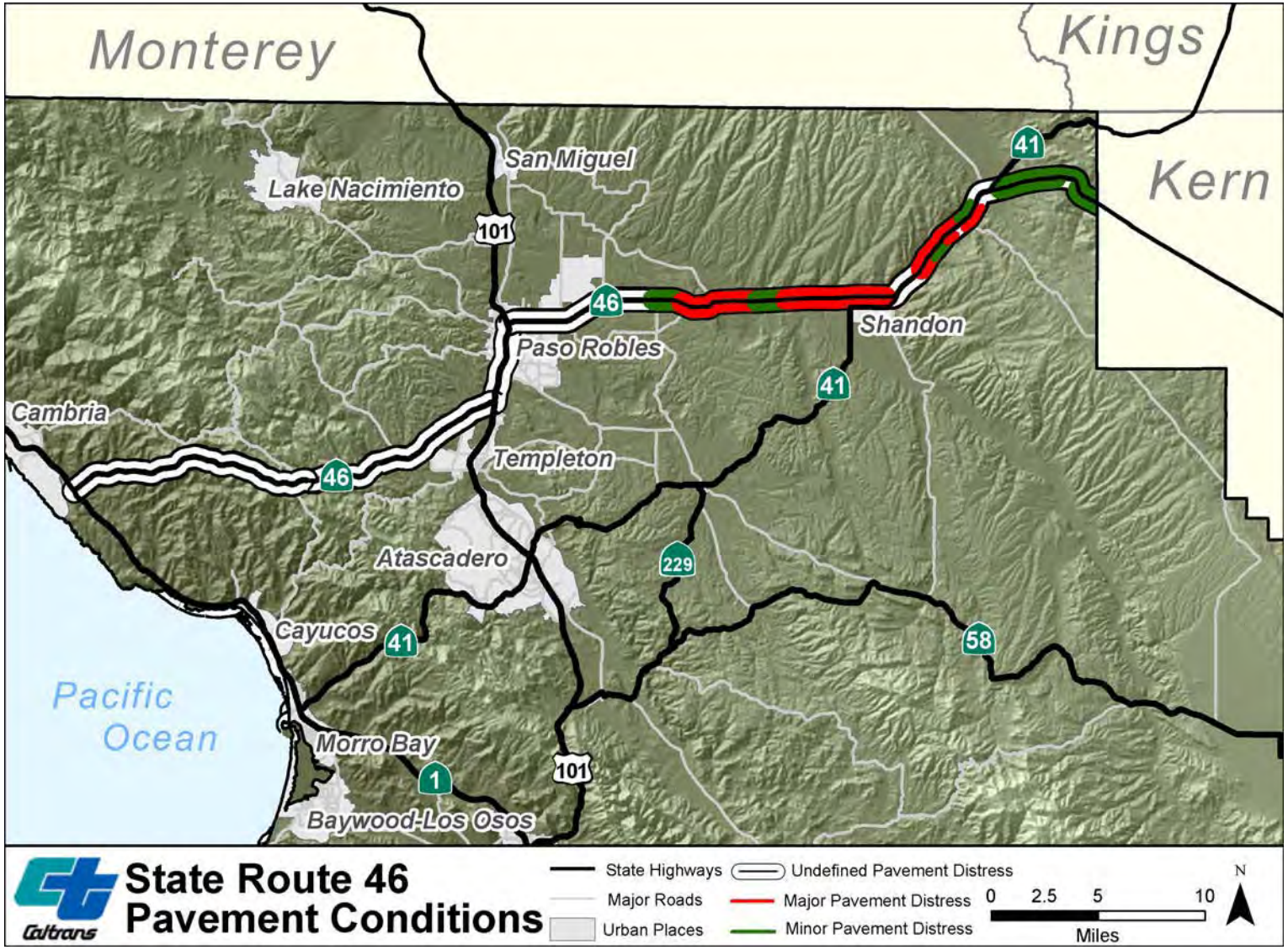

Figure 3.3 Pavement Conditions on SR 46

3.4 Corridor Management Strategies

Existing traffic studies demonstrate that the existing intersections and mainline through-put is failing in the near-term and a need to convert SR 46 East to operate as a freeway concept as a long-term solution. The existing SR 46 corridor includes a variety of facilities, modes and services that must be managed into a single multimodal system. Currently there are numerous projects that are in various stages of development within the corridor that address some of the deficiencies identified within the corridor. Until such time that a freeway is viable, management strategies will be implemented that will focus the effort to prolong the benefits of the projects programmed and the recommended concepts.

Management Strategies

The primary goals of the SR-46 CSMP are to develop strategies to manage the corridor before considering expansion, and sustain existing transportation investments made within the corridor. The SR 46E CCS multi-agency partnership successfully established goals which include: supporting the economy, enhancing public safety and security, reflecting community values and enhancing the environment. The following management strategies will be used to obtain these goals and manage SR 46 over the next 20 years:

Facility Expansion: The focus is to improve mobility and reliability, reduce congestion, improve safety and facilitate goods movement by expanding and managing the existing system. Existing studies have demonstrated that US 101 will need to be widened to six-lanes in the City of Paso Robles. Further studies determined that by 2040 or beyond it will be necessary to increase the number of lanes from four to six and convert the expressway to a freeway in the SR 46 East urbanized segment between the US 101/SR 46 East Interchange and Jardine Road. In order to accommodate projected traffic and increased facility expansion on US 101 and SR 46, it will also be necessary to expand the US 101 /SR46 East Interchange.

Parallel Road Network Development: The focus is to increase the capacity on the parallel road network to reduce local traffic on SR 46.

Intersection Upgrades: Existing traffic studies demonstrate that the existing intersections are failing in the near-term. The focus is to redesign and modernize the intersections to reduce delay, that would maximize mainline throughput. These upgrades could include improving the local road network, adding turn-movement storage, deceleration and/or acceleration lanes to the intersection, and converting at-grade intersections to grade-separated intersections.

Operational Improvements: The focus is to add auxiliary lanes, intersection improvements, better signage and lighting and other system refinements in order to reduce delay, preserve and enhance existing services and improve safety.

Modal Options: The focus is to provide viable transportation options for all users. Greater opportunity to use other transportation modes will reduce demand on SR 46. This includes facilitating and supporting the integration of transit, bicycle, and pedestrian transportation into a coordinated multimodal transportation system.

Intelligent Transportation Systems (ITS)/Traveler Information/Traffic Management/Incident Management: The focus is to upgrade communication and enable deployment of advanced transportation systems, to improve safety, incident response, and traveler information. Real time traveler information allows travelers to make more informed decisions regarding trip planning, route choices and mode selection. Traffic management reduces congestion through the use of technologies such as collision warning systems and advanced traffic management systems. Incidents are the primary cause of unexpected and variable delay. By improving incident management and response time, reductions occur in congestion and travel delay.

Transportation Demand Management: The focus is to reduce congestion by encouraging programs that increase the use of transit, improve bicycle and pedestrian access and encourage programs such as carpools, ridesharing, telecommuting, and park-and-ride facilities to reduce the demand.

Land Use & Transportation Connection: The way communities are planned and designed has an impact on travel behavior. Land use and transportation must be more closely linked. To achieve this strategy, Caltrans will partner with local agencies and assist in the development review process. This process has two main elements: general plans and development projects. An additional opportunity to partner and facilitate a connection between land use and transportation is the Regional Blueprint Program: *Community 2050*. The program was designed to integrate long-range planning for transportation, land use, housing, environmental resources, and infrastructure. The ultimate goal of blueprint planning is to facilitate consensus around a regional vision and preferred land use scenario that will enable the region to accommodate future growth while minimizing adverse impacts. The emphasis of the land use and transportation planning connection is becoming a priority for the State and new legislation such as SB 375 is implemented in the MPO areas.

Maintenance and Preservation: The focus is maintenance and preservation designed to get full return on system investments, reduce traveler costs, and reduced traveler and goods delay. Work in this area would include fully implementing the pavement management system, using innovations that improve the quality and durability of pavement, and incorporating higher-performance, lower maintenance facility features.

System Monitoring and Evaluation: The focus is to install real-time detection and to enhance data analysis and assessment. This allows for better management of existing traffic, as well as development of projects that better alleviate problems.

Programmed Projects & Conceptual Recommendations

In addition to programmed projects, each segment identifies conceptual recommendations that are building on the outcomes of the *State Route 46 East Comprehensive Corridor Study*. The programmed projects and conceptual recommendations are described below by each segment, for a summarized table and mapping refer to Table 3.13 and Figure 3.4.

Segment 1: Junction with Highway 1 to SR 46 West/US 101 Interchange

Programmed Projects

Segment 1 currently has one programmed project proposed; the US 101/SR 46 West Interchange Improvements Project. The US 101/SR 46 West Interchange project is currently in the environmental review and design phase of development, at this time a preferred alternative has not be chosen. The project proposes three alternatives (including the No Build) for environmental review which propose to reconstruct the US 101/SR 46 West Interchange with roundabouts and to realign local parallel routes (such as, Theatre Drive and Vine Street) to SR 46W.

Conceptual Recommendations

Providing additional left-handed turn pockets to improve the operations at select locations is the long-term recommendation for this segment. In areas where wineries are located or permitted in the future, parallel local roads and driveway consolidation would be encouraged.

Segment 2A: US 101 Segment Connecting 46 West and 46 East

Programmed Projects

Currently there are two interim projects that address mainline safety and operational improvements on this segment of US 101:

- US 101 Median Barrier Project – City of Paso Robles
- US 101/SR 46 East Interchange Improvement Project

Near term safety improvements, such as a median barrier, will be implemented by a project that is currently in the preliminary design and environmental review phase of development. The median barrier project is proposed for construction in winter 2011.

Described below in more detail the US 101/SR 46 East Interchange Improvement Project provides improvements at the interchange, and also provides mainline improvements to accommodate the additional traffic flow created by the proposed dual lefts onto US 101. This project also proposes an auxiliary lane that connects the SR 46 East southbound on-ramp and the southbound off-ramp at 17th Street/Riverside Avenue. In order for US 101 to handle the additional flow added by the dual lefts at the interchange, a ramp meter is proposed at the Spring Street southbound on-ramp that will meter the flow onto US 101.

Conceptual Recommendations

In addition to the project discussed above, state and regional planning documents also recommend improvements to US 101. The US Route 101 TCR's recommended actions for this segment include to "ensure any improvements to the facility will accommodate a future 6-lane facility." The SLOCOG 2005 Regional Transportation Plan recommends the following improvements for this segment:

- Operational Improvements such as auxiliary lanes and ramp metering
- Reconstruct interchanges to increase capacity and accommodate future widening of US 101 to six lanes as operations and/or safety warrants
- Improving the regional frontage and parallel road system, with emphasis on intercommunity connections
- Improving the regional park-and-ride lot system and enhance transit express access
- Implement recommendations of Central Coast ITS Plan when warranted
- Improve and promote Transportation Demand Management measures

The Route 101 North County Corridor Study, currently being updated by SLOCOG, will identify deficiencies on US 101, funding priorities within the corridor, and a range of recommendations to address the deficiencies. Based on current planning documents for the US 101 corridor and existing traffic analysis the ultimate focus will be to widen US 101to a six-lane freeway to accommodate projected traffic volumes.

Segment 2B & 2C: US 101/SR 46 East Interchange to Jardine Road

Programmed Projects

Currently there are three programmed projects proposed in this segment of SR 46:

- US 101/SR 46E Interchange Improvement Project
- SR 46E Golden Hill Road Intersection Improvements
- SR 46E Corridor Union Road Segment Widening Improvement Project

US 101/SR 46E Interchange Project will address the deficiency at this interchange for motorists making connections from SR 46 East to US 101. This project would provide dual left-turn lanes at the interchange and widen the southbound on-ramp to two-lanes to accommodate additional capacity.

SR 46E Golden Hill Road Intersection Improvements
Developers who own property adjacent to the intersection (the Golden Hill Retail Center) have provided funding to improve the intersection by providing dual left-turn lanes on all four legs and updating the signal phasing. The project is proposed for construction in summer 2009; final building permits are being secured through the City of Paso Robles.

SR 46E Corridor Union Road Segment Widening Improvement Project
The Route 46 Corridor Improvement Project includes a series of projects that will widen SR 46 to a four-lane divided expressway from Union Road to the east junction of SR 41/46 (PM 32.15-56.0). Currently the Union Road Segment, which starts in this section of SR 46 is under construction and expected to be completed in 2011. Table 3.13 and Figure 3.4 summarize the programmed projects that are on SR 46.

Table 3.13 Programmed Highway Projects on the SR 46 Corridor

Programmed Highway Projects on the SR 46 Corridor				
Segment	**Location**	**Project Description**	**Phase**	**Project Begin Construction**
1	US 101/SR 46 West Interchange	Interchange Improvements	Environmental Review/Preliminary Design	TBD
2A	US 101 thru the City of Paso Robles	Construct Median Barrier	Environmental Review/Preliminary Design	2011
2A	US 101/SR 46 East Interchange	Dual Lefts, Auxiliary Lane, ramp improvements,	Environmental Review/Preliminary Design	2011
2B	SR 46 East/Golden Hill Road	Construct Dual left-turns at all legs of intersection	Construction	Under construction
2C & 3A	SR 46 E Union Rd. to Geneseo Road	Widen SR 46E to four lanes (Union Segment)	Construction	Under construction
3A	SR 46 E Geneseo Road to Almond Drive	Widen SR 46E to four lanes (Whitley 1 Segment)	Final Project Design/ Construction 2011	2010
3A & 3B	SR 46 E Almond Drive to SR 46/SR 41 Junction	Widen SR 46E to four lanes (Whitley 2 Segment)	Final Project Design	> 5 years
3C	Antelope Grade SR 46 East	Extend Truck Climbing Lane	Final Project Design	> 5 years

Note: TBD – To be determined as funding allows.

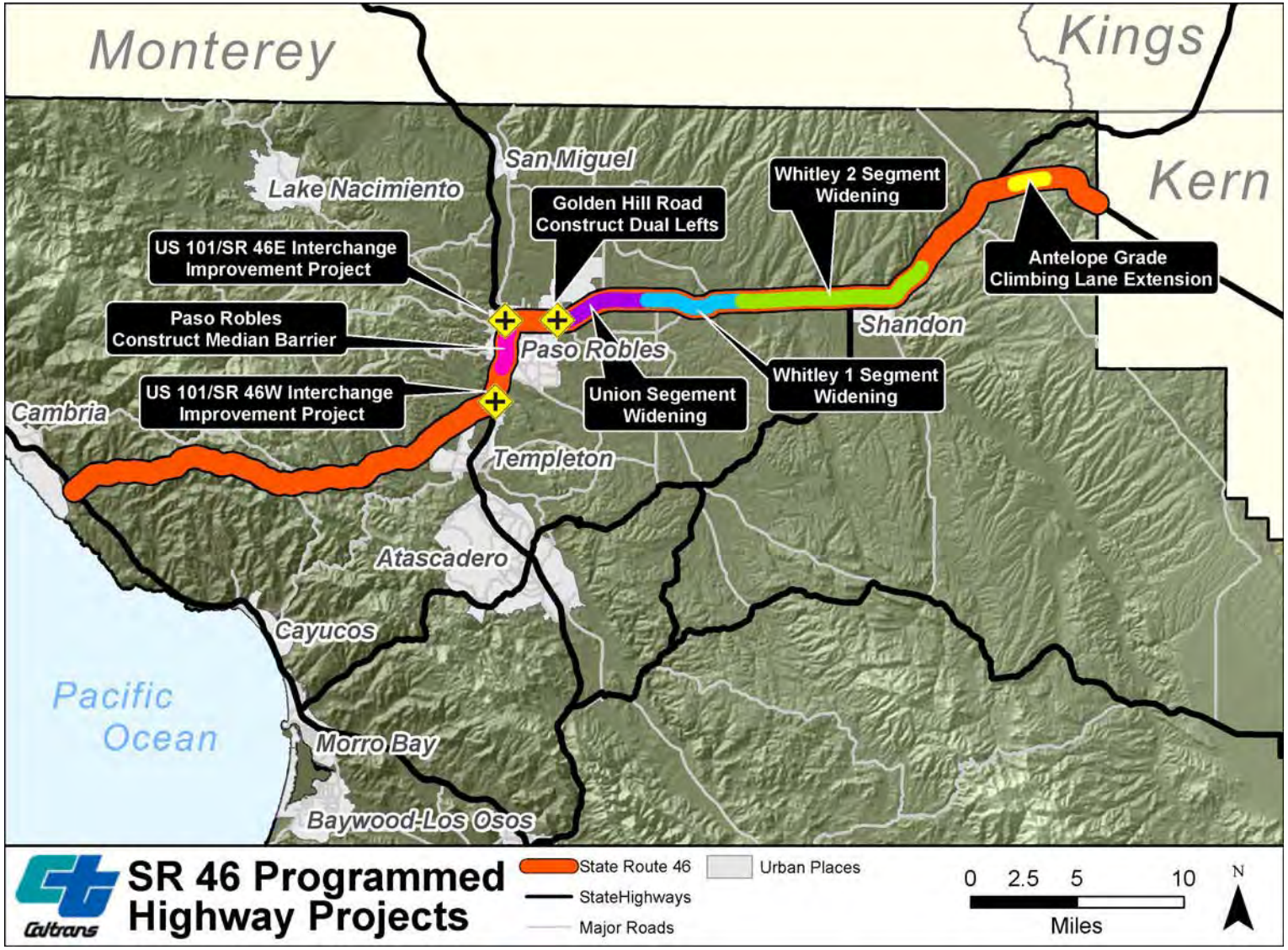

Figure 3.4 Programmed Highway Projects within the SR 46 Corridor

Conceptual Recommendations

Through collaboration and partnership, near-term operational recommendations to SR 46 E were identified while the long-term future need for freeway facility was recognized. Both the SR 46E CCS and the City of Paso Robles Parallel Route Study identified the Union Road area as a high priority location to focus on improving mobility and reducing demand to the urbanized segment of SR 46 E, while providing connectivity for local users. To improve mainline and interregional throughput, the team identified US 101 within the corridor as the priority for freeway expansion.

Facility Expansion

The mainline of SR 46 has been identified as needing a six-lane freeway beyond the 2030 planning horizon. The intersections along SR 46E are constricting the through-put on the mainline, therefore to prolong the benefits of the four-lane widening (Union Road widening & CMIA Project) it will be necessary to monitor the operations of each intersection to maximize throughput. Since SR 46 terminates at US 101, US 101 capacity needs to accommodate growth on the SR 46E corridor. Improvements must be compatible between these two routes.

In general, the types of SR 46E mainline improvements that would be considered include additional through lanes, auxiliary lanes, intersection improvements, etc. Due to the existing limitations associated with adjacent land use, the challenge has been to propose transportation improvements that integrate with land uses, while also focusing on specific locations in the corridor. The operational integrity of the US 101/SR 46E interchange is critical for the connection of US 101 and SR 46E. Future funding to extend the dual left-turn lanes farther east along SR 46 and to construct other ramp improvements should also be considered. Project recommendations will not preclude future widening of SR 46E or improvements to the US 101/SR 46E Interchange.

Local Streets

Improving local road circulation throughout this segment not only enhances local connectivity, but it also relieves pressure off the SR 46E mainline, which can reduce congestion along this stretch of the highway. The ability for local residents to travel to local destinations without having to traverse the State Highway will ultimately create a more sustainable transportation network throughout this corridor.

The following desired local road connections are located completely within the City of Paso Robles jurisdictional limits:

- Golden Hill Road extension to Dry Creek Road via a Huerhuero Creek bridge
- Wisteria Lane extension to Airport Road
- Union Road to Airport Road, via a Huerhuero Creek bridge

The City of Paso Robles' General Plan Traffic Circulation Element is currently being updated to reflect the above road connections as outlined in the City's Parallel Route Study. These local road improvements in combination with improvement to the SR 46E corridor will improve mobility.

Union Road

Union Road is a ***high priority*** location for improvement. Through partnership and public outreach, there were three main reasons why Union Road was chosen as a high priority location for mobility improvements:

1) Gap acceptance deficiencies and higher than average collision rates
2) Union Road has no existing business/residential development adjacent to the highway
3) Union Road is centrally located to services within the corridor (such as residential neighborhoods, the airport business complex, and businesses west of Union Road).

Improvements made at Union Road, coupled with an improved local road network, could divert traffic from using SR 46E which would improve mobility on the state and local systems. Modification at Union Road could affect access to adjacent intersections. A variety of traffic improvements can be implemented at this location to address the deficiencies identified.

Range of Improvement Options for Consideration

The following is a summary of some (though not all) possible solutions available for consideration along the corridor when initiating the Project Development Process:

Local Road Extensions and Connections: An effective local road system that serves as an alternative transportation network to the SR 46E highway system would reduce overall demand on the highway and improve local circulation. Congestion-related collisions would potentially be reduced as the demand on SR 46E decreases in the corridor.

Dual left-turn lane pockets: This type of improvement would provide additional capacity for vehicles making left-turning movements at existing signalized intersections. This would allow drivers to wait in dedicated turn-lanes rather than stopping in a through lane prior to turning left. Providing dual turn lanes provides a second movement, and moves vehicles more efficiently through the signal cycle's "green-time." This option also has the potential to reduce congestion-related, rear-end collisions.

Dedicated right-turn only lanes: This type of improvement allows turning movements to occur outside the through lanes.

Grade-separated structures:

Under/overcrossings: These types of improvements would reduce the points of conflict by separating local road traffic from SR 46E traffic. These options do not provide direct access to the highway system.

Interchanges: would provide a separation of local road traffic from highway traffic, while providing access to the highway system. Providing on-ramps/off-ramps will reduce driver confusion caused by merging vehicles, by improving egress and ingress.

Modify Access at Intersections: Modifying access at intersections (such as right-in/right-out only) would potentially result in fewer collisions due to driver confusion, by reducing the points of conflict. However, maintaining access to existing businesses could be affected and will need to be addressed with any intersection modification proposal.

Acceleration/Deceleration lanes: This type of improvement would potentially equalize speed differentials for vehicles that need to merge or weave on the highway system.

In addition to the recommendation to improve mobility in the Union Road area, the SR 46E CCS all considered other recommendations; Table 3.14 below summarizes the recommendations that were part of the SR 46E CCS.

Table 3.14 SR 46E CCS Recommendations & Implementation

Recommendations & Implementations of the State Route 46 East Comprehensive Corridor Study	
Recommendations	**Implementation**
Right-of-way preservation at the Union Road area and local road connections and extensions	Develop plan lines that delineate right-of-way preservation at Union Road area and incorporate into the City's Circulation Element and the County's Salinas River Area Plan.
Develop a funding strategy for the long-term vision	Interagency coordination will be required to develop a funding strategy.
Develop a funding strategy for construction of individual improvements, then initiate the Caltran's project development process and prepare a Project Study Report for projects on the State Highways	An interagency coordinated process should be initiated locally.
Local Road Extensions/Connections: • Golden Hill Road extension to Dry Creek Road, via a bridge at Huerhuero Creek • Wisteria Lane extension to Airport Road • Union Road to Airport Road, via a bridge at Huerhuero Creek	Adopt these local road improvements into the City's Circulation Element.
Transit: Expanded and/or new transit service within the corridor should be considered for the following locations: • Cuesta College – North County Campus • Airport Road Business Park • Chandler Ranch Area Specific Plan • Jardine Road • Shandon Additional transit locations should be developed in close coordination with the Regional Transportation Agency, the City of Paso Robles transit authority, and the Study partners to identify those locations that would best reduce single-occupant-vehicle demand on the SR 46E corridor.	Update the Paso Robles Short-range Transit Plan to reflect expanded or new transit service.

Table 3.14 SR 46E CCS Recommendations & Implementation (Continued)

Recommendations	Implementation
Commuter Programs: It is recommended that employers served by the corridor participate in a Transportation Demand Management Program. Currently, there is one such program in San Luis Obispo County that integrates all commute modes, the Transportation Choices Program.	**Trip Reduction Plan & Employee Commuter Survey:** Encourage employers surrounding the coordinator to adopt a Trip Reduction Plan and execute a Commuter Survey. **Carpool:** Invest in the further development and marketing of Rideshare's online carpool system. **Vanpool:** Provide grant funds to help subsidize new vanpools and vanpool users during their first year. **Guaranteed Ride Home (GRH)**: Provide GRH funding to accommodate increased program participation. **Mid-day Shuttles:** Initiate a similar program for the City of Paso Robles and North County. **Incentive Program & Employer Trip Reduction Tracking:** Encourage participation in the Lucky Bucks program by businesses in North County for commuters who live and work in this area.
Bike and Pedestrian Facilities: It is recommended that locations for bicycle and pedestrian facilities be identified in the corridor.	Update the City's Bicycle Master Plan.

Table 3.14 SR 46E CCS Recommendations & Implementation (Continued)

Recommendations	Implementation
Park and Ride Lots: New and expanded park and ride facilities should be considered at the following locations: • Cuesta College – North County Campus • Airport Road Business Park • Chandler Ranch Area Specific Plan • Jardine Road • Shandon • Mid-State Fair Parking Lot Additional locations should be pursued that would best reduce single-occupant-vehicle demand on the SR 46E corridor. It may be the case, locations for park and ride lots outside of the corridor may be effective for reducing trips within the corridor. Therefore, park and ride facilities within the corridor as well as outside of the corridor should be considered as mitigation for project specific traffic impacts.	Interagency coordination to identify appropriate locations for park and ride facilities.

Segment 3: Jardine Road to San Luis Obispo/Kern County Line

Programmed Projects

The concept for Segment 3 is four-lane expressway to the Kern County Line. The Route 46 Corridor Improvement Project includes a series of projects that will widen SR 46 to a four-lane expressway from Airport Road to the east junction of SR 41/46 (PM 32.15-56.0). The project segments are described below in Table 3.15, which include the status of each sections and proposed construction.

Table 3.15 SR 46 Corridor Improvement Project

SR 46 Corridor Improvement Project			
Location	Project Description	Phase	Project Begin Construction
SR 46 E Union Rd. to Geneseo Road	Widen SR 46E to four lanes (Union Segment)	Construction	Under construction
SR 46 E Geneseo Road to Almond Drive	Widen SR 46E to four lanes (Whitley 1 Segment)	Final Project Design/ Construction 2011	2011
SR 46 E Almond Drive to SR 46/SR 41 Junction	Widen SR 46E to four lanes (Whitley 2 Segment)	Final Project Design	> 10 years

Proposition 1B passed in 2006 allocated $67.7 million dollars to the "Whitley 1" segment and is proposed for construction in 2011. SR 46 East is a designated Safety Corridor, construction of a concrete median barrier between post miles 50.7-52.7 as well as installation of rumble strips have been completed as interim safety improvements. Table 3.16 displays existing and future levels of service (LOS) including the 2009 CMIA project.

Table 3.16 Segment 3 Level of Service (LOS) with the CMIA Project

Segment 3 Level of Service (LOS) with the CMIA Project			
Segment	Peak LOS Data		
	Existing 2006	Constructed Year 2009	Future 2029
3A	D	B	C
3B	D	B	C
3C	D	B	C

Conceptual Recommendations

Funding for the "Whitley 2" segment has of yet not been secured for construction, the recommendation would be to secure funding for this project. The Shandon-Carrizo Area Plan is currently being updated by San Luis Obispo County. The area plan is expected to address access associated with SR 46 & SR 41 and the community of Shandon. Although in the preliminary planning stages, Caltrans and SLO County are working in partnership to address the long-term needs and a range of possible solutions in this segment of SR 46.

SOURCES CONSULTED

- California Statewide ITS Architecture, November 2004
- San Luis Obispo County General Plan
- SLOCOG Regional Rideshare San Luis Obispo County Bike Map
- SLOCOG Regional Transportation Plan 2005
- San Luis Obispo County Bikeways Plan 2005
- Caltrans Route 46 Corridor Improvement Project, Environmental Assessment with FONSI/ Final EIR, May 2006
- Central Coast Intelligent Transportation Systems Implementation Plan, December 2007
- State Route 46 draft Transportation Concept Report, October 2008
- US Highway 101/SR 46W Improvement Project, Traffic Report, October 2008
- Caltrans District 5, Pavement Condition Survey, 2007
- Route 101/Route 46E Improvement Project, Draft Traffic Report, May 2008
- Caltrans Interstate 5 Transportation Concept Report, June 2008
- Caltrans District 6, State Route 46, Corridor System Management Plan, Kern County, July 2008
- Caltrans State Route 46 East Comprehensive Corridor Study, 2009
- Caltrans District 3, Draft Corridor System Management Plan, Interstate 80, March 2009

APPENDIX A: DEFINITION OF TERMS

Arterial	A general term denoting a highway primarily for through traffic usually on a continuous route.
Collector	Surface street providing land access and traffic circulation within residential, commercial, and industrial areas.
Expressway	An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.
Freeway	A divided arterial highway with full control of access and with grade separations at intersections.
Functional Classifications	A grouping of streets and highways sorted as to the character of service they are intended to provide.
Level of Service (LOS)	Term used to describe the quality of operation of a highway facility. It is a qualitative measure of the effect of such factors as, speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, convenience, safety and operation cost. In this report, LOS is based on peak traffic hours. On urban street systems, the quality of flow is most frequently controlled by traffic conditions at signalized intersections. The flow characteristics are defined in six levels of service.
LOS A	Describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions.
LOS B	Is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
LOS C	Is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass.
LOS D	This level approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volumes and temporary restrictions to flow may cause substantial drops in operating speeds.
LOS E	This level cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages for brief periods of time.
LOS F	Describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.

Rural	An area of under 5000 population
Rural Local	Serve primarily to provide access to adjacent land; and provide service to travel over relatively short distances as compared to collectors or other highway systems.
Rural Major Collector	1. Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance, nearby larger towns or cities, or with routes of higher classification. 2. Serve the more important intra-county travel corridors.
Rural Minor Arterial	1. Link cities and larger towns with major traffic generators that are capable of attracting travel over similarly long distances and form an integrated network providing interstate and inter-county service. 2. Be spaced at such intervals, consistent with population density, so that all developed areas of the state are within a reasonable distance of an arterial highway. 3. Provide service to corridors with trip lengths and travel density greater than those predominantly served by rural collector or local systems. These routes should be expected to provide for relatively high overall travel speeds, with minimum interference to through movement.
Rural Minor Collector	1. Are spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road. 2. Provide service to the remaining smaller communities. 3. Link the locally important traffic generators with their rural hinterland.
Rural Other Principal Arterial	All non-Interstate Principal Arterials. 1. Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel. 2. Serve all urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over. 3. Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.
Rural Principal Arterial – Interstate	The Interstate system consists of all presently designated routes of the Interstate System.
Urban	An area of 5000 to 50,000 population.

Urban Collector	The collector street system provides both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. In the central business district, and in other areas of like development and traffic density, the collector system may include the street grid, which forms a logical entity for traffic circulation.
Urban Local	Comprise all facilities not on one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher order systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged.
Urban Minor Arterial	Interconnects with and augments the urban principal arterial system and provides service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system. The minor arterial street system includes all arterials not classified as a principal and contains facilities that place more emphasis on land access than the higher system, and offers a lower level of traffic mobility. Such facilities may carry local bus routes and provide intra-community continuity, but ideally should not penetrate identifiable neighborhoods. This system should include urban connections to rural collector roads where such connections have not been classified as urban principal arterials.
Urban Other Principal Arterial	This system consists of all non-Interstate principal arterials.
Urban Principal Arterial – Interstate	The interstate system consists of all non-Interstate principal arterials.
Urban Principal Arterial – Other Fwys/Expwys	Connecting links of non-Interstate rural principal arterials. Connecting links of rural minor arterials.

Description:	Provides start and finish junctions, boundaries or other features of the identified segment.
Functional Classification:	1992 Functional Classification Maps developed by DOT in cooperation with U.S. DOT, FHA and counties.
National Highway System:	Included are all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.
Interregional Route System:	A set of interregional state highway routes, outside the urbanized areas, that provides access to, and links between, the state's economic centers, major recreational areas, and urban and rural regions.
Type of Facility:	C = Conventional, E = Expressway, F = Freeway, X = Unconstructed State Highway.
Type of Terrain:	Terrain describes the adjacent topography as to its effect on LOS and construction cost. M = Mountainous, F = Flat, R = Rolling.
Number of Lanes:	The total number of through lanes in both directions.
Lane Width, Shoulder Width, R/W Width, Median Width:	The width in feet.
ADT (present):	*Average Daily Traffic* – The average 24 hour volume, being the total number of vehicles during a stated period divided by the number of days in that period.
Growth Factor:	The 20-year Growth Rate expressed as a percentage of current AADT.
ADT (Future 2020):	ADT based on highway improvements for the concept horizon twenty years in the future.
Peak Hour Volume:	The number of vehicles passing a given point during a specified period of time at Peak Hour.
Directional Split:	Directional distribution of traffic during the peak hour
Peak Hour Trucks:	The percentage of truck traffic at peak hour.
Signalized Intersections:	An intersection that includes a power operated traffic control device by which traffic is regulated, warned, or alternately directed to take specific actions.
3-Year Collision Rate:	Collisions per million vehicle miles for a recent 3-year period. Rate includes the number of fatal, injury, and property damage collision only for a segment.
Statewide Collision Rate:	Statewide average collision rate for the same type of facility in comparable terrain over the same 3-year time period.

FAT:	Collisions in which fatalities occur
F & I:	Fatal and injury collisions per mile per year averaged for the three year period
V/C Ratio:	Ratio of highway volume to capacity.
LOS:	Level of Service is a measure of the speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost.
Proposed Route Concept (2020):	Most likely facility on the route to accommodate future traffic given future financial, environmental, planning and engineering factors.
Projected Peak LOS:	The peak LOS that is projected assuming construction of concept facilities.

APPENDIX B: CSMP MANAGEMENT TEAM LIST

County of San Luis Obispo	Dave Flynn	
	Richard Marshall	
	Jim Lopes	
	Michelle Olmsted	
City of Paso Robles	Jim Ap	
	Ron Whisenand	
	John Falkenstien	
	Ditas Esperanza	
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	Tim Gubbins	Cindy Utter
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	Paul McClintic	Doug Heuman
	Deb Larson	John Luchetta
	David Murray	James Kilmer
	Dan Herron	Melissa Cole
San Luis Obispo RTA	Regional Transit Manager	
Paso Robles CATS	Transit Services Coordinator	
Paso Robles Chamber of Commerce	Larry Werner	
Citizens Technical Advisory Committee	Chris Iversen (CTAC)	

APPENDIX C: ANALYSIS METHODOLOGY

The Traffic Analysis study consisted of data collection, analysis of the data, and evaluation of the results.

DATA COLLECTION

Data collection consisted of the field collection of traffic volumes, turning movement counts, travel time data, and queue length measurements. Traffic data was collected in the months of April, June, July, August, September and October in 2005.

- Mainline Highway 46 counts were collected using a combination of hoses and Hi-Star card counters in the months of April, June, July, August, September and October. Manual counts for mainline traffic volumes were also collected at some locations in April and June at the same time as the turning movement counts.

- Freeway ramp volumes were collected using hoses in August, September and October.

- Truck volumes for freeway ramps at Route 101 were collected using hoses in August, September and October.

- Side street volumes were collected using a combination of hoses and Hi-Star card counters and manual counts in the months of April, June, July and August.

Manual turning movement counts were collected at the locations and time periods listed in Table A:

Manual Count Data Collected					
	April			June	
	28	28	29	16	17
	AM	PM	PM	PM	PM
	6:30-8:30	4:00-6:00	4:00-6:00	3:30-5:30	1:30-5:30
101 S/B Off Ramp	X	X	X	X	X
101 S/B On Ramp	X	X	X	X	X
101 N/B Off Ramp	X	X	X	X	X
101 N/B On Ramp	X	X	X	X	X
Buena Vista Drive	X	X	X	X	X
Golden Hill Road	X	X	X	X	X
Union Road	X	X	X	X	X
Airport Road	X	X	X	X	X
Hunter Ranch Road				X	
Mill Road				X	
Jardine Road	X	X	X	X	X
McMillian Cyn. Road	X	X	X		
41/46 South	X	X	X		
41/46 North "wye"		X	X	X	X
	X	Data Collected			No Data

Table A

Travel Time Data- Travel time data for the westbound queue was collected on Thursday April 28th and June 16th and Friday April 29th and June 17th in the PM peak periods. The data was collected using the "Floating Car" method.

Queue Measurements- Data to establish the length of queuing was collected on Thursday April 28th and June 16th and Friday April 29th and June 17th in the PM peak periods. Aerial photographs, manual counts of cars in the queue, and field measurements were collected.

Collision Data- Collision data from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) was retrieved for a 3 year period between July 1, 2001 and June 30, 2004.

DATA ANALYSIS

Segments with Signalized Intersections- The traffic analysis program SYNCRO 6.0 was used to analyze the data and evaluate the operating characteristics of Signalized intersections and the sections of mainline highway between them. The SYNCRO program is based on procedures outlined in the Transportation Research Board's 2000 Highway Capacity Manual (HCM), it uses peak hour traffic volumes, lane configurations, and signal timing plans as inputs in the LOS calculations.

Segments with Unsignalized Intersections- The HCM software was used to analyze the data and evaluate the operating characteristics of unsignalized intersections and the sections of mainline highway between them.

LEVEL OF SERVICE STANDARDS

Level of Service (LOS) shall be used in this report to evaluate and characterize the operational efficiency of the highway and intersections. LOS is a description of the traffic operating conditions of a roadway segment or an intersection, ranging from LOS A, (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The current policy used by Caltrans for State highways is to maintain a service level of LOS C or better. In urban settings, LOS C/D cusp is acceptable.

Intersections- At signalized intersections, the LOS rating is based on the weighted average control delay (in seconds per vehicle) of all movements measured.

At side-street stop-controlled intersections, the LOS rating is based on the control delay (in seconds per vehicle) for each minor movement.

Table B summarizes the relationship between the average control delay in seconds per vehicle and LOS for signalized and unsignalized intersections.

Table B
Level of Service Thresholds for Intersections

Level of Service	Average Control Delay for Signalized Intersections (seconds per vehicle)	Average Control Delay for Unsignalized Intersections (seconds per vehicle)	General Description
A	0 to 10.0	0 to 10.0	Little or no congestion or delays.
B	10.1 to 20.0	10.1 to 15.0	Limited congestion, short delays.
C	20.1 to 35.0	15.1 to 25.0	Some congestion with average delays. Individual cycle failures begin to appear.
D	35.1 to 55.0	25.1 to 35.0	Significant congestion and delays. Many vehicles stop and individual cycle failures are noticeable.
E	55.1 to 80.0	35.1 to 50.0	Severe congestion and delays. Individual cycle failures are frequent occurrences.
F	> 80.0	> 50.0	Total breakdown with extreme delays unacceptable to most drivers.

SOURCE: TRANSPORTATION RESEARCH BOARD, HIGHWAY CAPACITY MANUAL, 2000

Note: Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.

<u>Highways-</u> The relationship between LOS and operations on multi-lane highways is summarized in Table C.

Table C
Level of Service Thresholds for Mainlines

Level of Service	For Multi-lane Highway Passenger cars per mile, per lane	General Description
A	≤ 11	Free flow with low volumes and high speeds. Traffic density is low, with speed controlled by driver desires, speed limits, and physical roadway conditions
B	≤ 18	Level allows stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
C	≤ 26	This level still allows stable flow, but the higher volumes more closely control speeds and maneuverability. Most drivers are somewhat restricted in their freedom to select their own speed, change lanes, or pass.
D	≤ 35	This level approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuation in volumes and temporary restriction to flow may cause substantial drops in operating speeds.
E	≤ 45	This level cannot be described by speed alone, but represents operation at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages for brief periods of time.
F	> 45	Forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or log periods of time because of the downstream congestion, In the extreme, both speed and volume can drop to zero.

SOURCE: TRANSPORTATION RESEARCH BOARD, HIGHWAY CAPACITY MANUAL, 2000

APPENDIX D: STATE ROUTE 46 EAST COMPREHENSIVE CORRIDOR STUDY

STATE ROUTE 46 EAST COMPREHENSIVE CORRIDOR STUDY

IN THE CITY OF PASO ROBLES, SAN LUIS OBISPO COUNTY

Department of Transportation
District 5

June 2009

I approve this *Comprehensive Corridor Study* for State Route 46 in District 5 as the overall long-term vision that will guide transportation decisions and investments for the State Route 46E corridor from SR 101/46E Junction east to Jardine Road.

Approval:

6/19/09

RICHARD KRUMHOLZ Date
District Director, D5
California Department of Transportation

Approval:

6/19/09

RONALD L. DE CARLI Date
Executive Director
San Luis Obispo Council of Governments

ACKNOWLEDGMENTS

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Brian Graham, Transportation Planner
Melissa Cole, Transportation Planner

Consultation from – Moore, Iacofano, & Goltsman, Inc

SAN LUIS OBISPO
COUNCIL OF GOVERNMENTS

Table of Contents

EXECUTIVE SUMMARY I

1.0 INTRODUCTION 1

1.1 The SR 46E Comprehensive Corridor Study 1

1.2 Corridor Study Process 3

2.0 CORRIDOR DEFINITION AND DESCRIPTION 6

2.1 Study Area Limits and Overview 6

2.2 Transportation Funding 11

2.3 Demographics and Land Use 13

3.0 PERFORMANCE ASSESSMENT 19

3.1 Existing & Future Travel Demand Characteristics 20

3.2 Existing Collision Data 24

3.3 Deficiency Assessment 26

4.0 PUBLIC OUTREACH 29

4.1 Public Engagement Findings 29

4.2 Public Workshops 30

5.0 CORRIDOR MANAGEMENT STRATEGY 34

5.1 Corridor Deficiencies 34

5.2 Recommendations 35

5.2.1 Local Road Extensions & Connections 35

5.2.2 State System Priorities 36

5.2.3 Traffic Demand Management (TDM) Strategies 40

5.2.4 Intelligent Transportation System (ITS) Strategies 43

5.2.5 Right – of –Way Preservation Plan 44

6.0 IMPLEMENTATION PLAN 47

LIST OF PREPARERS 50

APPENDIX A GLOSSARY & ACRONYMS 52

APPENDIX B PUBLIC PARTICIPATION 57

APPENDIX C ISSUES, GOALS & PROBLEM STATEMENT 58

APPENDIX D TRAFFIC DATA SUMMARY 62

D.1 Traffic Analysis Methodology 62

D.2 Existing Traffic Condition 66

D.3 Existing Collision Data 71

D.4 Future Traffic Conditions 73

D.5 Final Assessment 83

APPENDIX E COMMENTS AND RESPONSES 84

E.1 Email Messages 85

E.2 Website Communication 87

E.3 Workshop Comment Cards 92

APPENDIX F SLOCOG & CITY OF PASO ROBLES ENDORSEMENT 97

List of Tables

Table E.1 *Summary of Recommendations & Implementation* viii
Table E.1 *Summary of Recommendations & Implementation (Continued)* ix
Table E.1 *Summary of Recommendations & Implementation (Continued)* x
Table 2.1 *Planned Projects on SR 46E* 10
Table 2.2 *2000 & 2010 Growth Projection Comparison* 13
Table 2.3 *Planned Development in the City of Paso Robles* 17
Table 3.1 *Existing & Future Average Daily Traffic on SR 46* 20
Table 3.2 *Existing & Near-term (2010) Cumulative Roadway- Level of Service* . 24
Table 3.3 *Collision Data on the Mainline* 25
Table 3.4 *Summary of Intersection Collision Data* 26
Table 4.1 *Summary of Improvement Options/Mobility Interests* 30
Table 4.2 *Local Road Connections Identified in Public Workshop* 32
Table D.1 *Existing Average Daily Traffic on SR 46* 67
Table D.2 *Existing Mainline Traffic Conditions* 67
Table D.3 *Existing intersection conditions* 68
Table D.4 *Observed queue on westbound SR 46* 70
Table D.5 *Queue Length & Travel* 70
Table D.6 *Collision Data on the Mainline* 71
Table D.7 *Summary of Intersection Collision Data* 72
Table D.8 *Future Average Daily Traffic* 73
Table D.9 *Level of Service Analysis SR46 East & Airport Road* 74
Table D.10 *Level of Service SR 46East & Airport Road* 75
Table D.11 *Level of Service SR 46East & Golden Hill Road* 75
Table D.12 *Existing Roadway LOS* 76
Table D.13 *Cumulative Roadway LOS (2010)* 76
Table D.14 *Cumulative Roadway LOS (2030)* 76
Table D.15 *Existing Intersection LOS* 77
Table D.16 *Near-Term (2010) Cumulative Intersection Level of Service (Part 1)* 78
Table D.17 *Near-Term (2010) Cumulative Intersection Level of Service (Part 2)* 79
Table D.18 *Cumulative Intersection (2030) Level of Service (Part 1)* 80
Table D.19 *Cumulative Intersection (2030) Level of Service (Part 2)* 81
Table D.20 *Cumulative Intersection (2030) Level of Service (Part 3)* 82

LIST OF FIGURES

FIGURE E.1 COMPREHENSIVE CORRIDOR STUDY AREA I
FIGURE 1.1 SR 46 E WIDENING PROJECTS MAP 2
FIGURE 2.1 SR 46E CCS STUDY LIMITS 6
FIGURE 2.2 SR 46E CCS OVERVIEW MAP 7
FIGURE 2.3 HIERARCHY OF ROUTE DESIGNATIONS 8
FIGURE 2.4 ZONING ALONG OR NEAR THE SR 46E CORRIDOR..... 16
FIGURE 2.5 NEAR-TERM DEVELOPMENT PROJECTS ALONG OR NEAR SR 46E 18
FIGURE 3.1 EXISTING FRIDAY PM PEAK HOUR LOS..... 22
FIGURE 3.2 EXISTING THURSDAY AM PEAK HOUR LOS 23
FIGURE 4.1 LOCAL ROAD CONNECTIONS IDENTIFIED IN PUBLIC WORKSHOP..... 33
FIGURE D.1 PICTORIAL OF THE SIX LEVELS OF SERVICE (MAINLINE)..... 64
FIGURE D.2 LEVEL OF SERVICE FOR INTERSECTIONS WITH TRAFFIC SIGNALS..... 65
FIGURE D.3 LEVEL OF SERVICE FOR INTERSECTIONS WITH TRAFFIC SIGNALS..... 66
FIGURE D.4 EXISTING DIVERSION PATTERNS 69

EXECUTIVE SUMMARY

A measure of success in transportation planning is providing efficient and effective mobility options. An essential component of success is ensuring that the relationship between land-use and transportation planning is integrated into long-range planning efforts. Mobility, stewardship, safety, delivery and service are the main components of the California Department of Transportation's (Caltrans) mission. In demonstrating a commitment to safety and mobility, Caltrans has embarked on the *State Route 46 East Comprehensive Corridor Study (CC*S), to ensure good customer service to the public and our partners. This study identifies regional goals that reflect a balanced approach to transportation planning and decision-making. Caltrans commitment to demonstrate delivery relies on performance measures that identify the most beneficial investments for the corridor. Finally, as stewards, Caltrans is actively striving to preserve and enhance the resources and assets of California. This collective effort was able to elicit community interests and input for future planning of their community.

The four agency partners, Caltrans, San Luis Obispo Council of Governments, the City of Paso Robles, and San Luis Obispo County, developed strategies and identified transportation related priorities within the corridor. The CCS is a planning tool that will be an asset for planners and decision makers for transportation investment decisions. These are the objectives of the CCS:

- Assist in CEQA review and in the assignment of mitigation measures by illuminating a clear nexus between project specific impacts and a particular set of improvements;
- Develop priority locations for long-term improvement and right-of-way needs;
- Enable local agencies to better compete for future transportation funding;
- Provide assistance to other agencies when developing transportation and land use plans such as the City's Circulation Element, Regional Transportation Plan (RTP), etc.

Study Area

The study area of the CCS consists of a five-mile section of SR 46E within the urbanized area of the City of Paso Robles. The segment of highway extends from the US 101/SR 46E interchange (PM 29.7) to Jardine Road (PM 34.6). The study also considers adjacent land uses and local transportation systems and their impacts on SR 46E.

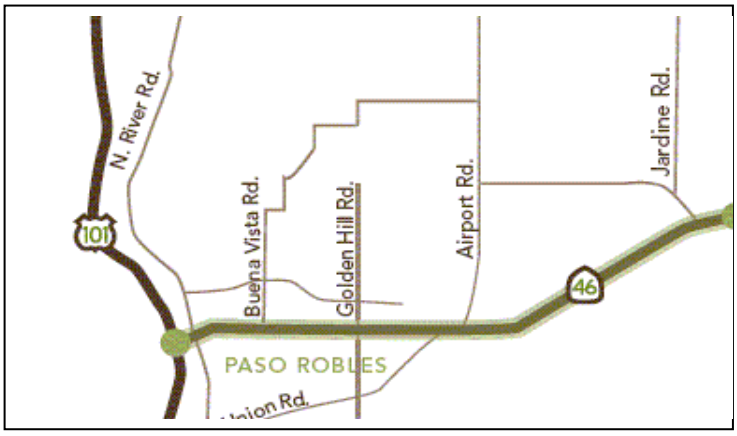

Figure E.1 Comprehensive Corridor Study Area

Projected growth statewide and locally over the next 20 years in San Luis Obispo County and throughout California is expected to place an even greater demand on the existing transportation system. The State Route 46 East (SR 46E) corridor is part of a transportation network that accommodates all aspects of travel in the region, including: commuters, tourists, shoppers, public transit patrons, trucks and other emergency personnel. Because 46E is a major goods movement facility, approximately 20% of the vehicles in this corridor are trucks. A great portion of the goods movement demand is driven by the large agricultural industry in the Central and Salinas Valleys. Additionally, the Central Coast provides recreational opportunities for travelers throughout the State. As growth continues on a statewide and regional basis, the need for more efficient transportation will increase.

Environmental Context

Federal and California law requires environmental documentation for any discretionary action (i.e., project). The environmental documentation evaluates the environmental impacts that would result from transportation improvements. As stewards of the resources within the state transportation system, Caltrans must balance the state resources within the overall context of community concerns and environmental resources. Technical analysis is prepared to identify impacts and appropriate mitigations.

Environmental Resources

- *Air Quality & Climate Change*
- *Energy*
- *Visual Resources*
- *Biological*
- *Cultural*
- *Farmland*
- *Open Space*
- *Geology, Soil, Seismicity*
- *Water Resources*
- *Hazardous Materials*
- *Noise*
- *Traffic*

Through the preliminary planning process, the stakeholders identified areas of particular importance for additional analysis, such as visual resources, water quality, air quality & climate change, farmland, and biological resources. Of particular interest to the community of Paso Robles are visual resources. The City of Paso Robles has recently prepared a Gateway Plan[1] for the City, which shows strong interest in how the traveling public perceives the City as they enter the SR 46E Corridor. The context of the SR 46E corridor will need to be defined in such a way that it balances the mobility interests of its users with the surrounding land use and natural resources. Project proposals will need to consider the aesthetic concerns of the community as well as providing design features that are appropriate in scope and need in the corridor.

Additionally, air quality and climate change are of particular interest on both a national and statewide basis. The entire region currently meets the State and Federal standards for air quality. The recently documented health impacts of air pollution on people living in areas with poor air quality have created a heightened awareness to maintain and perhaps enhance our existing air quality. The State has become a national leader in addressing climate change requiring the reduction of greenhouse gases (GHG) on a statewide basis (Assembly Bill 32 and State Bill 375). The challenges to meet these GHG thresholds will be tremendous on transportation sector. San Luis Obispo Council of Governments

[1] *Paso Robles Gateway Plan: Design Standards*, City of Paso Robles, March 2008

(SLOCOG) has undertaken a blue print planning effort[2], *Community 2050*, which will take the first steps to develop a plan and/or policies that address the relationship between land use and transportation uses. Performance measures will focus on greenhouse gas emissions, climate change, and the land use/transportation planning nexus.

Performance Measures

To adequately identify the current and projected deficiencies within the corridor, prioritize locations for investment, and develop a range of solutions, Caltrans and the partners identified and analyzed a set of performance measures. Performance measures provide a means to quantify and review the deficiencies within the corridor and the efficiency & effectiveness for a transportation facility to operate. The following performance measures were used to quantify the deficiency and priority within the corridor:

- Collision Rates/Concentrations: Areas of higher than average collision rates/concentrations indicated locations that need to be of focus to improve the safety at that location. Through analysis of the collisions and the concentrations of the collisions, the source of the collisions can be identified and solutions suggested that improve the existing situation.
- Delay: Delay is a performance measure that indicates if a transportation facility is operating well to move traffic, either along the mainline or through an intersection. This takes into account the traffic volumes, the queues created due to congestion, and the time & money lost due to delay within the system.
- Life-cycle Cost: The objective of a life cycle cost analysis is to translate the effects of an investment into monetary terms and to account for the fact that benefits generally accrue over a long period of time while capital costs are incurred primarily in the initial years. In addition to capital costs life-cycle costs can be quantified by travel time costs, vehicle-operating costs, safety costs, ongoing maintenance costs, pavement rehabilitation, energy costs, and emissions. Using life-cycle cost as a measure ensures that the investments in the corridor are sustained.

Performance Assessment

Based on existing traffic studies deficiencies where identified within the corridor, data demonstrates higher than average collision rates at the signalized intersections (Buena Vista Drive, Golden Hill Road and the US 101/SR 46 E junction) and delay occurring during the Friday afternoon summertime peak. Traffic projections based on anticipated statewide growth and potential new land use changes would result in a continued deterioration within the corridor should nothing be done.

Increasing mainline capacity along SR 46E cannot take place until such time that capacity and operational improvements are made to the US 101 mainline. The analysis concludes the need to improve the SR 46E facility with grade-separated access points, a plan to address the failing at-grade signalized intersections, and improvement of the local road network within the corridor.

[2] *San Luis Obispo Region, Draft Community 2050*, SLOCOG, September 2008

Corridor Management Strategy

Maintaining and improving mobility will no longer depend solely on expanding the transportation system. Instead, an integrated approach is needed to maximize mobility. The corridor management strategy has three key elements; transportation, land use, and funding. Transportation as a component will study four strategies; reduce travel demand (Travel Demand Management), increase efficiency with technology (Intelligent Transportation Systems), improve connectivity on the local road network, and improve efficiency on the highway. Land use takes into account the type, scale and location of development adjacent to the transportation system and how to analyze impact to the existing system as well as future needs associated with growth. Funding as a component refers to wise use of currently available funds, appropriate exploration of new revenue sources, and readiness to act when new funds become available.

Comprehensive Corridor Study Goals

- *Increasing safety & efficiency*
- *Fostering connectivity in all directions*
- *Separating local, regional and interregional traffic*
- *Promoting multi-modal movement*
- *Providing a acceptable Level of Service*
- *Ensuring goods movement*
- *Enhancing community cohesion, character & quality of life*

Transportation Strategy

Travel Demand Management

Travel Demand Management (TDM) strategies are designed to influence an individual's travel behavior by making alternatives to the single-occupant automobile more attractive, especially during peak commute periods. Some examples of TDM strategies are carpools or vanpools, public transit, non-motorized modes, congestion pricing, and providing the public with reliable and timely traveler information. In an effort to address travel demand, early public planning during the development of this document has identified some areas where additional TDM strategies could be implemented. As part of the implementation plan, existing TDM strategies and future needs will require identification. Potential new strategies will also need to be proposed. Coordination with Cuesta College has resulted in a desire for additional bus service for the college, as well as new or enhanced service to the community of Shandon east of the study limits. Public comment during the public meetings also indicated a desire for new park and ride lots, bicycle and pedestrian facilities, and enhanced bus service. Various employers in the Airport Business Area have expressed interest in developing new or expanded Rideshare programs and flexible work schedules to help decrease vehicle trips during peak hours.

Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS) refer to a range of diverse technologies which, when applied to our current transportation system, can help improve safety, reduce congestion, enhance mobility, minimize environmental impacts, save energy, and promote

economic productivity. ITS technologies include information processing, communications, control, and electronics. Examples of ITS technologies include Changeable Message Signs and Close-circuit Television. Currently there are plans to apply ITS solutions with the corridor such as 511 Interactive Traveler Information, Smart Call Boxes, Road Weather Information Systems, and an improved Changeable Message Sign plan.

Local Road Extensions and Connections

Land use development within the corridor is creating a greater demand on the highway facility. For this reason local road connections and extensions are a high priority. Emphasis on the ability of these connections to improve circulation and reduce demand on SR 46E was studied in the City of Paso Robles Parallel Route Study. Improving local road circulation through the study area not only enhances local connectivity, but it also takes pressure off the SR 46 E mainline, which can relieve congestion along this stretch of the highway. Both the CCS and the Parallel Route Study identified local road extensions and connections as a strategy to improve circulation and alleviate congestion on SR 46E.

State System Priorities

In order to achieve a high degree of utility from an expanded local network, it must be developed in concert with future highway improvements. Locations for possible grade separations such as, interchanges, undercrossing, and overcrossing were studied. Priority locations were identified based on known constraints, public input and partner objectives. To reduce the overall points of conflict on the mainline and improve local connectivity, Buena Vista Drive, Golden Hill Road, Union Road, Airport Road, Mill Road and Jardine Road were studied. The team focused on long-term investments revolving around the Union Road area and completing the local circulation system; the other locations were not viable based on constraints and objectives, such as proximity to US 101, adjacent local businesses, and an ability to achieve mobility interests.

Funding Strategy

There is broad recognition of the looming set of challenges related to funding transportation infrastructure and programs throughout the State and the impact of demand on the existing transportation system. The question of, “How will investments be funded?” is not easily answered.

Revenues from gasoline and other fuel taxes appear insufficient to meet the current use and the projected growth. After years of steady growth, federal tax revenues have reached a plateau; additionally state gas tax revenues are slowing down while the tax rates for the federal and state have remained stagnate. As federal and state revenues slow, local and regional governments have been asked to bear an ever-increasing burden of funding new infrastructure.

This region has the creativity and resolve to develop innovative solutions to our transportation needs. Establishing priorities and developing a funding framework are critical to implementing a successful and competitive plan for the corridor. Funding

partners paying their fair share will be an essential component to the successful implementation of projects and programs in the SR 46E corridor. The lack of funding commitments in the future could slow implementation of this study and result in continual deterioration of corridor mobility.

Land Use Strategy

The land use agencies of City of Paso Robles and San Luis Obispo County will strengthen the nexus between land use and transportation by adopting the recommendations of this Study into the City's Traffic Circulation Element and the County's Salinas River Area Plan. This consistency between the long-range vision of the SR 46 E corridor and the land use planning documents will be a tool for CEQA analysis when determining impacts and mitigations. Incorporation of right-of-way preservation plan lines into the City's Circulation Element for the Union Road area and local road extensions/connections identified in the Parallel Route Study will assist in land use decisions.

Recommendations

This document will implement a plan that improves and enhances mobility interests in the corridor. Throughout the Study process, the team has identified values that the mobility improvements in the corridor should be consistent with:

- Be context sensitive
- Moderate speeds for safety and to indicate arrival through a community, or passage through a place worthy of note
- Provide access to, across, and along the highway

This study identifies the need to preserve right-of-way for the priority location at the Union Road area. To ensure that the corridor preservation plan is implemented, the local land use plans would need to be updated to reflect the agreements between the partners. To demonstrate the desire for consistency among local, regional and state government planning documents, it is recommended that incorporation of the recommendations would be reflected in the following local planning documents:

- Caltrans Corridor System Management Plan for SR 46
- SLOCOG Regional Transportation Plan
- SLOCOG Community 2050
- San Luis Obispo County Salinas River Area Plan
- City of Paso Robles General Plan Update: Circulation Element

Caltrans, SLOCOG, San Luis Obispo County and the City of Paso Robles are funding partners for the corridor improvements along SR 46 East. Developing funding strategies is essential to the success of any infrastructure improvements and, continued coordination will be required of the partners. *Table E.1* summarizes the recommendations of the CCS and the expected next steps to implement the Study.

As proposed improvements are funded, projects that include improvements to State Route 46E would follow the Caltran's Project Development Process. This process would incorporate a detailed study of traffic operations & geometric configurations to confirm design options and mobility needs identified in this document. Development and enhancement of existing TDM strategies/programs are recommended to encourage a mode shift that can alleviate some of the local demand within the corridor. The right-of-way preservation plan provides the nexus between land use and transportation planning in the corridor. Providing connectivity and a sense of place for the community, reducing congestion, enhancing goods movements, and enhancing safety will improve the state and local transportation network.

Table E.1 Summary of Recommendations & Implementation

Recommendations	Implementation
Right-of-way preservation at the Union Road area and local road connections and extensions	Develop plan lines that delineate right-of-way preservation at Union Road area and incorporate into the City's Circulation Element and the County's Salinas River Area Plan.
Develop a funding strategy for the long-term vision	Interagency coordination will be required to develop a funding strategy.
Develop a funding strategy for construction of individual improvements, then initiate the Caltran's project development process and prepare a Project Study Report for projects on the State Highways	An interagency coordinated process should be initiated locally.
Local Road Extensions/Connections: • Golden Hill Road extension to Dry Creek Road, via a bridge at Huerhuero Creek • Wisteria Lane extension to Airport Road • Union Road to Airport Road, via a bridge at Huerhuero Creek	Adopt these local road improvements into the City's Circulation Element.
Transit: Expanded and/or new transit service within the corridor should be considered for the following locations: • Cuesta College – North County Campus • Airport Road Business Park • Chandler Ranch Area Specific Plan • Jardine Road • Shandon Additional transit locations should be developed in close coordination with the Regional Transportation Agency, the City of Paso Robles transit authority, and the Study partners to identify those locations that would best reduce single-occupant-vehicle demand on the SR 46E corridor.	Update the Paso Robles Short-range Transit Plan to reflect expanded or new transit service.

Table E.1 Summary of Recommendations & Implementation (Continued)

Recommendations	Implementation
Commuter Programs: It is recommended that employers served by the corridor participate in a Transportation Demand Management Program. Currently, there is one such program in San Luis Obispo County that integrates all commute modes, the Transportation Choices Program.	**Trip Reduction Plan & Employee Commuter Survey:** Encourage employers surrounding the coordinator to adopt a Trip Reduction Plan and execute a Commuter Survey. **Carpool:** Invest in the further development and marketing of Rideshare's online carpool system. **Vanpool:** Provide grant funds to help subsidize new vanpools and vanpool users during their first year. **Guaranteed Ride Home (GRH)**: Provide GRH funding to accommodate increased program participation. **Mid-day Shuttles:** Initiate a similar program for the City of Paso Robles and North County. **Incentive Program & Employer Trip Reduction Tracking:** Encourage participation in the Lucky Bucks program by businesses in North County for commuters who live and work in this area.
Bike and Pedestrian Facilities: It is recommended that locations for bicycle and pedestrian facilities be identified in the corridor.	Update the City's Bicycle Master Plan.

Table E.1 Summary of Recommendations & Implementation (Continued)

Recommendations	Implementation
Park and Ride Lots: New and expanded park and ride facilities should be considered at the following locations: • Cuesta College – North County Campus • Airport Road Business Park • Chandler Ranch Area Specific Plan • Jardine Road • Shandon • Mid-State Fair Parking Lot Additional locations should be pursued that would best reduce single-occupant-vehicle demand on the SR 46E corridor. It may be the case, locations for park and ride lots outside of the corridor may be effective for reducing trips within the corridor. Therefore, park and ride facilities within the corridor as well as outside of the corridor should be considered as mitigation for project specific traffic impacts.	Interagency coordination to identify appropriate locations for park and ride facilities.

1.0 INTRODUCTION

1.1 The SR 46E Comprehensive Corridor Study

The primary purpose of this Corridor Study is to assist the four key partner agencies, Caltrans, SLOCOG, City of Paso Robles, and San Luis Obispo County, in addressing mobility and safety concerns and develop a long term vision for the State Route 46 East (SR 46E) corridor. Currently, there is a need to strengthen a planning nexus between transportation and land use planning. Due to growing demand on SR 46E, the corridor has not had a coordinated long-range vision. This lack of an updated and coordinated long-range vision has made it more challenging to conduct reviews of local private development within the corridor.

SR 46E is a major east/west interregional route that runs between State Route 1 along the Central Coast, near Cambria in San Luis Obispo County, and State Route 99 in the Central Valley, near Wasco in Kern County. The highway is the busiest connection from California's coastal regions to the Central Valley, between the Pacheco Pass east of Gilroy in Santa Clara County and the Grapevine (I-5) in Los Angeles County. The segment of the highway west of US Route 101 to the coast (Highway 1) is commonly referred to as State Route 46 West (SR 46W). The segment east of US 101 to the San Luis Obispo/Kern County line is referred to as State Route 46 East (SR 46E).

Demand on SR 46E comes from interregional mobility and goods movement, travel within the region, as well as locally generated trips. The demand for goods movement is evidenced by relatively heavy truck traffic that accounts for a higher percentage compared to other routes; on SR46E trucks account for approximately 20% of vehicles within the corridor. While travel demands continue to increase throughout the corridor, infrastructure improvements have not kept pace for the facility to operate at an acceptable level of service. Congestion at the US 101/46 East interchange and along SR 46E as it enters Paso Robles has resulted in excessive delays during the Friday summertime afternoon peak periods.

Jurisdictions working together to limit rising costs by identifying priorities is an important strategy. Transportation plans by their nature lack specificity and detail, but this Study will provide a vision of the corridor's priorities and the needs related to new improvements.

1.2 Relationship to Other Plans

Transportation planning occurs at three essential levels: state; regional; and local. At the State level, Caltrans' Transportation Concept Report (TCR) identifies a baseline for existing conditions along the facility and what projected traffic would be if no highway major improvements were constructed over a 20-year period. The TCR identifies areas of deficiency within a facility and gives basic recommendations to achieve an acceptable future Level of Service (LOS). For SR 46E, the TCR identifies the concept for a future facility as a multi-lane, access-controlled facility. -*This information will provide the foundation for the CCS, and lead to recommendations in the Study which will override those of the TCR.

In addition, the CCS will be integrated into the Corridor System Management Plan (CSMP) for the entire State Route 46 corridor within Caltrans District 5 (San Luis Obispo County). The CSMP is a requirement for all projects funded through the Corridor Mobility Improvement Account (CMIA) and the 2006 California 1B Bond Act. Approximately $67 million of Proposition 1B funds have been allocated for the widening of SR 46E from 2 lanes to 4 lanes from Geneseo Road (PM 36.6) to Almond Drive (PM 41.2), a project that is known as "Whitley 1" (see *Figure 1.1* below).

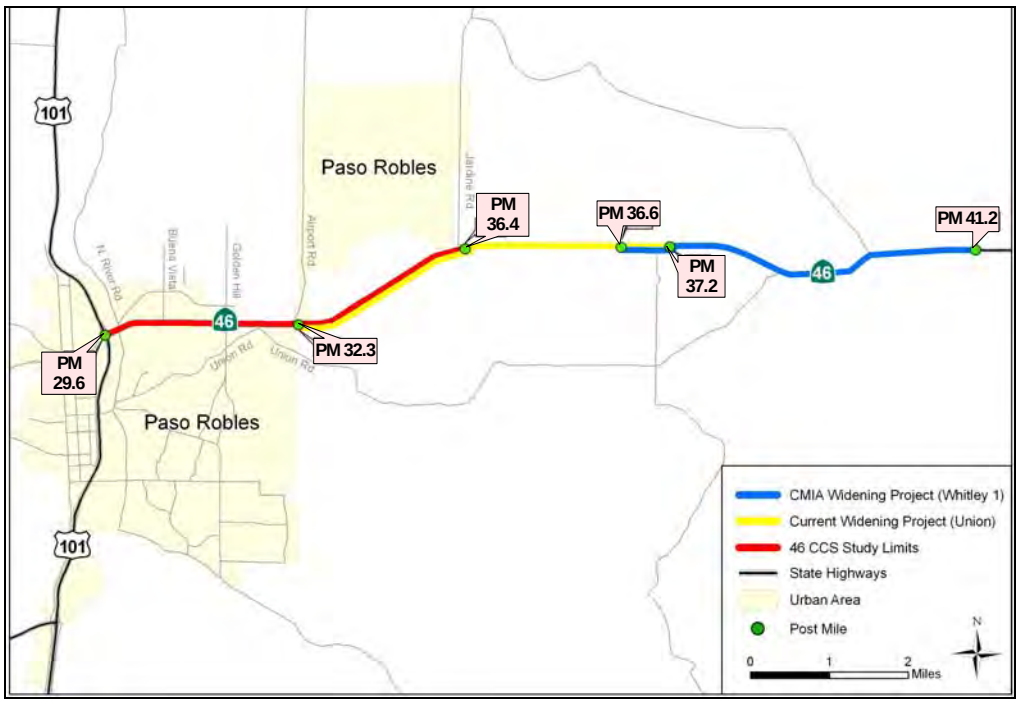

Figure 1.1 SR 46 E Widening Projects Map

The main objective of the CSMP is to provide a tool to help sustain the benefit of transportation investments. The plan will be used as an integral tool for managing the corridor to achieve the highest mobility, which benefits across all jurisdictions and modes, for both regional and interregional travelers. While the CCS focuses on the five-mile section within the City of Paso Robles, the CSMP studies the entire SR 46 corridor, from the Kern/San Luis Obispo County Line to the Junction with SR 1, near Cambria. Once complete, the CCS recommendations will be incorporated into the SR 46 CSMP.

At the regional level, the San Luis Obispo Council of Governments (SLOCOG) Regional Transportation Plan calls for SR 46E to be a four-lane expressway in the 20 year planning horizon. *Vision 2050*, the Regional Transportation Plan (RTP) adopted in 2005, identifies how the corridor has been a matter of consideration for many years. Planned improvements for the corridor include: construction of grade-separated interchanges where feasible; improvements of the US 101/SR 46E Interchange; local frontage road improvements and alternate routes to the highway; acceleration and deceleration lanes; left and right-turn channelization; and access control. Specific projects in the RTP include: Widen to 4-lanes SR 46E from Airport Road easterly to the 41 Junction; US 101/SR 46E Interchange Improvements; and Airport Road Interchange.

Locally, the Circulation Element (2003) of the City of Paso Robles' General Plan identifies the future of SR 46E as either a four-lane freeway or six-lane expressway from SR 101 to Golden Hill Road. While widening is discussed as a feasible improvement, the General Plan indicates that the lack of interchange capacity requires alternative corridor solutions. The City's plan also makes reference to the outcome of this Corridor Study to refine this determination. In addition, the City has concluded the State Route (SR 46E) Parallel Routes Study. This Study considers possible local road connections that could relieve congestion and improve connectivity of the local street network, as well as SR 46E through Paso Robles. Study findings will be used in guiding the update of the City's Circulation Element, which is expected to be complete in 2009.

1.2 Corridor Study Process

The following outline details the general approach used in this process for raising issues, sharing information, problem solving, and decision-making during the development of the corridor study:

<u>Steering Committee</u>
Comprised of representatives with decision-making authority from the four key partners:

- City of Paso Robles
- County of San Luis Obispo
- San Luis Obispo Council of Governments
- California Department of Transportation (District 5)

The Steering Committee provided essential guidance on the development of the CCS at key decision points. The CCS would not have advanced through milestones without definitive guidance from the Steering Committee. The Steering Committee established a role statement, agreed to by all partners, to address:

The Steering Committee provided essential guidance.

- Member responsibilities and expectations
- Authority for decisions and empowering delegates, as appropriate
- Interfacing with governing (elected) boards
- Approval authority for final product and intermediate decision points
- Group decision-making and conflict resolution
- Logistical elements such as frequency of meetings, representation, meeting agendas, read-ahead material, and meeting summaries

Study Team

The Study Team consisted of a multi-disciplinary group of staff representatives of each of the four partner organizations. This team was responsible in raising issues, considering technical information, discussion, problem solving, and making recommendations to the Steering Committee. The Study Team was the primary collaborative "work center" for the CCS. Each of the four partner organizations appointed one member of the Study Team as their single point of contact. This contact was responsible for coordinating appropriate staff from their organization for meetings, disseminating information within the organization and keeping their managers informed.

The Study Team was the primary collaborative "work center" for the CCS.

Technical Advisory Committee (TAC)

A smaller technical work group was formed and meetings held on an as-needed basis to investigate certain issues at a greater level of detail. Each agency partner identified staff with special expertise to participate in specific discussions. The methodology for data collection and analysis, for example, was discussed in detail with the TAC before it was carried forward to the Study Team or Steering Committee.

Stakeholder Outreach

One task of the Study Team was to develop an appropriate outreach plan to all other interested stakeholders. The strategy identified the appropriate milestones for engaging broader participation and identified the most effective ways to solicit and manage input from:

- Public
- Elected Officials
- Resource Agencies
- Media
- Community Groups

Additional information on the stakeholder outreach can be found in *Section 4.0*.

Documentation of Recommendations & Decisions

All recommendations by the Study Team to the Steering Committee, and subsequent decisions, were carefully documented. Documentation establishes integrity and efficiency in the process, and promotes accountability and transparency among the key partners.

2.0 CORRIDOR DEFINITION AND DESCRIPTION

2.1 Study Area Limits and Overview

This Comprehensive Corridor Study for SR 46E in northern San Luis Obispo County considers travel demand and future improvement options along SR 46E. The study limits include the 5-mile segment of SR 46E between the north junction with US 101 (PM 29.7) and Jardine Road (PM 34.6). The team concentrated on improving traffic flow and relieving congestion by analyzing the local road connections, the local circulation network, and alternate modes of transportation, and Rideshare programs, without expansion of the highway system alone.

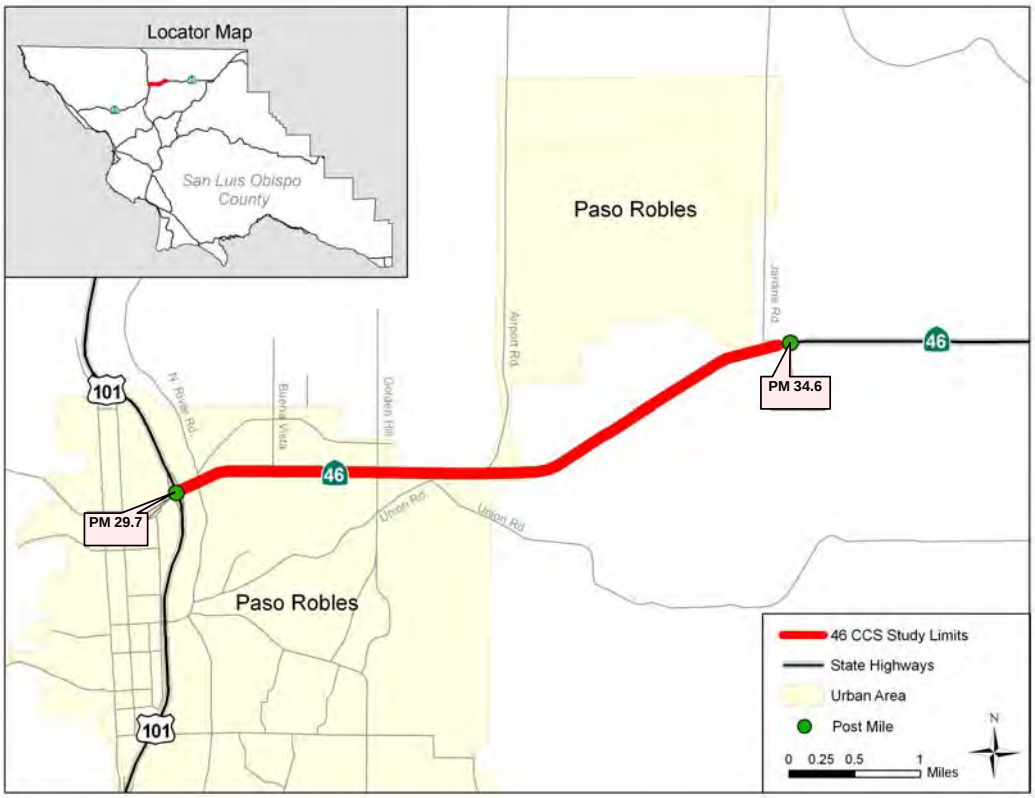

Figure 2.1 SR 46E CCS Study Limits

SR 46 within District 5 is currently a 2 to 4-lane highway for its entire length. SR 46 West begins at the junction with SR 1, just south of Cambria, and continues easterly to the junction with US Route 101, just south of Paso Robles (see *Figure 2.2*). This section of the highway passes over the Santa Lucia mountain range, grazing land, vineyards, and wineries located in the hills west of Paso Robles. SR 46 east of SR 101 serves as a major goods movement route for produce and other products coming out of the Salinas Valley to other areas throughout California.

Conversely, goods from the interior valley come into the Central Coast. SR 46E provides access between US 101 and the rural Central Coast, including several communities and major tourist destinations such as coastal beach areas, Hearst Castle and the Big Sur Coast. In addition, county residents use the route for business, commuter travel, and personal trips. The west portion of SR 46 provides access between coastal communities such as Cayucos and Cambria and inland communities along US 101 including Paso Robles, Templeton, and Atascadero. At the south end of Paso Robles, SR 46 runs contiguously with US 101 for 3.8-miles north to the 24th Street alignment in central Paso Robles.

East of SR 101, SR 46 then continues passing commercial, light industrial, low-density residential, agricultural, and open space parcels in the City of Paso Robles. This section of SR 46 (US 101 to Airport Road) is the only section that is currently a 4-lane divided highway, but construction is underway to widen SR 46E to a 4-lane facility, from Airport Road to Almond Drive. From the Paso Robles east city limit, through Whitley Gardens, and on to Shandon, SR 46 cuts a relatively straight path through open agricultural (vineyards) and ranch land. SR 46 is contiguous with SR 41 from their junction east of Shandon to a point 6.5 miles east near Cholame, where the two routes diverge. SR 41 heads northeast while SR 46 continues easterly to the San Luis Obispo/Kern County line.

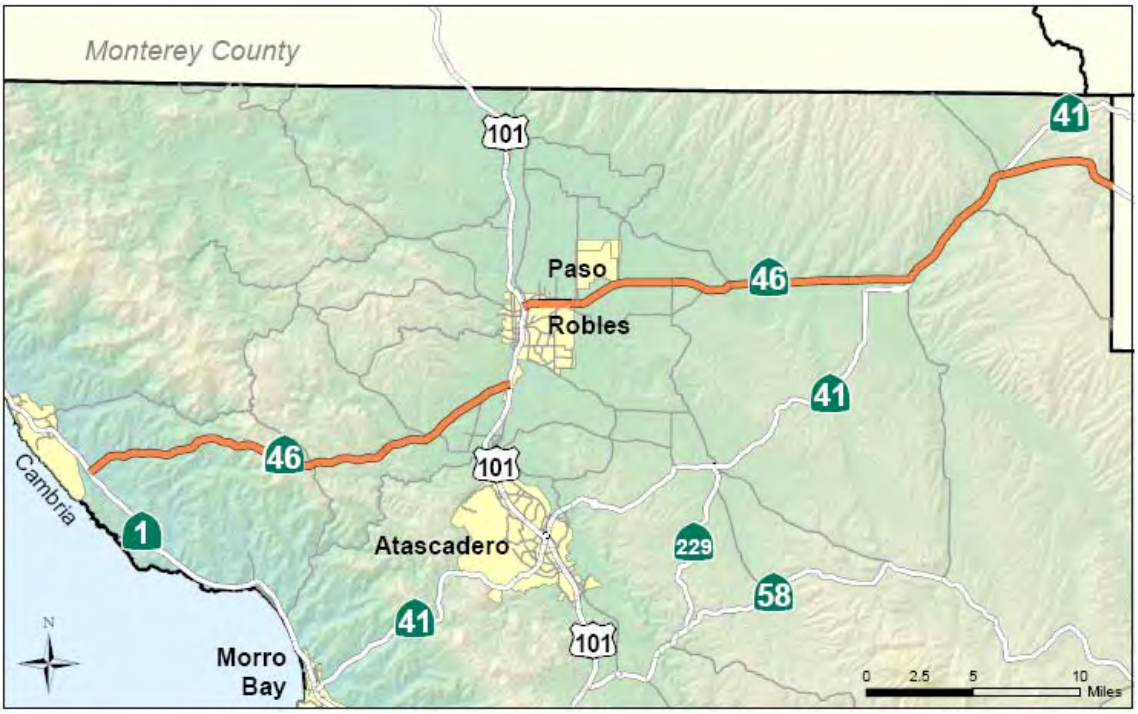

Figure 2.2 SR 46E CCS Overview Map

Importance of Route

At the statewide level, the route's significance can be characterized in part with a review of its various designations (refer to the Glossary for detailed description of route designations). Of the 249 California State Routes, only 10 are designated as Focus Routes, which is a subset of the Interregional Road System and High Emphasis Routes (see *Figure 2.3* below). Due to their interregional significance of moving both goods and people, the State has identified these Focus Routes as corridors that should be of highest priority for completion to minimum facility standards in the 20-year period.

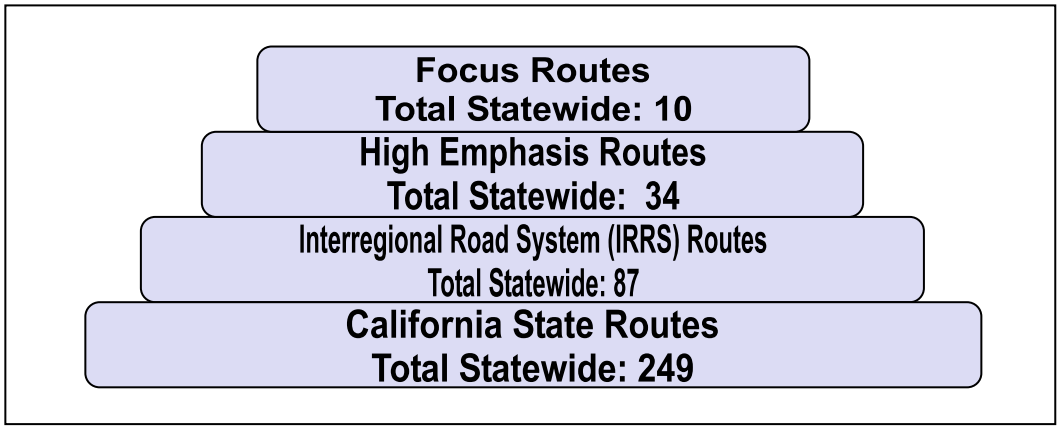

Figure 2.3 Hierarchy of Route Designations

SR 46East has the following designations:

- Interregional Road System (IRRS)
- High Emphasis Route
- Focus Route
- State Highway Extra Legal Load (SHELL) Route
- Strategic Highway Network Corridor (STRAHNET) Route
- Terminal Access Route to the National Truck Network
- National Highway System
- Freeway and Expressway System

SR 46 provides a vital link between the coastal and inland parts of the county, providing a conduit for goods movement and tourism important to the regional and state economy. Due to the statewide significance of this route, a recent bond measure (Proposition 1B) allocated funds to construct the widening of SR 46E from two-lanes to four-lanes in the second segment, Whitley 1, as shown in *Figure 1.1*. Locally, the SR 46E corridor, together with US 101, provides important access for businesses, residents, visitors and commerce in the City of Paso Robles.

Local Road Connections to the State Highway

Establishing and managing connections between local roads and state transportation facilities is an important aspect of highway management. US 101 is an established access-controlled freeway. SR 46E through Paso Robles is currently an expressway with partial access control and is part of the State's Freeway & Expressway System.

In 1948, a Freeway Agreement was developed and revised in 1964 between Caltrans and the County of San Luis Obispo for SR 46E within the limits of the Corridor Study. The freeway agreement specifies the following local road connections:

- Buena Vista Road (north side of SR 46E)
- Golden Hill Road (south side and north side)
- Union Road (south side)/Paso Robles Boulevard (north side)
- Airport Road (north side)
- Mill Road (south side)
- Jardine Road (north side)

In September 2008, the Freeway Agreement was revised for the section of State Route 46 between the City of Paso Robles city limit lines to county limit lines of San Luis Obispo & Kern Counties.

The Circulation Element of the City's General Plan (2003) identifies the need to improve local arterial and collector roads. The City will update the Circulation Element of the City's General Plan, incorporating the findings of the Parallel Route Study and the CCS.

Intersection Characteristics and Context

Within the five-mile study segment, the existing SR 46E facility is a four-lane divided expressway, with 12-foot lanes, 10-foot outside shoulders, 5-foot inside shoulders, and a 46-foot unpaved median with no barrier. From Airport Road to Jardine Road (PM 34.6), SR 46E is a two-lane undivided expressway with 12-foot lanes and 8-foot outside shoulders. The current widening project under construction (Airport Road to Whitely Gardens –Union & Whitely 1 Segments) will change this two-lane undivided expressway to a four-lane divided expressway.

Signalized intersections exist along SR 46E at the following locations:

- US 101 southbound ramps (PM 29.7)
- US 101 northbound ramps (PM 29.7)
- Buena Vista Drive (PM 30.5)
- Golden Hill Road (PM 31.3)

Unsignalized intersections with side-street stop controls exist along SR 46E at:

- Union Road (PM 31.8)
- Airport Road (PM 32.1)
- Mill Road (PM 32.6)
- Private winery entrance (PM 33.3)
- Dry Creek Road (PM 34.1)
- Jardine Road (PM 34.6)

Several local roads (Union Road on the south side of SR 46E and Dallons Drive and Dry Creek Road on the north side) comprise a partial system of east-west routes within the city limits.

Projects Proposed & Under Construction

Currently there are numerous ongoing projects along SR 46E as identified in *Table 2.1*.

Table 2.1 Planned Projects on SR 46E

Location	Project Description	Phase	Projected Begin Construction
US 101/SR 46 E Interchange	Construct dual left-turn lanes and other operational improvements	Project Design/ Environmental Review	2012
Golden Hill Road	Construct dual left-turn lanes	Project Design/ Environmental Review	2009
SR 46 E Union Rd. to Geneseo Road	Widen SR 46E to four lanes (Union Segment)	Construction	Under construction
SR 46 E Geneseo Road to Almond Drive	Widen SR 46E to four lanes (Whitley 1 Segment)	Final Project Design/ Construction 2011	2011
SR 46 E Almond Drive to SR 46/SR 41 Junction	Widen SR 46E to four lanes (Whitley 2 Segment)	Final Project Design	> 10 years

The City of Paso Robles has initiated a Project Study Report (PSR) for a signal and eventual interchange at Airport Road. In the process of evaluating this new interchange, the project development team found complications at Airport Road and is considering Union Road area as a possible alternative location for an interchange.

2.2 Transportation Funding

There is a broad recognition of the looming set of challenges related to funding transportation infrastructure and programs throughout the State and the impact of demand on the existing transportation system. The question of, "How will investments be funded?" is not easily answered. Establishing priorities and developing a funding framework are critical to implementing a successful and competitive plan for the corridor.

Available funds are insufficient to address all transportation needs in the region. A variety of funding sources are available for an overall strategy to pay for transportation improvements. Developing an effective funding strategy requires cooperative partnerships at the local, regional and state levels and must ensure equitable fair-share contributions. It should be noted that traditional sources account for less than half of the transportation expenditures in California. Since traditional sources have not kept pace with the demand for funding improvements, local and regional agencies have been raising more funds locally to meet their needs and to have greater control over how and where the funds are spent.

Programming priorities for SR 46E within the urban areas are made at the local and regional levels.

The Regional Transportation Plan (RTP) is the regional transportation-planning document that outlines goals and priorities, identifying needs and revenue resources. Within the RTP, projects are separated into two main categories, financially constrained and financially unconstrained. The financially constrained is a planned list of projects that identifies the project needs of the region and does not exceed the funding revenues projected over the 20-year period. The financially unconstrained list of projects exceeds reasonably anticipated funding revenue. The existing SLOCOG Regional Transportation Plan, *Vision 2025* (April 2005) identifies a shortfall of regional needs totaling $399 million. This situation requires that planned projects be deferred beyond the 20-year horizon of the RTP. The financially unconstrained scenario assumes additional revenue to fund the desired list of projects past 2025. This scenario assumes a local option sales tax and other potential revenue sources. SLOCOG is currently updating the RTP, which is expected for completion in winter 2010.

Expansion and major modifications to the infrastructure have traditionally been funded from the State Transportation Improvement Program (STIP). The California Transportation Commission is the decision-making body that allocates funds from the STIP. A large portion of the STIP (75%) is allocated by formula to the Regional Transportation Planning Agencies (SLOCOG for SLO County), who nominate projects for what is referred to as the Regional Transportation Improvement Program (RTIP) and the remaining 25% is set aside for Caltrans to nominate projects subject to statewide competition. The STIP portion for San Luis Obispo County equates to approximately $6

million per year, countywide. In 2006, SLOCOG and Caltrans were able to secure $67 million of Proposition 1B funds for the SR 46E corridor. Proposition 1B was State Legislation that when approved by California voters in 2006 set aside $19.9 billion for transportation infrastructure improvements. The regional significance of SR 46E allowed for an opportunity to compete favorably statewide for these funding dollars.

It has been increasingly difficult to rely on traditional funding sources to meet transportation needs. As exhibited by many local jurisdictions and regional agencies around the State, more funds are being generated and spent locally on and off the State Highway System. These funds have been used or are planned for various infrastructure and program improvements, such as:

- Capacity and operational improvements to local roads and highways
- Local street improvements, such as pothole repairs and synchronized traffic signals
- Increasing accessibility to public transit
- Building safer walking and bike routes to schools
- Providing increased opportunities for carpool and vanpool programs

Developing an improvement concept and funding plan that includes a commitment of funding from local jurisdictions and agreement between agency partners will allow an opportunity for the local entities to compete favorably in future state funding cycles. In addition to federal & state funding sources, there are a variety of local funding mechanisms that can be used to match state & federal funding sources for transportation improvements, such as development impact fees and local sales tax. Development impact fee programs, such as those set forth through Assembly Bill (AB) 1600 legislation, can be used to fund various transportation and public works projects. For example, within the City of Paso Robles, the City has funded or partially funded projects through local traffic impact fees, such as:

- Niblick Bridge
- Golden Hill Road Signal Improvements
- Buena Vista Road Signal Improvements
- 101/46W Interchange Improvements – Right-of-way acquisition

Regional impact fee programs are a funding mechanism to address congestion regionally and compensate for projected congestion. Generally, regional impact fee programs work on a larger scale and are more intended to address more cumulative impacts than local impact fee programs. For this reason, a distinction should be drawn between addressing near-term vs. long-term and cumulative impacts. These fees are generated based on identifying impacts and developing appropriate mitigation to address near-term and long-term impacts. Recently the Transportation Agency for Monterey County developed a Regional Impact Fee program that identified 17 proposed improvement projects within Monterey County and will raise $350 million through a regional impact fee program by

developing a cost per vehicle trip based on a particular sub-area/zone for cumulative impacts. This program will not address all the traffic concerns of the County, however it does provide critical funding for projects that are of critical need for projected development within the region. Near-term project specific impacts and mitigation measures are developed on a project-by-project basis. The funds raised by this program will contribute significantly on and off the state highway system and are controlled at the local level.

In contrast, the neighboring county south of San Luis Obispo County, Santa Barbara County, implemented a local sales tax in 1989 – Measure D. The measure was a ½ cent transportation sales tax for 20 years that generated over $300 million for local and regional projects and is expected to generate $500 million before it sunsets in 2010. In the recent 2008 election, the voters of Santa Barbara County passed Measure A, which is an extension of the sun setting Measure D. Measure A is anticipated to generate an estimated 1.05 billion for Santa Barbara County transportation & transit related projects/programs. These local option sales tax measures require a 2/3 majority by local or county wide voters.

2.3 Demographics and Land Use

Demographics

The City of Paso Robles, comprising almost 20 square miles, is the fastest growing city in San Luis Obispo County. According to the Paso Robles 2004 General Plan Housing Element Revision, Paso Robles population in 2000 was 24,300 and projected to increase to 30,700 by year 2010; the 2010 projection is based on the assumption that growth will increase at a steady rate of 620 persons per year. This is a 26.3% change between 2000 and 2010; approximately triple the growth of San Luis Obispo County and double the growth of California, refer to *Table 2.2 2000 & 2010 Growth Projection Comparison* below. In comparison the Counties of Kern, Kings, and Fresno have experienced a 26.5% change between 2000 and 2010. Much of the interregional traffic is coming from areas in the Central Valley. As the population centers to the east of the corridor grow, it can be expected that the traffic will increase for interregional users.

Table 2.2 2000 & 2010 Growth Projection Comparison

Paso Robles Area of Influence Population Growth Projection 2000-2010			
Year	**2000**	**2010**	**2000-2010 % Change**
Paso Robles	24,300	30,700	26.3%
San Luis Obispo County	248,332	269,734	8.6%
California	34,105,437	39,135,676	14.7%

2000 U.S. Census data also displays that young adults (ages 25-44) compose 27.7% of the 24,300 populations in Paso Robles. This is the largest demographic age group followed closely by school age (ages 5-19) individuals that compose 27.0% of the population. College age (ages 20-24) make up the smallest percentage of the population at 6.1%. When comparing the Paso Robles age group trends to those of the greater San Luis Obispo County and California, it can be determined that Paso Robles most closely reflects the trends of California. In fact, Paso Robles and California share identical ranking of age groups from lowest to highest: College age (ages 20-24), preschool (ages <5), seniors (ages 65+), older adults (ages 45-64), school age (5-19), and young adults (25-44). Paso Robles and San Luis Obispo County only share ranking order with the seniors (ages 65+) and young adults (ages 25-44).

Data from the 2000 U.S. Census shows Paso Robles, San Luis Obispo County and California share the "Non-Hispanic or Latino-White Alone" group as the majority of the overall population, with "Hispanic or Latino" placing second. These two groups compose approximately 92% of the total population in both Paso Robles and San Luis Obispo County, where in California together they only total 79% of the population. However, the proportionality of race/cultural groups in Paso Robles is more similar to San Luis Obispo County than California.

2000 U.S. Census data also indicates that Paso Robles, San Luis Obispo County, and California identically rank in categories of occupation, but show more proportional variations. They rank from highest to lowest is as follows:

- Management, Professional, and related Occupations
- Service Occupations; Sales and Office Occupations
- Farming, Fishing and Forestry
- Construction, Extraction, and Maintenance
- Production, Transportation, and Material Moving

For California, San Luis Obispo County, and Paso Robles, the occupation categories "Management, Professional, and related Occupations" and "Service Occupations, and Sales and Office Occupations" weigh highest. These two groups comprise 68% - 78% of the occupational total for each group, with Paso Robles having 68%. Paso Robles also maintains a higher percentage of the population in "Production, Transportation and Material Moving" and a lower portion in "Management, Professional and related Occupation" compared to San Luis Obispo County and California.

The 1999 median income according to the 2000 U.S. Census in Paso Robles was $39,217. This is 92% of the median income of San Luis Obispo County and 83% of California's median income.

Land Use & Zoning

Land use immediately adjacent to SR 46E consists of residential, commercial, agricultural, and public park/open space. Public facilities served within the corridor include the Paso Robles Airport, Cuesta College, an elementary school, and a 1000 bed State penitentiary. The corridor can be broken into four main segments; between the US 101/SR 46 East Interchange and Golden Hill Road, the primary zoning is single family residential with a smaller percentage of multi-family residential, public schools, and agricultural. Surrounding the Golden Hill Road Intersection, the primary zoning is commercial/light industrial. At Union Road there is a fairly even split between residential agriculture and commercial zonings. Finally, between Union Road and Jardine Road the zoning is general agriculture and public park/open space (for additional details please refer to *Figure 2.4 Zoning Along or Near SR 46 East Corridor).*

Residential development has been proposed along or near the SR 46E corridor. The following Specific Plans are considered within the 20 year planning horizon of this Study and include those detailed in the City's General Plan (2003), Land Use Element. These residential developments located in the southeastern portion of the City, and south of SR 46E, could change the intensity of use with the SR 46E corridor; employment centers, and/or local destinations would be located on the north side of SR 46E serving the new residents on the south side of SR 46E (*Table 2.3* and *Figure 2.5* summarize the proposed and planned development within the corridor).

Specific Plans

- Chandler Ranch Specific Plan
- Uptown /Town Centre Specific Plan
- Olsen Ranch/Beechwood Specific Plan
- River Oaks, the Next Chapter Specific Plan

Based on foreseeable land use decisions, as identified in *Table 2.3*, a change in intensity of use along the SR 46E transportation network is anticipated. As local private development continues within the corridor, the need to provide local connectivity, through local road improvements and grade separations on the mainline, will become an even higher priority. Individual projects will have both project-specific and cumulative impacts. This Study will strengthen California Environmental Quality Act (CEQA) review for consideration of mitigation measures for cumulative impacts.

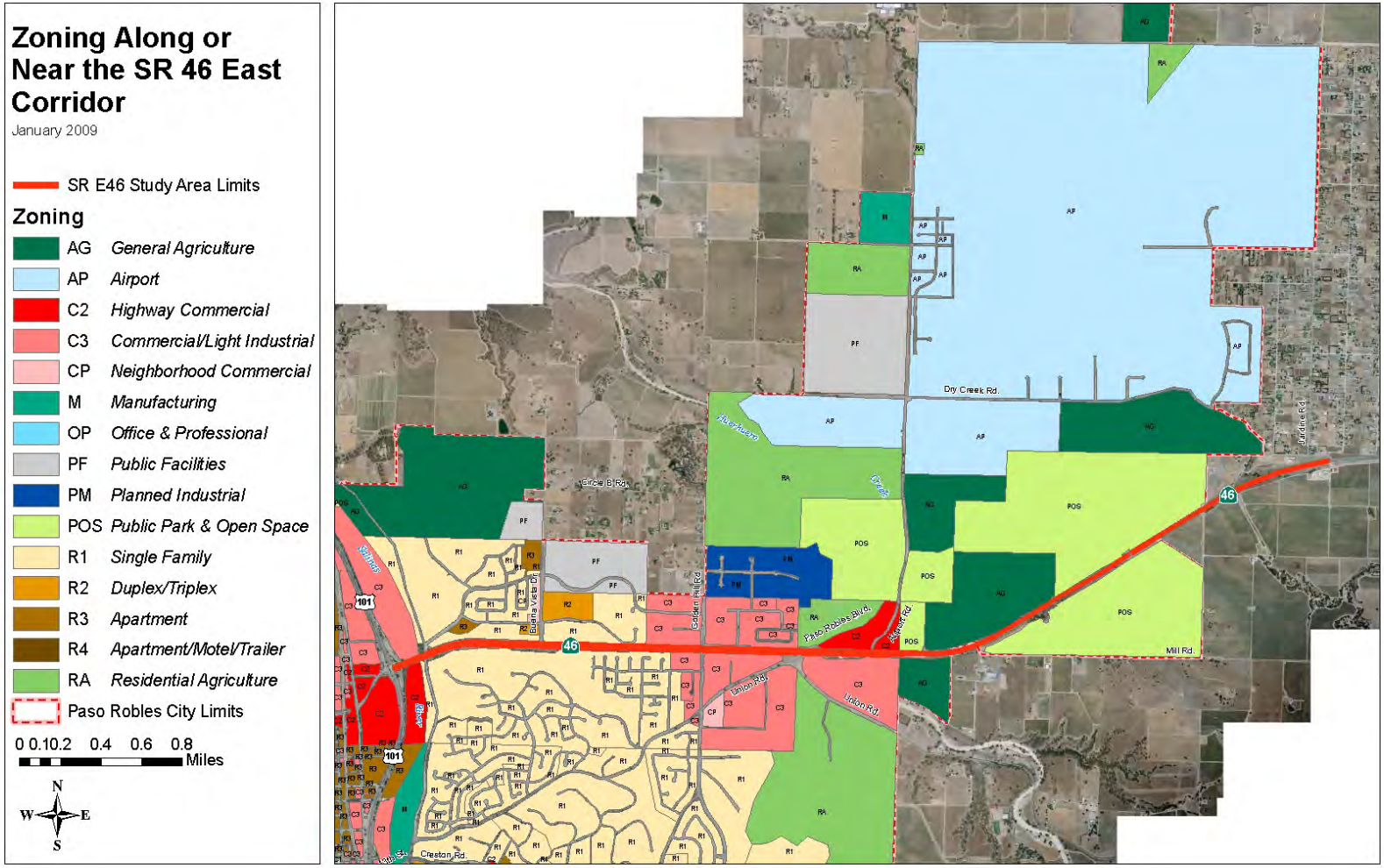

Figure 2.4 Zoning Along or Near the SR 46E Corridor

Table 2.3 Planned Development in the City of Paso Robles

MAP ID #	Development Name/ Property Owner	Proposed Use	Proposed Size	Development/ Planning Stage
1	Little ETAL	Residential	30 Units	Undefined
2	River Oaks, the Next Chapter	Residential	1900+ Units	Undefined
3	Cuesta College	Institutional	2,000 Students	Undefined
4	Estrella Associates	Mixed Use	19,500 ft²	Under Construction
5	Estrella Associates	Retail/Commercial	21,000 ft²	Have Received Zoning Approval
6	Beatrice & Dider Corp	Residential	131,400 ft²	Have Received Zoning Approval
7	Arciero & Sons	Retail/Commercial	5,000 ft²	Have Received Zoning Approval
8	Arciero & Sons	Resort/Hotel	15,700 ft²	Have Received Zoning Approval
9	Windmill Ranch	Residential	8 Units	Undefined
10	Regency	Retail/Commercial	289,000 ft²	Undefined
11	Nanometer	Light Industrial	56,100 ft²	Have Received Zoning Approval
12	Weyrick	Retail/Commercial	72,000 ft²	Undefined
13	Dan Schultze/Eagle Energy	Mixed Use	9,300 ft²	Have Received Zoning Approval
14	TR 2598	Light Industrial	87,500 ft²	Undefined
15	Erskine	Light Industrial	631,620 ft²	Undefined
16	Justin Vineyard & Winery	Winery	33,000 ft²	Have Received Zoning Approval
17	Mundee	RV Park	390 Spaces	Undefined
18	Airport Road Business Park	Manufacturing/Warehouse	4,800 ft²	Applications for Zoning Approval not Complete
19	Airport Road Business Park	Business Park	Undefined	Have Received Zoning Approval
20	Boys School	Prison	1,000 Beds	Undefined
21	Gearhart	Light Industrial	115,500 ft²	Undefined
22	Miller	Manufacturing/Warehouse	121,200 ft²	Applications for Zoning Approval not Complete
23	Airport Lease Sites	Manufacturing/Warehouse	50,000 ft²	Undefined
24	Nunno Corp	Light Industrial	52,500 ft²	Complete
25	Mullin/Santa Cruz Biotechnology	Light Industrial	54,000 ft²	Have Received Zoning Approval
26	Matt Masia/Black Ranch	Resort/Hotel	280 Units	Undefined
27	Handley Destino	Resort/Hotel	291 Units	Undefined
28	Vina Robles	Resort/Hotel	56,900 ft²	Have Received Zoning Approval
29	Firestone	Winery	10,000 ft²	Undefined
30	Butterfield/Ravine Waterpark LLC	Retail/Commercial	3,900+ ft²	Undefined
31	Walker	Recreation	11,000 ft²	Under Construction
32	Chandler Ranch	Residential	1400+ Units	Undefined
33	Roger Sharp	Mixed Use	11,100 ft²	Under Construction
34	Olsen Ranch/Beechwood	Mixed Use	1347-3637 Units	Undefined
35	Uptown/Town Centre	Mixed Use	Undefined	Undefined

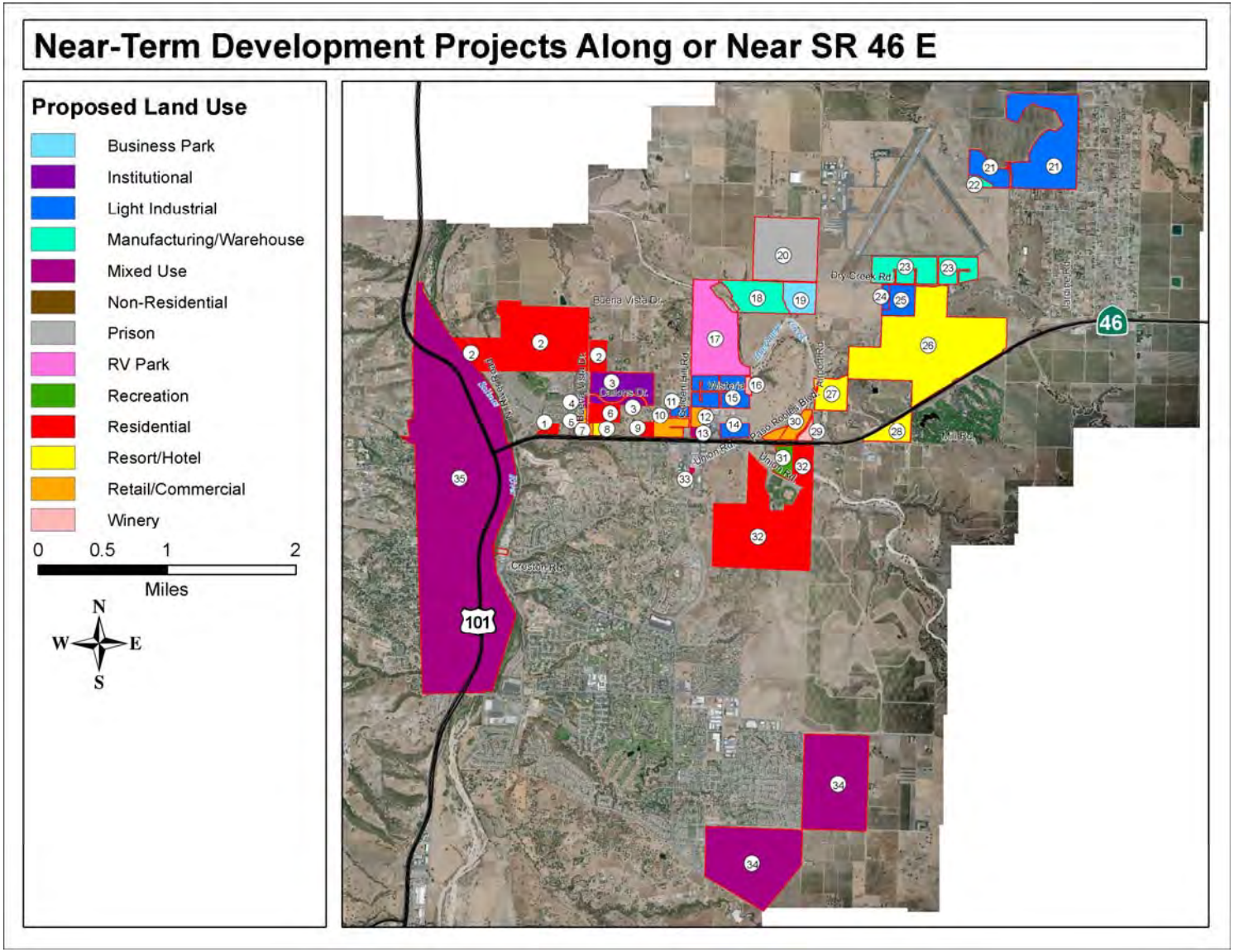

Figure 2.5 Near-term Development Projects Along or Near SR 46E

3.0 PERFORMANCE ASSESSMENT

The partner agencies agree that something must be done in the near-term that does not preclude the long-term vision.

Interregional traffic on SR 46E has increased in tandem with California's population growth, especially along the Central Coast and in the San Joaquin Valley. Regional traffic has grown, as well, with new or expanded regional facilities developed along the corridor: wineries and wine storage facilities, the North County campus of Cuesta College, and an expanded employment base in the Paso Robles Municipal Airport area.

The primary traffic concerns include mainline congestion and delay and impacts to the local road system that occur during peak periods. The four partner agencies and the public have acknowledged that something must be done in the near-term that does not preclude the long-term vision. Development of solutions will require an analysis of the performance of the existing facility, areas of deficiency, and future projects. The programmed projects identified in Section 2.1, such as those intended to widen SR 46E between Airport and the "Wye," are proposed to accommodate the interregional travel demands in this segment of SR 46E, east of Airport Road. However, addressing interregional demand in the 5-mile section within the City of Paso Robles requires coordination between all the agencies and incorporation of their values and goals in this Study.

Traffic Analysis Methodology

The Traffic Study consists of describing year 2005 "existing" traffic conditions and then evaluating 2030 "future year" conditions by reviewing completed traffic studies prepared by consultants for proposed development. The existing length of queue, delay, and diversion within the corridor study area were also analyzed by the Study Team.

In order to enhance the traffic analysis, the traffic study area limits were extended 20 miles east to the junction of State Route 41 and 46. For existing conditions, Caltrans and partner agency staff conducted comprehensive traffic counts in April, June, July, and August of 2005. The Fehr and Peers April 2007 Golden Hill Retail Center Transportation Impact Analysis was used to project future year conditions.

Various traffic studies were analyzed as a part of the CCS, forming the basis of this Existing and Future Travel Demand analysis. These traffic studies analyze existing and future traffic conditions on the five-mile segment of SR 46 East, between the junction with US 101 (PM 29.7) and the intersection with Jardine Road (PM 34.7). These studies include:

- Fehr and Peers Golden Hill Retail Center Transportation Impact Analysis, April 2007
- Caltrans Traffic Operations Review of Existing Traffic Studies, February 2007
- Omni Means Airport Road Traffic Study, June 2006
- City of Paso Robles Commercial/Industrial Status Report, June 2006

For purposes of this traffic study, the Friday June PM peak was used in the evaluation of the baseline condition (existing condition). The Friday peak hour was determined to be between 3:00 p.m. and 4:00 p.m. The Thursday peak hour was determined to be between 4:30 p.m. and 5:30 p.m.

Future Traffic Analysis Methodology

The Study Team agreed to use existing traffic studies to analyze the future conditions. The Fehr and Peers Golden Hill Retail Center Transportation Impact Analysis, April 2007 was used extensively. This study was not available when the Caltrans Traffic Operations branch completed their review of this corridor.

3.1 Existing & Future Travel Demand Characteristics

Primary traffic concerns include mainline congestion and delay, and impacts to the local road system. During the most heavily traveled times (Friday afternoon summertime peak hour, when interregional traffic is at its peak), the intersections at the 101/46E operate poorly and westbound traffic approaching US Route 101 forms a queue nearly two miles long. This congestion results in a pattern of diversion onto the Buena Vista Drive, Golden Hill Road and Union Road intersections. The current Annual Average Daily Traffic (AADT) on SR 46E between Airport Road and US 101 is approximately 25,000, while traffic between Airport Road and Jardine road is 21,000 (see *Table 3.1* below). The Annual ADT is the total traffic volume for the year divided by 365 days. The ADT is useful for estimating the amount of congestion projected to occur.

Table 3.1 Existing & Future Average Daily Traffic on SR 46

SR 46E - AVERAGE DAILY TRAFFIC (ADT)			
	US 101 to Airport Rd.	**Airport Rd. to Jardine Rd.**	**Jardine Rd. to State Route 41**
Yr. 2006	25,000	21,000	12,000
Yr. 2030	51,000	38,000	21,000
% Increase 2006 to 2030	49%	55%	57%

Traffic Operations

Traffic conditions on a non-freeway facility such as SR 46E are typically analyzed by evaluating traffic flow on the mainline and control delay at intersections. In some settings, signalized intersections fail to clear during individual cycles causing queues that control the flow of mainline traffic between intersections.

The Caltrans Traffic Operations branch completed a review and analysis of various traffic data for SR 46E within the Corridor Study Limits. This review covers the segment of SR 46E between US Route 101 (05-SLO-46-PM 29.761) and Jardine Road (05-SLO-46-PM 34.641). Documents reviewed included the Omni-Means June 29, 2006 Airport Road Traffic Study, City of Paso Robles June 2006 Commercial/Industrial Status Report, and the City of Paso Robles City Council/Planning Commission Agenda's and Minutes (for a detailed summary of the traffic analysis, refer to *Appendix D*).

Existing Mainline Traffic Operations

Operations in the SR 46 segment between US 101 and Airport Road are controlled by the signal operation. The Golden Hill Retail Center Transportation Impact Analysis included unconstrained mainline analysis for SR46 and displayed existing operation at LOS C (see *Table D.12* in *Appendix D*). Additionally, it showed that intersections are causing the mainline to function poorly in the PM peak hour.

The segment from Airport Road to the SR 46E/41N junction is a two-lane undivided highway with side street intersections under stop control. This segment is currently operating at peak hour LOS C to LOS E conditions, as shown in *Table D.2*, with all sections of this segment currently operating at or below LOS C/D during the PM peak, Caltrans standard for acceptable operations.

Existing Intersection Traffic Operations

From west to east, the major intersections from US Route 101 to the SR 41 junction include:

- Buena Vista Drive
- Golden Hills Road
- Union Road
- Airport Road
- Jardine Road
- Geneseo Road
- McMillan Road
- SR 46E/41S Junction

As *Table 3.2* displays, the majority of intersections in the study area (intersections with US 101, Golden Hill Road, Union Road, Airport Road and Jardine Road) operate below LOS C in the Friday PM peak periods by 2030. The intersection of SR 46E and US 101 is especially problematic at the southbound on-ramp, which operates at LOS F during the

Friday PM peak period. As mentioned before, the demand for the left-turn movement from SR 46E exceeds capacity, resulting in upstream queuing ("backs up") ultimately affecting operations of the intersections all the way to the intersection with Golden Hill Road and setting up a pattern of diversion back to Airport Road intersection. As can be seen in *Figure 3.1* and *3.2* there are a number of intersections that operate in the PM peak hour below LOS C as the existing condition. For the future Friday PM peak hour, refer to *Figure 3.3*. For the segment between Airport and Jardine Intersections the mainline operates at a Level of Service (LOS) F for the PM peak. The LOS F was based on projected proposed development in the Airport and Jardine areas, future developments and transportation improvements would need to address the mainline LOS. A currently programmed project, Operational Improvements Route 101/46E, (EA 36150) proposes dual westbound left turn lanes at the intersection of SR 46E and Route 101 southbound on-ramp.

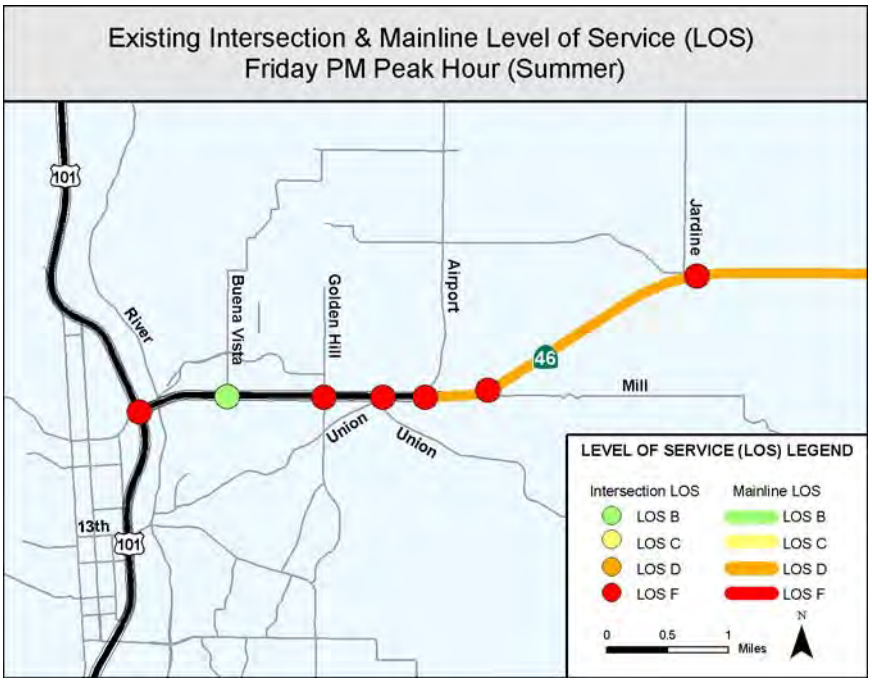

Figure 3.1 Existing Friday PM peak hour LOS

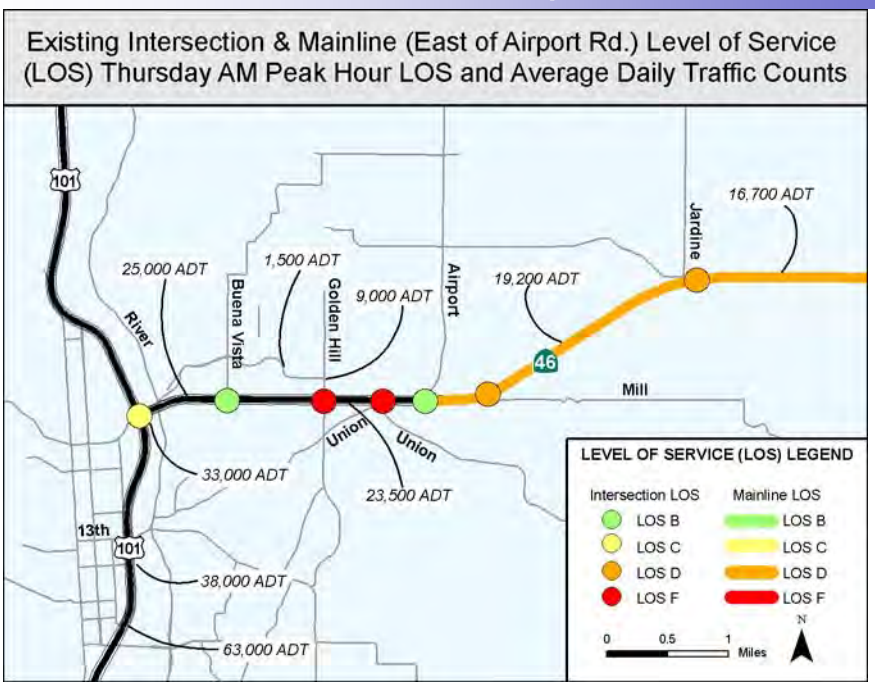

Figure 3.2 Existing Thursday AM Peak Hour LOS

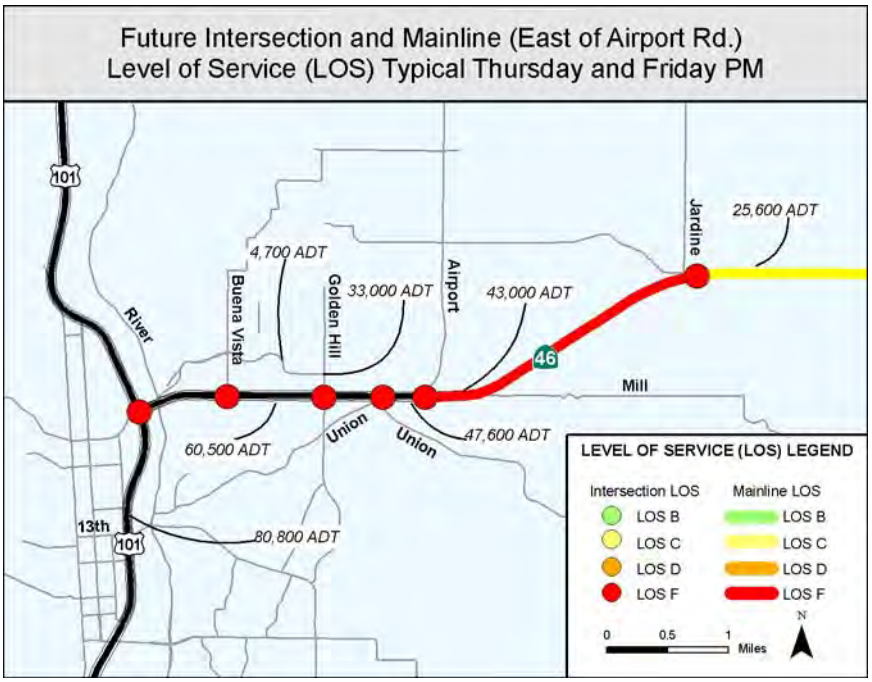

Figure 3.3 Future Thursday & Friday PM peak LOS

Existing Diversion Patterns

A diversion pattern occurs when a vehicle that would otherwise use a primary facility chooses to use a lesser route due to problems on the primary route. Field observations of traffic flow within the corridor displayed traffic diverting to other routes to avoid the queuing at the US Route 101/SR 46E interchange. Observations show Golden Hill Road, the US Route 101/SR 46E interchange, and to a lesser degree Union Road, as diversion points (refer to *Figure D.4* in *Appendix D*).

Table 3.2 Existing & Near-term (2010) Cumulative Roadway- Level of Service

EXISTING AND CUMULATIVE (2010) INTERSECTIONS LEVELS OF SERVICE *						
Roadway Intersection	**Peak Hour**	**Intersection control**	**Exist Delay**	**Exist LOS**	**2010 Delay**	**2010 LOS**
1. SR 46E/US 101 SB Ramps	AM PM Friday PM	Signal	23.4 30.5 119.8	C C F	32.6 97.7 >150	C F F
2. SR 46E/US 101 NB Ramps	AM PM Friday PM	Signal	31.1 31.3 72.7	C C E	>150 >150 >150	F F F
3. SR 46E/Buena Vista Drive	AM PM Friday PM	Signal	18.1 14.6 15.8	B B B	20.5 80.4 130.5	C F F
4. SR 46 E/Golden Hill Road	AM PM Friday PM	Signal	>150 90.3 >150	F F F	>150 >150 >150	F F F
5. SR 46E/Union Road	AM PM Friday PM	Side-Street Stop	71.9 >150 >150	F F F	>150 >150 >150	F F F
6. SR 46E/Airport Road	AM PM Friday PM	Side-Street Stop	14.3 74.8 >150	B F F	>150 >150 >150	F F F

Notes:
** Average daily traffic. Note volume reported is the maximum volume on the given roadway segment within the project study area.*
1 LOS = Level of Service. LOS calculations conducted using the TRAFFIX software for unsignalized (stop-controlled) intersections and the SYNCHRO software for signalized intersections.
2 AM = morning peak hour, PM = afternoon peak hour
3 Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in the 2000 HCM. For side street stop controlled intersections, total control delay for the worst movement is presented.
4 The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersections were Not evaluated for Friday PM conditions.

(It should be noted that the LOS data at Union Road and Golden Hill Road was collected prior to new development adjacent to Golden Hill Road was in operation. Vehicle trips generated by the new service stations were captured in the study produced in by Fehr & Peers and not available at the time of the Caltrans study.)

3.2 Existing Collision Data

Collisions

Collision data was retrieved for a 3-year period between Jan 1, 2005 and Dec 30, 2007. A summary of this data is presented in *Tables 3.3* and *3.4*. At the locations summarized, these areas have a higher than statewide average for collisions.

Collision concentrations have been identified in several locations within the study limits. Most of these collisions are due to traffic congestion, speeding and improper lane changes or turning movements. However, several locations have been identified with higher than statewide average collision concentrations: the US 101 southbound on-ramps and off-ramps; Buena Vista Road; Golden Hill Road; Union Road; Airport Road; Jardine Road; and McMillian Canyon Road. The collision concentrations identified in *Tables 3.3* and *3.4* currently exceed the Statewide average for similar facilities. Southbound US 101 on-ramps and off-ramps, major connectors with heavy congestion, contribute to the overall collision count at this location.

As evidence of the types of collisions (rear-end and sideswipe collisions) for this section of SR 46E, congestion and poor operations at the intersections are the primary cause. The proposed improvements to add dual left turn channelization could reduce collisions related to congestion and operations.

Table 3.3 Collision Data on the Mainline

MAINLINE COLLISIONS								
Segment		**Number of Collisions**	**Actual Collision Rate**			**Statewide Average**		
From	**To**		**Fatalities**	**Fatalities + Injuries**	**Total**	**Fatalities**	**Fatalities + Injuries**	**Total**
US Route 101	Buena Vista	60	.047	0.94	2.81	0.018	0.62	1.35
Buena Vista	Golden Hill	34	0.00	0.27	1.55	0.018	0.62	1.35
Golden Hill	Union	20	0.00	0.38	1.51	0.018	0.62	1.35
Union	Airport	6	0.00	0.33	0.65	0.017	0.59	1.29
Airport	Jardine	13	0.00	0.02	0.25	0.023	0.29	0.62
Jardine	McMillan Canyon	64	0.021	0.10	0.34	0.023	0.28	0.60
McMillan Canyon	SR 41 Jct.	12	0.022	0.09	0.26	0.023	0.28	0.60

Table 3.4 Summary of Intersection Collision Data

Summary of Collision Data from Jan 2005- Dec 2007							
		Actual Collision Rate			Statewide Average		
Intersection	**Number of Collisions**	**Fatalities**	**Fatalities + Injuries**	**Total**	**Fatalities**	**Fatalities + Injuries**	**Total**
Route 101 SB On Ramp	1	0.00	0.00	***0.08***	0.002	0.32	0.80
Route 101 NB Off Ramp	5	0.00	0.23	***0.39***	0.005	0.61	1.50
Route 101 NB On Ramp	1	0.00	0.00	***0.22***	0.003	0.22	0.60
Route 101 SB off Ramp	10	0.00	0.56	***1.88***	0.005	0.61	1.50
Route 46/Rte 101 NB ramps	32	0.00	0.28	***1.00***	0.002	0.19	0.43
Buena Vista	15	0.00	0.04	***0.53***	0.001	0.06	0.14
Golden Hill	34	0.00	0.29	***1.23***	0.002	0.19	0.43
Union	13	0.00	0.11	***0.47***	0.002	0.10	0.22
Airport	9	0.00	0.20	***0.36***	0.001	0.06	0.14
Jardine	11	0.00	0.18	***0.49***	0.004	0.10	0.22
McMillan Canyon	8	0.00	0.33	***0.52***	0.008	0.16	0.33
JCT Rte 46W	2	0.00	0.00	***0.13***	0.004	0.10	0.22

3.3 Deficiency Assessment

Existing traffic studies do not address local circulation improvements, which could affect the level of service at some intersections.

The City of Paso Robles is currently in the process of conducting a Parallel Route Study, which looks at possible local road connections that could relieve congestion and improve connectivity of the local street network, as well as SR 46E through Paso Robles. Study findings will be used in guiding the update of the City's Circulation Element, which is expected to be complete in 2009.

Caltrans evaluated this corridor and concluded that a six-lane expressway on State SR 46E (Between Hwy 101 and Jardine Road) cannot sustain adequate performance within a twenty-year time frame following construction (*Tables D.10* and *D.11* in *Appendix D*). The Caltrans Traffic Operation Department and the City's lead traffic studies conclude the need for a future expanded SR 46E facility. This will include grade-separated access points and a plan to address the failing at-grade signalized intersections.

The demand for this corridor will only continue to increase over time and performance will deteriorate. The recreational opportunities, goods movement needs, local needs and numerous other opportunities in North County will continue to draw travelers to the Central Coast. SR 46E as a main route for travelers from all over California will require that improvement be made to this corridor. Central California is a region rich in agriculture land uses; SR 46 provides a critical path for the nationwide distribution of agricultural goods. The deficiencies are known, and the implementation of corridor preservation would ensure that SR 46 is sustained as a route of significance to this region. Based on the data presented in this section, there are both existing and projected deficiencies within the corridor. Located west to east on the SR 46E corridor, these deficiencies are the identified:

US 101/SR46 East Interchange

This interchange displays inadequate storage capacity for SR 46E westbound travelers making a connection to southbound 101. The existing left-turn lane pocket does not accommodate all the vehicles at this signal. Multiple signal cycles are required to move vehicles through the intersection, primarily due to the limited green-time of each signal cycle and the number of vehicles making this movement. This essentially causes a bottleneck at the interchange, resulting in a chain reaction of delay, and causes a queue that during summertime Friday afternoon peak periods can extend on the westbound lanes through the Buena Vista and Golden Hill Road intersections. This queue ultimately creates deficiency at the Buena Vista and Golden Hill Road intersections.

Buena Vista Drive (Half Signal Intersection)

Inadequate merging and weaving distance between Buena Vista Drive and Golden Hill Road create the existing deficiency at Buena Vista Drive. For travelers making a left-turn movement onto eastbound SR 46, they must first merge into the number one lane (i.e. fast lane) using the existing acceleration lane. For those that wish to make a right-hand turn onto Golden Hill Road, they must quickly switch lanes and enter the number two lane (i.e., slow lane). This deficiency is complicated further during times of heavy congestion and provides less opportunity to switch lanes. In addition, the queue that is created from the SR101/SR 46 Interchange extends through the Buena Vista Drive intersection. This impacts both travelers driving southbound on Buena Vista Drive to SR 46, as well as those using SR 46E to make a connection at the interchange.

Golden Hill Road (Full Signal Intersection)

The existing signal at Golden Hill Road is causing queues to back up on all four legs of the signal. The existing left-turn lanes on all four legs cannot accommodate the number of vehicles making these movements. Multiple signal cycles are required to clear the intersection; the green time is not adequate. This delay at the intersection has created a queue that extends on the local road system south on Golden Hill Road and through the Union Road/Golden Hill Road intersection. There is also a queue on SR 46E for westbound and eastbound users making left-turns onto Golden Hill Road. According to the Golden Hill Retail Center's traffic analysis, by the near-term (2010) the LOS for this

intersections during the weekday PM peak will be F with the proposed improvements (see *Table 3.2*).

Union Road, Airport Road, Mill Road, & Jardine Road (Unsignalized Intersections)

The existing unsignalized intersections have operational and delay issues with gap acceptance. A gap is when a vehicle must find an opening in the traffic to make a traffic movement, such as the vehicle that is entering or exiting SR 46. Collision concentrations indicate drivers' willingness to take risks when delayed. A delay is created for vehicles entering or exiting SR 46, which results in queues developing on the local roads and in the SR 46 left-turn lane. These movements are commonly referred to as "unprotected" movements, which means that the SR 46 through lanes continue through the intersection without stopping. Three movements affected in this instance at each intersection include:

- The traveler wishing to make left-turn onto the local road must wait until there is a gap in the traffic to make the turn
- The traveler in the left-turn lane on the local road that wishes to connect to SR 46
- The traveler in the right-turn lane on the local road that wishes to connect to SR 46

Additionally, for the right-turn movement of travelers entering SR 46, there is less than adequate merging distance for vehicles that need to merge onto SR 46; this situation creates driver confusion. Finally, topography and geometrics at these intersections has impacted sight distance, contributing to deficiencies in turning movements at this location.

Travel Demand Management (TDM) Programs

There are numerous TDM programs within San Luis Obispo County. The Rideshare programs and others have developed over the years with a main focus of getting commuters into the City of San Luis Obispo. Currently, lack of mobility choices exist in this corridor. It will be necessary to both propose new TDM programs and enhance existing programs, such as, transit facilities, ride-sharing program and park and ride lots to reduce the demand on the facility and provide choices for commuters.

4.0 PUBLIC OUTREACH

Good planning exists through an open exchange of information. Through stakeholder engagement, information on state and local plans, programs and projects can be distributed to the public. As users of the transportation system, residents, adjacent business owners, and all users are familiar with their transportation needs. This consideration is important for developing a successful planning study that will meet the needs of the County's diverse communities. The partners are seeking to develop a long-term vision that considers the built environment, natural environment, purpose of the facility, and needs and values of local stakeholders. There is a broad understanding that residents have interest in maintaining quality of life in their community. Actively involving the public in the planning process and development, highlights issues, strategies, and solutions that otherwise might not be considered. The following sections will detail how the Stakeholder Engagement Plan was implemented as well as the results of that outreach effort.

4.1 Public Engagement Findings

Through their participation in the Steering Committee, Study Team, and Technical Advisory Committees (as described above in *Section 1.2*), the partner agencies developed strategies for identifying areas of study, engaging other interested parties (i.e., "stakeholders") in the planning process, and arriving at solutions that were community driven. The partners began this collaborative process by delineating the issues and constraints affecting the corridor (see the "Issues, Goals, and Problem Statement," in *Appendix C*).

Once the stakeholders and constraints were identified, it was necessary to understand the various stakeholder uses of the corridor. "Mobility interests" was a concept used to identify the various stakeholder uses. The following are the mobility interests that were developed:

- Connections across SR 46E
- Connections to and from SR 46E
- Travel on SR 46E
- Travel on the local road network

For each of these mobility interests, the Study Team identified possible concepts for improvements. The complexity of the overall task of identifying improvements for a long-range vision of the corridor led the Study Team to divide the task into manageable subcategories: mainline improvements; intersection improvements; ITS improvements; and TDM improvements. This process allowed the Study Team and the public to look at the corridor from both a corridor-wide and a location-specific perspective. Priority locations were established for planned improvements that would address specific mobility interest.

For the purposes of the Comprehensive Corridor Study, the intersections along 46E discussed in this Study were those at Buena Vista Road, Golden Hill Road, Union Road, Airport Road, Mill Road, and Jardine Road. To develop improvements for connections to, from, and across SR 46E, it was first necessary to identify the constraints within the corridor and develop priorities (*Table 4.1* identifies the mobility interests and the improvement options that were considered).

Table 4.1 Summary of Improvement Options/Mobility Interests

Improvement Option	Travel on SR 46E (Mainline)	Connections across SR 46E	Connections to/from SR 46E	Local Road Network
Undercrossing	N/A*	Applicable**	N/A	Applicable
Overcrossing	N/A	Applicable	N/A	Applicable
Interchange	Applicable	Applicable	Applicable	Applicable
Signalized Intersection	Applicable	Applicable	Applicable	Applicable
Roundabout	Applicable	Applicable	Applicable	Applicable
Merge Lanes	Applicable	N/A	N/A	Applicable
4 through lanes	Applicable	N/A	N/A	Applicable
6 through lanes	Applicable	N/A	N/A	Applicable
Local Road Connections	N/A	N/A	N/A	Applicable

**N/A = does not satisfy the mobility interest.*
***Applicable = satisfies the mobility interest, is subject to final traffic analysis*

4.2 Public Workshops

Public input in the Comprehensive Corridor Study process helped identify key issues affecting land use, economic development, historic preservation, and tourism in the SR 46E corridor. The fundamental component of this public outreach process was to identify the values of the community and meet throughout the planning process.

Two public workshops were held in the City of Paso Robles to engage the public in the development of the Comprehensive Corridor Study:

- March 5, 2008 at the City of Paso Robles Library Conference Center
- May 29, 2008 at the Park Ballroom, Paso Robles

A third public workshop is scheduled for March 11, 2009.

The goal of the March 5, 2008 workshop was to introduce the public to the Comprehensive Corridor Study process, and the desired Study objectives to solicit community-based ideas about the SR 46E corridor. The public was asked to participate in both a large-group and a small-group format to discuss how they used SR 46E and the

local transportation network. The March 5 meeting identified the following community-based interests: improving safety; protecting businesses; providing local road connectivity; improving the level of service/traffic flow; incorporating aesthetics/a gateway; and maintaining the character of Paso Robles (for a detailed look at each of the public meetings, see *Appendix B*).

The May 29 workshop identified the following community priorities:

- *Local road connectivity*
- *Protection of existing businesses*
- *Maintaining rural character of the community*

The goal of the May 29, 2008 workshop was to take the results of the March 5 workshop one step further towards innovative solutions in the corridor. The format of this workshop was an open house that summarized the outcomes of the previous workshop with an interactive scenario component that asked the public to participate in "designing" a 20-year plan for the corridor. During this breakout session, small groups gathered around large aerial maps and were asked to choose from various possible improvement options for the corridor, keeping their mobility interests in mind. The participants were also requested to design with the various corridor constraints in mind: such as (but not limited to) design standard constraints, funding constraints, and business impacts. The outcome of the May 29 meeting was a strong interest in seeing additional local road connectivity, maintaining existing businesses/protecting right-of-way, and preserving character of the surrounding community. Following the public workshop these improvement concepts were used to identify a community acceptability criterion for further analysis.

The local road network was studied for its potential to provide an alternate route and/or improve local road circulation to and from the City of Paso Robles without requiring local residents to use SR 46E. Increased use of an improved local road network would not only lessen demand on the highway corridor but also provide relief to the existing highway intersections within the study area. The local road connections identified in the May 29, 2008 workshop are summarized in *Table 4.2* and shown in *Figure 4.1*, the road connections are those identified by participants in the May workshop and do not reflect the local road connections currently under review in the Parallel Route Study being completed by the City of Paso Robles.

Table 4.2 Local Road Connections Identified in Public Workshop

DESIRED LOCAL ROAD CONNECTIONS
• Golden Hill Road to Dry Creek Road via bridge connection
• Buena Vista Drive to Golden Hill Road extension
• Paso Robles Boulevard to Airport Road via bridge connection
• Wisteria Lane to Airport Road via bridge connection
• Union Road extension to Dry Creek Road via bridge connection
• Buena Vista Drive to North River Road
• Mill Road to Union Road
• Dallons Drive to Wisteria Lane
• Dry Creek Road to Mill Road
• Union Road extension to realigned Airport Road

Potential improvements to the mainline (SR 46E) were discussed and analyzed separately from the intersections, focusing on operational and capacity improvement options such as merge lanes, additional through lanes, and acceleration/deceleration lanes. The improvement options that were initially considered are listed in *Table 4.1*.

The March 11, 2009 final public workshop will have an Open House format and will present the results of the previous two workshops and other planning efforts, as summarized in the Draft Comprehensive Corridor Study. This document is intended to be a 20-year planning document outlining a long-term collaborative effort between the partner agencies with input from the public. The Study Team's ultimate goal is to create a strong sense of ownership for the plan within the entire community. Participants at the workshop will be able to see how their input has been incorporated into the planning process, and they will also be asked to provide comment on this draft report. Finally, the workshop will outline the "Next Steps" of this collaborative process.

The 20-year Comprehensive Corridor Study documents extensive public outreach and collaboration between the partner agencies. The Study Team's ultimate goal is to produce a plan with wide community acceptance and ownership.

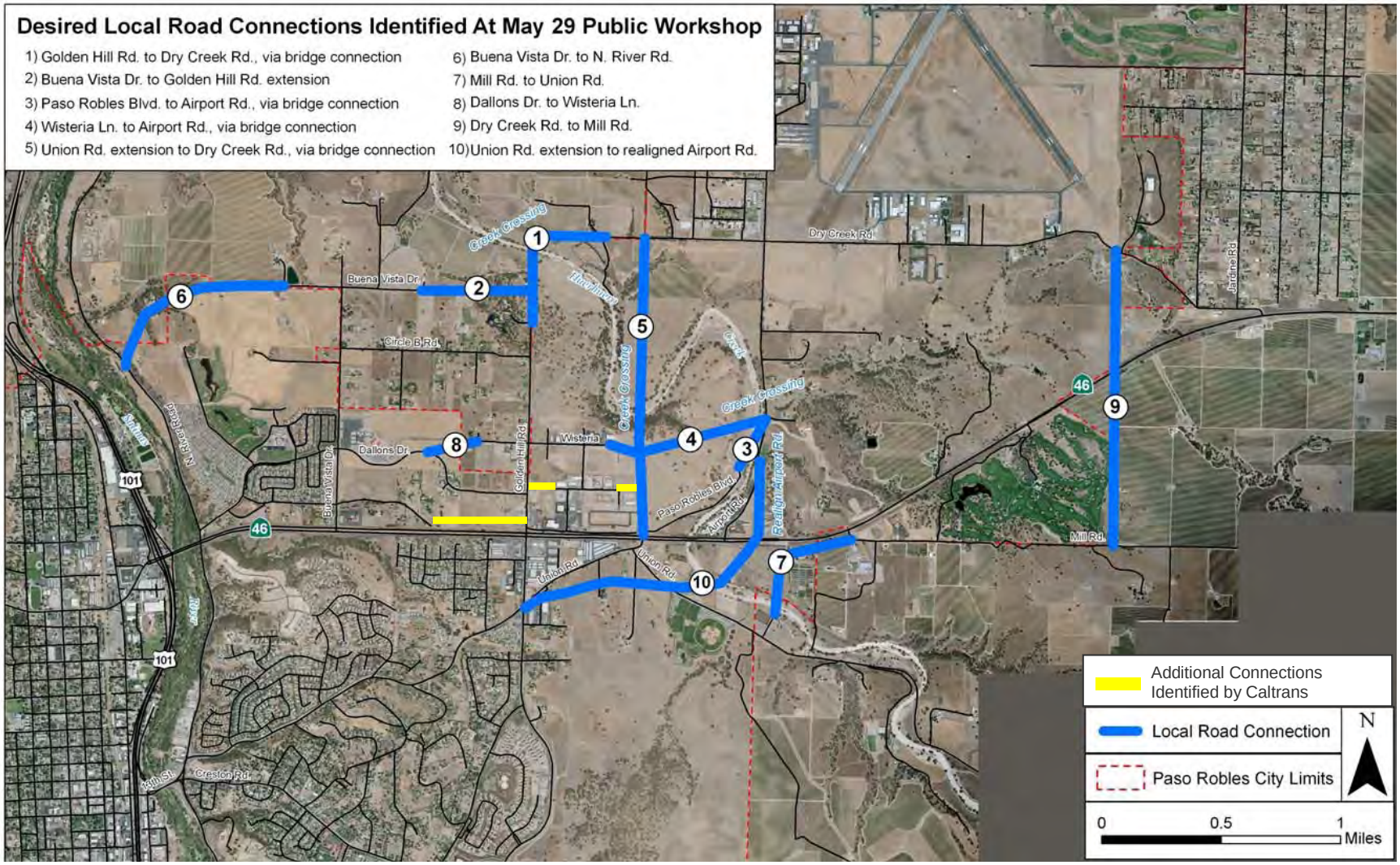

Figure 4.1 Local Road Connections Identified in Public Workshop

5.0 CORRIDOR MANAGEMENT STRATEGY

The following discussion presents the most current collaborative planning effort results of the Comprehensive Corridor Study Partners, Steering Committee, Study Team, Technical Advisory Committees, and Stakeholders, including the Public.

5.1 Corridor Deficiencies

Multiple stakeholder values were identified, prioritized and incorporated into the decision making process for this Study. Existing operational deficiencies within the corridor were similarly identified in *Section 3.0*. Specific locations were then prioritized for improvement strategies and a plan was developed to achieve the long-range planning goals for SR 46E. This methodology can be broken down into four main steps.

- Step 1: Identify Deficiencies
- Step 2: Develop Evaluation Criteria
- Step 3: Identify Priority Locations for Improvement
- Step 4: Develop an Implementation Plan (refer to *Section 6.0*)

Step 1: Identify Deficiencies

Three major transportation systems comprise the total transportation network within the corridor: the local road network; the state highway network; and travel demand management programs. Each of these systems represents an opportunity to improve the corridor through comprehensive identification of their respective deficiencies (*Section 3.0, Performance Assessments*, outlines the deficiencies identified within the corridor).

Step 2: Develop Evaluation Criteria

Evaluation criteria were developed to objectively establish priorities for selecting the improvement locations. These criteria focused on ways to reduce points of conflict, relieve congestion, and improve local circulation. They also looked at ways to protect adjacent local businesses, provide short-term improvement options that would not preclude future plans, and offer cost effective solutions and long-term utility. For example, improvements to the local road network and Union Road will provide solutions in the short term that also support the long-term sustainability of the corridor.

Evaluation Criteria

- *Reducing Points of Conflict/ Maintenance Worker Exposure*
- *Congestion Relief (SR 46E)*
- *Protecting Adjacent Businesses*
- *Local Circulation and Connectivity*
- *Phaseability*
- *Cost*
- *Stakeholder Acceptance*
- *Long-term Performance*

Step 3: Identify Priority Locations for Improvement
Specific locations within the corridor have a high priority based on their ability to improve mobility in the corridor. As discussed in *Section 5.2*, the highest priorities for future improvement included the local road network and intersection improvements at Union Road.

Step 4: Develop an Implementation Plan
As the next step in developing a reasonable range of improvement alternatives for study, including detailed traffic analyses and environmental review, the Comprehensive Corridor Study partners would need to initiate the formal project development process. A funding plan to implement the design and construction of the project would also need to be in place. The funding and study of specific projects are essential components of the implementation of any SR 46E corridor improvement plan (for a detailed discussion on the implementation plan see *Section 6.0*).

5.2 Recommendations

5.2.1 Local Road Extensions & Connections

Improving local road circulation throughout the study area not only enhances local connectivity, but it also relieves pressure off the SR 46E mainline, which can reduce congestion along this stretch of the highway. The ability for local residents to travel to local destinations without having to traverse the State Highway will ultimately create a more sustainable transportation network throughout this corridor.

Improved local circulation, which avoids travel on SR 46E, will create a more sustainable interregional transportation network throughout this corridor.

City of Paso Robles Road Connections
The following desired local road connections are located completely within the City of Paso Robles jurisdictional limits:

- Golden Hill Road extension to Dry Creek Road, via a Huerhuero Creek bridge
- Wisteria Lane extension to Airport Road
- Union Road to Airport Road, via a Huerhuero Creek bridge

Comprehensive Corridor Study Recommendation: Local road improvements are a high priority within the corridor. Update the City of Paso Robles' General Plan Traffic Circulation Element to reflect the above road connections as outlined in the City's Parallel Route Study. In addition, initiate study in the City and County to examine all possible alternative routes, as identified in *Figure 4.1*.

Road Connections outside the City of Paso Robles

During the public workshops the public identified numerous local road connections as possible opportunities to improve local road circulation. Currently the local road connections identified in the City of Paso Robles Parallel Route Study are those referenced above. For those additional connections within and outside the limits of City should be explored, however, for purposes of this Study the connections that have been considered are those discussed in the Parallel Route Study.

5.2.2 State System Priorities

With regard to connections and crossings, state priorities are to maintain east/west movement along SR 46E and to facilitate north/south movement on US 101, in addition to accommodating traffic that crosses and connects to SR 46E. The following section will describe the priorities for each of the intersections along SR 46E, arranged by the major intersections within the corridor, which include:

- US 101/ SR 46E Interchange
- State Route 46 Mainline
- Buena Vista Drive
- Golden Hill Road
- Union Road
- Airport Road
- Mill Road
- Jardine Road

US 101/SR 46E Interchange

The interchange configuration at SR101/SR46E currently does not have enough queuing capacity for vehicles traveling westbound on SR 46 and vehicles making left-turn connections to southbound US 101. An already programmed project will construct dual left-turn lanes on SR 46E for the southbound US 101 ramps and will provide additional capacity at this location.

Comprehensive Corridor Study Recommendation:

Since a separate project is currently in place to address the deficiencies at this location, it is a ***low priority*** under the Study. As growth occurs, the operational integrity of the US 101/SR 46E interchange and the segment of US 101 from 46E to 46W will be an important component in accommodating east bound traffic on SR 46E. Future funding to extend the dual left-turn lanes farther east along SR 46 and to construct other ramp improvements should also be considered.

State Route 46 Mainline

In general, the types of SR 46E mainline improvements that would be considered would include additional through lanes, auxiliary lanes, intersection improvements, etc. Due to the existing limitations associated with adjacent land use, the challenge has been to propose transportation improvements that integrate with land uses, while also focusing on specific locations in the corridor.

Comprehensive Corridor Study Recommendation:
The State Route 46 mainline remains ***low priority*** for improvement consideration until operational improvements on US 101 between SR 46W and SR 46E have been addressed. At such a time, project recommendations will not preclude future widening of SR 46 or limit the improvements to the US 101/SR 46E Interchange.

Buena Vista Drive
Buena Vista Drive is approximately 0.75 mile from the SR101/SR 46E Interchange. Due to the proximity of this intersection to the interchange, any improvements to the interchange will impact the access at Buena Vista Drive. Should operations and safety deteriorate due to increased congestion at the intersection, Buena Vista Drive would require that access be limited.

Comprehensive Corridor Study Recommendation: Buena Vista Drive is a ***low priority***. Leave Buena Vista Drive as a signalized intersection until such time as major improvements are made to the US 101/SR 46E Interchange.

Golden Hill Road
Development adjacent to the intersection (the Golden Hill Retail Center) has secured funding to improve the intersection by providing dual left-turn lanes on all four legs and updating the signal phasing. Should operations and safety deteriorate due to increased congestion at the intersection, Golden Hill Road would require that access be limited.

Comprehensive Corridor Study Recommendation: Golden Hill Road remains a ***low-priority*** for location improvement since some intersection improvements are already funded for construction. It should be noted that as improvements are made to Union Road, there are situations where access may require modification at Golden Hill Road.

Union Road
There were three main reasons why Union Road was chosen as a high priority location for mobility improvements:

1) Gap acceptance deficiencies and higher than average collision rates
2) Union Road has no existing business/residential development adjacent to the highway
3) Union Road is centrally located to services within the corridor (such as residential neighborhoods, the airport business complex, and businesses west of Union Road).

Improvements made at Union Road, coupled with an improved local road network, could divert traffic to Union Road and away from adjacent intersections, which could extend the useful life of adjacent intersections. A variety of traffic improvements can be implemented at this location to address the deficiencies identified.

Comprehensive Corridor Study Recommendation: Union Road is a ***high priority*** location for improvement. A Project Study Report (PSR) should be initiated to analyze all alternatives that would address the deficiencies and commitment to a financial strategy. Right-of-way should be dedicated for a grade-separated structure at the Union Road area.

Airport Road, Mill Road and Jardine Road

Similar to the deficiencies identified at Union Road, the existing unsignalized intersections at Airport Road, Jardine Road, and Mill Road have operational and delay issues with gap acceptance. Three turning movements are affected at the intersections:

- Vehicles turning left from SR 46E onto the local road
- Vehicles in the left-turn lane on the local road connecting to SR 46E
- Vehicles in the right-turn lane on the local road connecting to SR 46E

Additionally, at Airport Road, vehicles making right-turn and left-turn movements to enter SR 46E have less than adequate merging distance, creating driver confusion. Finally, topography and geometrics at these intersections have resulted in limited site distance, contributing to the deficiencies of the turning movements at these locations.

Comprehensive Corridor Study Recommendation: Airport Road, Mill Road and Jardine Road are a ***low priority*** for long-term improvement since the proposed projects to widen SR 46 to the east would address these intersections. Should zoning land uses or intensities change at or near intersections, future long-range planning documentation would need to consider this. During the community outreach process and throughout the Study process, a goal was to limit the impacts to adjacent business and to maintain the values identified by the local community.

Range of Improvements to Consider in the Project Development Process

A variety of traffic improvements can be implemented in the corridor to address the deficiencies identified above at each of the intersections. The following is a summary of some (though not all) possible solutions available for consideration when initiating the Project Development Process:

- Local Road Extensions & Connections: An effective local road system that serves as an alternative transportation network to the SR 46E highway system would reduce overall demand on the highway and local road system. Congestion-related collisions would potentially be reduced as the demand on SR 46E decreases in the corridor.
- Dual left-turn lane pockets: This type of improvement would provide additional capacity for vehicles making left-turning movements at signalized intersections. This would allow drivers to wait in dedicated turn-lanes rather than stopping in a through lane prior to turning left. Providing dual turn lanes provides a second movement, and moves vehicles more efficiently through the signal cycle's "green-time." This option also has the potential to reduce congestion-related, rear-end collisions.

- Dedicated right-turn only lanes: This type of improvement allows turning movements to occur outside the through lanes.
- Grade-separated structures:
  Under/overcrossings: These types of improvements would reduce the number of points of conflict by separating local road traffic from SR 46E traffic. These options do not provide direct access to the highway system.
  Interchanges: would provide a separation of local road traffic from highway traffic, while providing access to the highway system. Providing on-ramps/off-ramps will reduce driver confusion caused by merging vehicles, by improving egress and ingress.
- Modify Access at Intersections: Modifying access at intersections (such as right-in/right-out only) would potentially result in fewer collisions due to driver confusion, by reducing the number of points of conflict. However, maintaining access to existing businesses could be affected and will need to be addressed with any intersection modification proposal.
- Acceleration/Deceleration lanes: This type of improvement would potentially equalize speed differentials for vehicles that need to merge or weave on the highway system.

The improvements identified above are only some of the possibilities for future study. These improvements, in combination with local road improvements, have the potential to correct many of the operational and safety-related deficiencies that have been identified in the corridor's transportation network. Programs such as Transportation Demand Management strategies would also need to be considered to further improve the corridor and to sustain the infrastructure improvements past the 20-year planning horizon of this Study (refer to *Section 5.2.3* for a discussion on recommended TDM strategies for the corridor).

As mentioned in other sections of this document, the purpose of this Study is to provide a 20-year planning tool – vetted at both the local and regional planning level – that identifies a group of priorities within the corridor and develops a corridor right-of-way dedication plan. This Study is a "first step"; the next steps will include:

- Right-of-way preservation at the Union Road area and integration into local land use planning documents
- Develop a funding strategy for the long-term vision
- Develop a funding strategy for construction of individual improvements, then initiate the Caltran's project development process and prepare a Project Study Report
- Local road extensions at the Golden Hill Road extension to Dry Creek Road, Wisteria Lane extension to Airport Road, and Union Road extension to Airport Road
- Enhance and integrate new travel demand strategies in transit, commuter programs, bike and pedestrian facilities, and park & ride lots

Providing connectivity for the community, reducing congestion, and improving safety will improve the state and local transportation network. Relocation and consolidation of access points along SR 46E with an interchange system will reduce the points of conflict and minimize congestion-related delay for both local and regional users of the network.

5.2.3 Traffic Demand Management (TDM) Strategies

It will be necessary to both propose new TDM programs and enhance existing programs, such as transit facilities, ridesharing programs, and park and ride lots, to reduce demand on SR 46E. New TDM elements such as bike/pedestrian facilities and employer-based programs would need to be developed along with identified funding sources. All proposed improvements would include TDM components, such as (but not limited to) the following:

- Enhanced bus service, through the purchase of additional buses, to provide both expanded and new service
- Development of flexible work programs
- Expansion and development of rideshare programs
- Expansion of existing park and ride lots and construction of new facilities, with transit systems incorporated
- Development of bike/pedestrian facilities that integrate with employer-based programs, transit facilities, and park and ride facilities

<u>Transit</u>
There are a variety of options when considering new and expanded transit service in the corridor. The goal is to develop service that is convenient, easy to use and timely for the commuter.

Comprehensive Corridor Study Recommendation: Expanded and/or new transit service within the corridor should be considered for the following locations:

- Cuesta College – North County Campus
- Airport Road Business Park
- Chandler Ranch Area Specific Plan
- Jardine Road
- Shandon

Additional locations should be developed in close coordination with the Regional Transportation Agency, the City of Paso Robles transit authority, and the Study partners to identify those locations that would best reduce single-occupant-vehicle demand on the SR 46E corridor.

Comprehensive Corridor Study Recommendation: Update the Paso Robles Short-range Transit Plan to reflect expanded or new transit service.

Commuter Programs

It is recommended that employers served by the corridor participate in a Transportation Demand Management Program. Currently, there is one such program in San Luis Obispo County that integrates all commute modes. The Transportation Choices Program is managed by the San Luis Obispo Regional Rideshare (SLO Rideshare) and is directed by a Steering Committee that includes the Air Pollution Control District, Regional Transit Authority, Ride-On Transportation and the SLO Bike Coalition.

- Trip Reduction Plan & Employee Commuter Survey**:** As a part of Transportation Choices Program, Rideshare works with the employer to administer a company wide survey of employee commute behaviors and interests. Based upon this survey, Rideshare and the employer develop a Trip Reduction Plan. This plan identifies how the employer can reduce employee related commute trips and makes measurable recommendations.

  Recommendation*:* Encourage employers surrounding the coordinator to adopt a Trip Reduction Plan and execute a Commuter Survey.

- Carpool: Carpool is an effective and inexpensive way to reduce vehicle trips. The SLO Rideshare has a free online carpool matching system that allows commuters traveling on the same corridor at the same time to share the ride. As of February 2009, the system has 2800 users.

  Recommendation: Invest in the further development and marketing of Rideshare's online carpool system.

- Vanpool: Currently there are three active vanpool operators in the County (VPSI, Enterprise Vanpool and Ride-On Transportation). The three operators are also partners of Rideshare's Transportation Choices Program. Rideshare and the vanpool operators assist employers and commuters with interoffice and countywide vanpool matching.

  Recommendation: Provide grant funds to help subsidize new vanpools and vanpool users during their first year.

- Guaranteed Ride Home (GRH): This program allows users of Rideshare's TripLink system to receive four free rides per year during emergencies.

  Recommendation: Provide GRH funding to accommodate increased program participation.

- Mid-day Shuttles: Currently the Lunchtime Express Shuttle operates in the City of San Luis Obispo, allowing two or more individuals to receive free rides to sponsoring restaurants. This program is managed by Ride-On Transportation and is funded by the participating restaurants.

Recommendation: Initiate a similar program for the City of Paso Robles and North County.

- Incentive Program & Employer Trip Reduction Tracking: Lucky Bucks, Rideshare's online incentive program, is used to reward participants for not driving alone to work. The program is administered by Rideshare and funded by participating employers. Once users sign up for TripLink online, they can record the days they ride the bus, vanpool, carpool, ride a bike, or walk to work in a personal online commute calendar. Each day they do not drive alone earns them "Lucky Bucks" that can be redeemed for movie tickets, gift certificates to local businesses and donations to local charities. The employer to determine the organizations monthly reduction in trips, vehicle miles, and emissions can then use the data from the commute calendars.

  Comprehensive Corridor Study Recommendation: Encourage participation in the "Lucky Bucks" program by businesses in North County for commuters who live and work in this area.

Bike and Pedestrian Facilities

During the public workshops, bike and pedestrian facilities were identified as a desired outcome of the Study. In 2001, the City of Paso Robles developed a Bicycle Master Plan that would need to be reviewed and amended to incorporate bicycle facilities for the City within the corridor.

Comprehensive Corridor Study Recommendation: Complete an update to the City's Bicycle Master Plan, which would include new/enhanced bike facilities at all new and expanded park and ride lots. There are numerous large and small employers in the corridor, by implementing a program that would encourage new bike facilities for workers and customers; it would provide another mobility choice. Currently, the City of Paso Robles does not have a bicycle parking policy tied to the Circulation Element or a City ordinance. To establish a bike parking requirement per car parking spaces would be a recommendation of this Study, which would integrate other modes of transportation for new development. Finally, study the addition of new bicycle connections for across the highway. During the community workshops there was interest in providing a bike/pedestrian crossing at the following locations:

- Between Golden Hill Road and Buena Vista Road and
- At or near Union Road to serve the park facilities on the South side of highway.

Park and Ride Lots

In addition to the Traffic Demand Management strategies identified above, park and ride lots can be used to encourage commuters to participate in vanpools/carpools. Currently there are three park and ride lots in and around the Paso Robles area: Paso Robles Multi-modal Station (40 car spaces), Wal-Mart (28 car spaces), and Las Tablas in Templeton (42 car spaces). There are currently plans to increase the Las Tablas park and ride lot by an additional 26 spaces.

Comprehensive Corridor Study Recommendation: New and expanded park and ride facilities should be considered at the following locations:

- Cuesta College – North County Campus
- Airport Road Business Park
- Chandler Ranch Area Specific Plan
- Jardine Road
- Shandon
- Mid-State Fair Parking Lot

Additional locations should be pursued that would best reduce single-occupant-vehicle demand on the SR 46E corridor. It may be determined that park and ride locations outside the corridor would also serve commuters who work in the corridor, rather than the residents who commute to work through and outside the corridor.

5.2.4 Intelligent Transportation System (ITS) Strategies

Intelligent Transportation Systems (ITS) are a broad range of diverse technologies which, when applied to our current transportation system, can help improve safety, reduce congestion, enhance mobility, minimize environmental impacts, save energy, and promote economic productivity. ITS technologies are varied and include information processing, communications, control, and electronics. Examples of ITS technologies include Changeable Message Signs and Close-circuit Television.

Planned *future* ITS applications expected in the Corridor include:

<u>Interactive Traveler Information, 511 telephones, web-based traveler information service</u>
Allow travelers to obtain more targeted information that will assist them in travel decisions. Applications include interactive kiosks at selected sites and ultimately the Internet. Travelers will have direct access to route information and real time information on traffic and transit conditions, enabling better decisions.

<u>Smart Call Boxes</u>
Smart call boxes are integrated into existing call boxes and modified/enhanced to provide data/information of roadway or meteorological conditions. This feature allows for improved incident identification (location, type, severity, etc.) and a reduction in emergency service response times. It also provides information to the traveling public by linking roadway conditions with the regional Transportation Management Centers which can then disseminate the information to the traveling public.

<u>Changeable Message Signs</u>
Changeable Message Signs (CMS) allow travelers to obtain targeted information that will assist them in travel decisions. CMS will alert travelers to potential road closures, collision data, potential delay, etc., at key travel points.

Road Weather Information System (RWIS)

An environmental detection system would utilize planned "smart" call boxes in conjunction with a roadway weather information system to remotely sense environmental conditions, weather hazards, or low visibility conditions (e.g., high winds, fog, blowing dust, wet pavement, etc.).

Smart call box sites can host different types of RWIS sensors for these environmental conditions and send alerts to the CHP's computer aid dispatch (CAD) system and transmitted remotely via CMS. An environmental detection system can provide high wind and fog detection, as well as monitor air quality along streets and highways where visibility and high levels of pollutant emissions are known to occur. RWIS can improve safety by providing traveler information in a timely manner.

5.2.5 Right – of –Way Preservation Plan

Right-of-way preservation is a broad strategy for the long-term planning and management of important roadways. "Right-of-way preservation" refers to techniques that state and local governments use to protect existing transportation corridors or planned corridors from inconsistent development.

A corridor preservation plan, collaboratively developed, will produce compatible transportation and land use systems.

This Comprehensive Corridor Study details a Right-of-way preservation plan that will ultimately accommodate a long-term vision for the corridor by officially designating, mapping, and dedicating right-of-way in areas of future infrastructure development along SR 46E. This long-term highway access plan will allow the partnership agencies to collectively plan for compatible transportation and land use systems. Several strategies may be utilized for transportation right-of-way preservation:

1) Land use – City and/or County

City Council and/or Board of Supervisor measures that have been employed in preserving corridors include access control programs, mapping, exaction from developers, and specific preservation ordinances.

- Access management: Access management techniques may be applied to existing corridors. Techniques include minimum spacing between driveways, use of frontage roads, and decreasing the number of driveways.
- Setbacks: Setbacks prohibit construction of buildings within a certain distance of a landowner's property line.
- Exaction: An exaction is a contribution by a developer to the government in return for subdivision approval, a special or conditional use permit, amendment to a zoning map, or other permit necessary to a developer.

2) Acquisition of real property rights

- Early/Strategic Acquisition/Purchase: Outright (direct fee) purchase is the most commonly used form of right-of-way acquisition. The municipal government acquires full title to the land and all rights associated with it. Full control of the property is granted and future protection is assured. The outright purchase of land is perhaps the simplest means of corridor preservation. Purchased lands can be leased back to former owners until they are needed for project construction. A drawback of this technique is that it requires an outlay of limited funds to preserve land for a future project instead of for a more immediate need.
- Easements: An easement can be purchased to preserve right-of-way without taking actual ownership of the property. Development would be restricted within the easement. This is typically done when a right-of-way is being purchased by a private entity and the easement price can be negotiated lower than the purchase price. The advantages of easements are that the property remains on the tax rolls, the cost is considerably less, and the easements can simply be allowed to expire if the corridor is not needed in the future. A disadvantage is that easements are not necessarily permanent and may expire prematurely.
- Land Banking: Property can be purchased or acquired through land swaps or other means and held for future use.
- Option to Purchase: A voluntary contract between a property owner and a buyer, in which the property owner agrees to reserve the property at a given price for a specified period of time, may be entered into an exchange for a deposit payment on the land.

3) Planning Activities

- Identify important highway corridors in a comprehensive plan or long-range plan.
- Map important corridors to communicate with local governments, utilities, and the public.
- Apply appropriate zoning through subdivision regulations.
- Coordinate planning efforts between local governments and utilities.
- Employ incentive zoning by offering density transfers to landowners or developers whose interests are impacted through right-of-way acquisition on their land. Density transfers allow landowners or developers to achieve the same overall density in a site, and therefore the same economic benefit, by concentrating development on land not acquired for the right-of-way.
- Establish a Transportation Corridor Overlay District (TCOD): A TCOD is designed to manage emerging development along transportation corridors. This type of district can preserve future opportunities for desired development.

While several strategies and options are available for corridor preservation, some options may be more feasible than others for SR 46E. Development of these strategies require a great deal of coordination with the local jurisdictions, since land use planning is the primary role and responsibility of the City or County rather than the State Transportation agency. To date, coordination between the partner agencies has resulted in a “first step” by identifying land that needs to be preserved within the corridor.

Land use planning in this segment of SR 46E requires that the responsible agencies (i.e., City of Paso Robles and County of San Luis Obispo) take into account the right-of-way preservation identified by the Comprehensive Corridor Study. There are a variety of ways that the City and County can proceed (as described above) so that land use decisions can be consistent with the preservation plan of the Study.

It is imperative that the transportation partners work to establish mapping to preserve right-of-way and develop a funding plan that can implement the long-term vision at Union Road. Long-term improvement could include grade-separation improvements (undercrossing, overcrossing or interchange) at Union Road, while short-term improvement scenarios can include a wide range of improvement options, such as a signal. However, all improvements are performance based and would under go detailed traffic analysis as part of the project development process. The collaborative effort that establishes the priorities would ensure that short-term solutions do not preclude the long-term vision and a commitment for developing a long-term funding solution.

In addition to the analysis of improvements for Union Road, this Study recommends the following actions:

- Adopt and Enforce Access Restriction
- Establish Setbacks
- Request offers of dedication and road maintenance
- Conduct studies to identify future right-of-way needs and interchange location
- Secure right-of-way preservation

Comprehensive Corridor Study Recommendation: The Comprehensive Corridor Study should continue to be updated in a collaborative effort by the partners to include new data and propose solutions past the 20-year planning horizon of this Study. Integration into the Corridor System Management Plan (CSMP) for SR 46 will be essential to improving the sustainability of the corridor. To ensure that the right-of-way preservation plan is consistent with local planning documents, the following documents will need to be updated:

- Caltrans Corridor System Management Plan for SR 46
- SLOCOG Community 2050
- SLOCOG Regional Transportation Plan
- San Luis Obispo County Salinas River Area Plan
- City of Paso Robles General Plan Update: Traffic Circulation Element

6.0 Implementation Plan

The Comprehensive Corridor Study makes recommendations for long-term improvements to SR 46E. As a result, the expectation will be for Caltrans and the partners to work together to implement these actions.

Corridor Preservation

With the general right-of-way needs identified in the corridor (Union Road), the "first step" of corridor preservation will be to update local land use and transportation planning documents for the City of Paso, County of San Luis Obispo, and San Luis Obispo Council of Governments. These planning documents assure the team that partner agencies have made the commitment to ensure that development of future highway infrastructure is not precluded by interim land use decisions.

Integration with Planning Documents

The Comprehensive Corridor Study will maintain consistency with local planning documents and will create a strong nexus between land use and transportation planning along this corridor.

The intention of the Comprehensive Corridor Study is to provide a 20-year vision for the SR 46E corridor. Part of that vision will be to ensure that local planning documents are consistent with the recommendations, goals and implementation strategies outlined in the Study. Four major planning documents would require updating to provide consistency between the Study and local jurisdictions' land use and transportation planning efforts:

- Caltrans: Corridor System Management Plan – slated to be adopted Summer 2009
- SLOCOG: Regional Transportation Plan – update planned for Spring 2009
- County of San Luis Obispo: General Plan, Infrastructure Strategy – update planned for Summer 2009
- City of Paso Robles: General Plan, Traffic Circulation Element – update planned for Winter 2009

Funding Plan

As the local planning documents are updated, a strategy will need to be developed that closely evaluates how interregional growth on SR 46E and adjacent land development impacts the SR 46E corridor and/or adjacent local road system. Traffic impacts associated with development will need to be managed so that local land use authorities have the opportunity to seek local funds while Caltrans and SLOCOG seek federal, state and regional funds to address interregional needs. Developing a project that addresses the deficiencies and a solid funding plan that includes a commitment from

Developing an improvement concept and solid funding plan, with committed partner funding, gives local jurisdictions a competitive advantage in future funding cycles.

agencies who sponsor and are responsible for project implementation. Agreement between agency partners will allow for discretionary funds when they become available.

Travel Demand Management (TDM) Strategies

Within San Luis Obispo County there are numerous TDM strategies and programs set up to encourage alternative modes of transportation. As demand increases on the existing transportation system it will be necessary to add to and enhance the TDM strategies and programs within the County. The partner agreement will work to identify areas that can be enhanced (such as existing rideshare services, transit, bike and pedestrian facilities and park and ride lot locations). It will also be necessary to have local agencies coordinate with major employers to encourage telecommuting, time-shift changes, and other programs to lessen the demand on the transportation system. As funding becomes limited and demand on the existing system can no longer be addressed through infrastructure alone, it will be necessary to develop strategies that address the demand and encourage mode shifts. Short-term and long-term priorities will need to include TDM as an essential element.

Short-term and Long-term Improvements

Improvements would need to be identified and studied to accommodate the growing traffic demands and to address safety issues that arise. Based on existing and projected traffic data, it will be necessary to have major infrastructure improvements to SR 46E. The long-term vision will potentially include interchanges, over-crossings/under-crossings and capacity increasing improvements to the mainline. As part of the project development process, traffic studies will analyze short and long term alternatives that address corridor need, and include adjacent local streets and intersections. It will analyze configurations of any new signal improvements, improvements to existing signals, and improvements to the SR 46E and US 101 mainline. Informed decision-making will require consideration of technical information together with environmental and economic impacts, as well as social, political and community values. Various types of technical information will be required as part of the Project Development Process to support decision-making and will include, but not be limited to, the following:

- Traffic analysis, modeling and forecasting
- Travel demand characteristics (origin-destination analysis and opportunities for reducing number of vehicles through alternative transportation modes)
- Engineering concepts
- Right-of-way requirements and corridor preservation
- Environmental constraints
- Land use constraints
- Preliminary cost estimates
- Mechanisms for transportation financing
- Sources of funding

In summary, the purpose of this document is to provide a 20-year planning tool that identifies a group of priorities that have been vetted at a local and regional planning level. The recommendations of this Study include:

- Right-of-way preservation at the Union Road area and integration into local land use planning documents
- Develop a funding strategy for the long-term vision
- Develop a funding strategy for construction of individual improvements, then initiate the Caltran's project development process and prepare a Project Study Report
- Local road extensions at the Golden Hill Road to Dry Creek Road, Wisteria Lane extension to Airport Road, and Union Road extension to Airport Road
- Enhance and integrate new travel demand strategies in transit, commuter programs, bike and pedestrian facilities and park & ride lots

The Comprehensive Corridor Study has provided a road map of the "next steps" that will promote continued collaboration between the partnership agencies. The items identified above will strengthen the nexus between land use and transportation planning in the corridor. Providing connectivity for the community, reducing congestion, and improving safety will improve the state and local transportation network. Relocation and consolidation of access points along SR 46E with an interchange system will reduce the points of conflict and reduce congestion-related delay for both local and regional uses of the network.

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Appendix A Glossary & Acronyms

AADT: is the average 24-hour volume, being the total number during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year. The term is commonly abbreviated as ADT or AADT.

Acceleration Lane: is a lane which begins at an on-ramp, to allow entering vehicles to match the freeway speed, then merges into the freeway lanes.

Acquisition. The process of obtaining right of way.

Air Pollution Control District (APCD): A county agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors.

Alternative: One of the construction plans considered for the project.

Arterial: A highway primarily for through traffic, usually on a continuous route.

Auxiliary Lane: is a lane that begins at an on-ramp and ends at an off-ramp, for weaving traffic between ramps.

Capacity: (1) The maximum number of vehicles which has a reasonable expectation of passing over a given section of a lane or a roadway in one direction, or in both directions for a two-lane or three-lane highway, during a given time period under prevailing roadway and traffic conditions. (2) The number of passengers that can be transported over a given section of a transit line in one direction during a given time period (usually one hour) under prevailing traffic conditions.

Circulation Element: A section of the general plan dealing with traffic and transportation concerns predicted traffic growth etc.

Construction Year: is the year in which a construction project is planned for completion.

California Transportation Commission CTC: The CTC is responsible for programming and allocating funds for the construction of highway, passenger rail, and transit improvements throughout California.

The "Department": is the California Department of Transportation.

Design Year: is normally 20 years after the construction year.

FHWA: is the Federal Highway Administration.

Focus Routes: These routes are a subset of the 34 High Emphasis IRRS routes. They represent the ten corridors that should be the highest priority for completion to minimum facility standards in order to serve higher volume interregional trip movements.

Freeway and Express System (F&E): The Statewide system of highways declared by the Legislature to be essential to the future development of California. The F&E System has been constructed with a large investment of funds for the ability of control access, in order to ensure the safety and operational integrity of the highways.

Functional Classification: is the process by which streets and highways are grouped into classes, or systems, according to the character of the service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.

High Emphasis Routes: High Emphasis routes are characterized as being the most critical Interregional Road System (IRRS) routes. More importantly, these routes are critical to interregional travel and the state as a whole.

Interchange: A system of interconnection roadways in conjunction with one or more grade separations providing for the interchange of traffic between two or more roadways on different levels.

Interregional Road System (IRRS): A series of interregional state highway routes, outside the urbanized areas, that provides access to, and links between, the State's economic centers, major recreational areas and urban and rural regions.

Intersection: Where two or more roads intersect.

Kiloposts: refers to the specific location on a highway, measured in kiloposts from the county line. Kiloposts start at zero and increase as the highway goes from south to north or from east to west.

Level of Service (LOS) describes the quality of operation of a highway facility. It is a measure of prevailing speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, convenience, safety, and operating cost. It is based on peak traffic hours when traffic volumes are generally highest. An LOS of "A" describes a condition of uncongested operations, free traffic flow, and short cycle lengths with minimal or nonexistent vehicle delays; LOS "F" describes extremely congested operations, over saturation of intersections, and stop-and-go traffic with typical vehicle delays exceeding 60 seconds.

Loop ramp: a ramp requiring vehicles to execute a left turn by turning right, accomplishing a 90-degree left turn by making a 270-degree right turn.

Mainline: the primary through roadway as distinct from ramps, auxiliary lanes and collector-distributor roads.

Median: The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Merge: A movement in which two separate lanes of traffic combine to form a single lane without the aid of traffic signals or other right-of-way controls.

National Highway System (NHS): ISTEA established a 155,000-mile NHS to provide an interconnected system of principle arterial routes to serve major travel destinations and population centers, international border crossings, as well as ports, airports, public transportation facilities and other intermodal transportation facilities. The NHS must also meet national defense requirements and serve interstate and interregional travel.

National Network (NN) for Trucks: This network is comprised of the National System of Interstate and Defense Highways; examples are I-10, I-5 and I-80. STAA Trucks are allowed on the NN.

Overcrossing: is a structure that carries a local street over a State highway.

Peak Hour: is the one-hour period of the day having the greatest traffic volume.

Postmile: refers to the specific location on a highway, measured in miles from the county line. Postmiles start at zero and increase as the highway goes from south to north or from east to west.

Ramp: A connecting roadway between a freeway or expressway and another highway or roadway.

Right of Way (ROW) is the land on which a project is located or construction.

Strategic Highway Network (STRAHNET): A network of highways important to the United States strategic defense policy and which provides defense access, continuity, and emergency capabilities for the movement of personnel, materials and equipment in both peace time and war time.

State Highway Extra Legal Load (SHELL) Route: A network of State Highways designated where overweight and/or extra-large vehicles may be permitted to travel under certain limited conditions.

State Implementation Plan (SIP): is a plan required by the Federal Clean Air Act of 1970 to attain and maintain national ambient air quality standards. The 1998 Clean Air Plan is the applicable EPA approved SIP for Santa Barbara County.

State Transportation Improvement Program (STIP) is an annual 5-year document providing a schedule of projects for development over the upcoming five years including all funds to be allocated by the CTC.

Study Team: A working team that analyzed the alternatives prepared the need and purpose and reviewed the CCS.

Undercrossing: is a structure that carries a local street under a state highway.

Vehicle Miles Traveled (VMT): The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly, or yearly) or over a specified road or transportation corridor.

Weaving: The crossing of two or more traffic streams traveling in the same direction along a significant length of highway, without the aid of traffic control devices (except for guide signs).

Weaving Section: A length of one-way roadway designed to accommodate weaving, at one end of which two one-way roadways merge and at the other end of which they separate.

Appendix B Public Participation

Route 46 East Corridor Study
March 5, 2008
Community Workshop Summary

Prepared by:

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April 2008

Introduction

On March 5, 2008, approximately 50 Paso Robles residents and local agency representatives attended the Route 46 East Community Workshop at the City of Paso Robles Library Conference Center. The meeting provided residents an opportunity to discuss transportation issues within the five mile study corridor and to hear directly from Caltrans and other Study Team agency staff.

The meeting, the first of three, was hosted by agencies collaborating on the Route 46 East Comprehensive Corridor Study, including Caltrans, San Luis Obispo County and the San Luis Obispo Council of Governments. While not currently a formal partner on the Study Team, the City of Paso Robles is a key stakeholder that has participated in the formative stages of the process. Planning assistance was provided by MIG, Inc., a consulting firm that specializes in city planning, design, communications and technology services.

The meeting began with brief welcoming remarks from Study Team representatives, followed by an open session where residents could bring up any ideas, issues or concerns they had about the corridor. Larry Newland, Caltrans project manager, then presented the purpose, goals and status of the Comprehensive Corridor Study. Larry explained that Caltrans is seeking public input to identify problems in the Corridor and evaluate solutions. Following the large group discussion, participants continued the discussion in small groups where they answered three questions:

- Which of the corridor goals is most important to you, and why?
- Where are your specific concerns in the corridor?
- Where are there opportunities to improve the corridor?

The key points of the discussion were summarized and recorded in a closing presentation.

Large Group Discussion

Carolyn Verheyen of MIG facilitated a large group discussion about current conditions in the corridor. Carolyn explained that the conversation was an opportunity to share what is and is not working in the corridor, and there were no "right answers." Paul Rosenbloom of MIG graphically recorded participants' comments. A copy of the record is included in the report as Figure 1.

"Safety" was a concern for many participants, as was the health of local businesses. Other issues that participants mentioned included "lighting," "truck traffic," and "truck parking." Specific safety concerns are listed in figure 1. Participants stressed that they believe congestion problems are primarily due to "interregional traffic."

Many people expressed their desire that corridor improvement efforts be designed to reinforce and "enhance" the small town image of Paso Robles, including creating a "gateway" so motorists knew that they were entering the city. Residents also encouraged the

project team to take a "comprehensive" approach to the Corridor Study, examining a "range of options" including "transit" and "interim improvements."

Small Group Discussion

The small groups provided participants an opportunity to discuss corridor issues in greater detail, and the themes that emerged were similar to those from the large group discussion. In addition to general discussion, participants were able to use a map of the corridor study area to point out specific concerns or improvement suggestions, included in Figure 2.

Which of the corridor goals is most important to you, and why?

Participants were asked to review the corridor goals established by the Study Team and identify the two goals that should receive the highest priority. Overall, "increasing safety and efficiency" and "separating local, regional and interregional traffic" were given the highest priority by participants.

Where are your specific concerns in the corridor?

Participants identified the following top issues:

- Safety
- Protecting business
- Connectivity
- Level of service/traffic flow
- Aesthetics/gateway
- Maintaining the character of Paso Robles

As in the large group, stakeholders were very concerned about safety, and this issue was one of their highest priorities. The intersection with Airport Road was singled out as particularly dangerous.

Besides safety, protecting business was an important priority. Participants believed that corridor improvements could offer benefits to local businesses if they were done right, but could have the opposite effect if done wrong. Protecting Paso Robles' rural aesthetic and quality of life were very important goals for many participants who expressed a desire that any design solution be in keeping with current community character. Many people believed that a six-lane highway was not appropriate for Paso Robles.

Where are there opportunities to improve the corridor?

Top priorities for improvements included the following intersections:

- On/off ramps for SR 101
- Golden Hill
- Airport Road

Participants also emphasized that a phased approach could be useful, and that it was important to keep property owners informed of any developments. Many people believed it was important to make improvements immediately, and ideas for improvements included:

- Adding battery backup power for lights
- Improving landscape maintenance
- Improving signage

Summary and Next Steps

Project staff will use the information collected at this meeting to refine the project goals and consider technically feasible solutions. The next public workshop is scheduled for May 29th, 2008. Interested stakeholders can stay informed by visiting the project website, www.46eastforthefuture.org, or contacting Larry Newland, Project Manager, at (805) 549-3103 or larry_newland@dot.ca.gov.

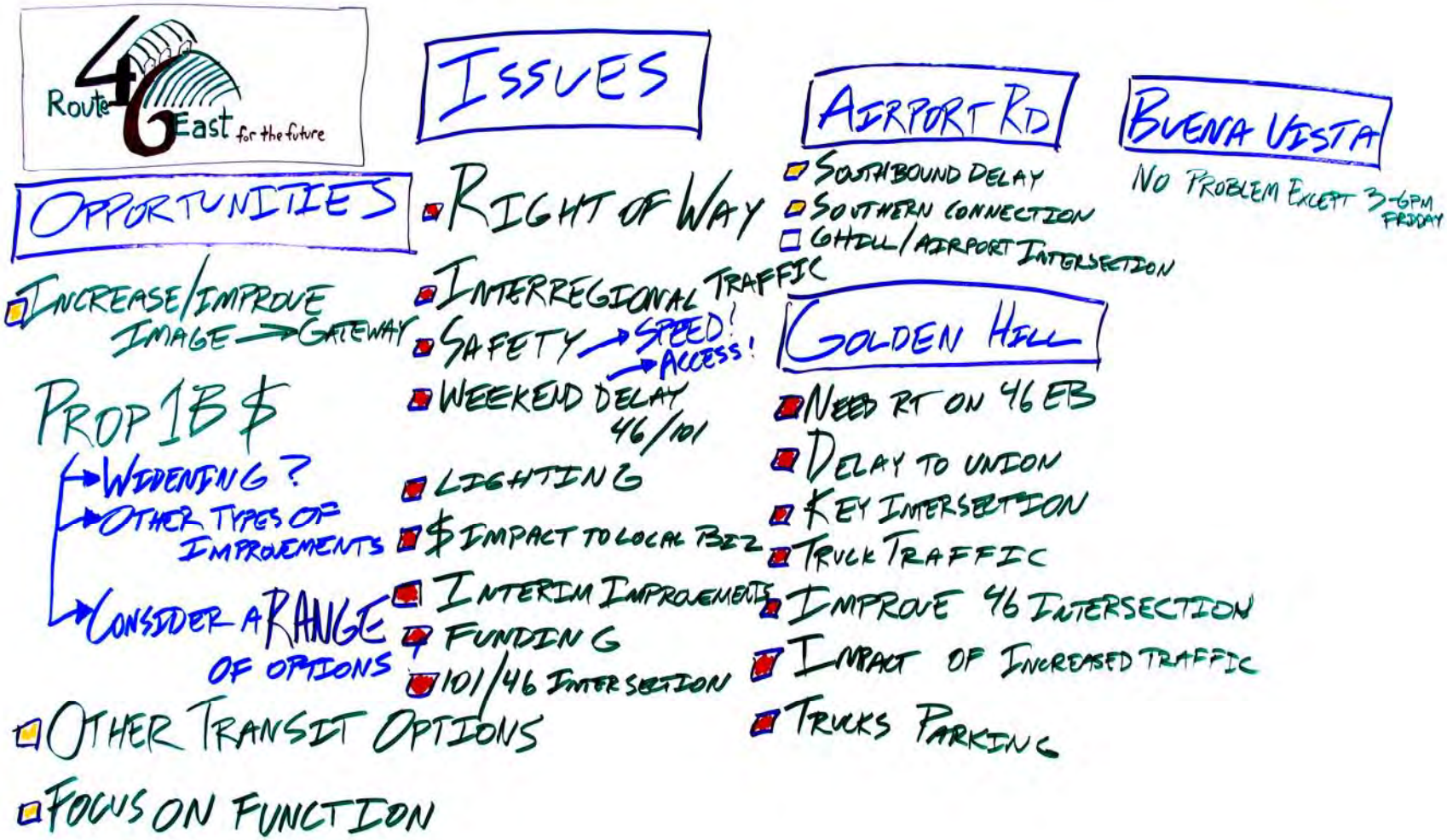

FIGURE 1. LARGE GROUP COMMENTS

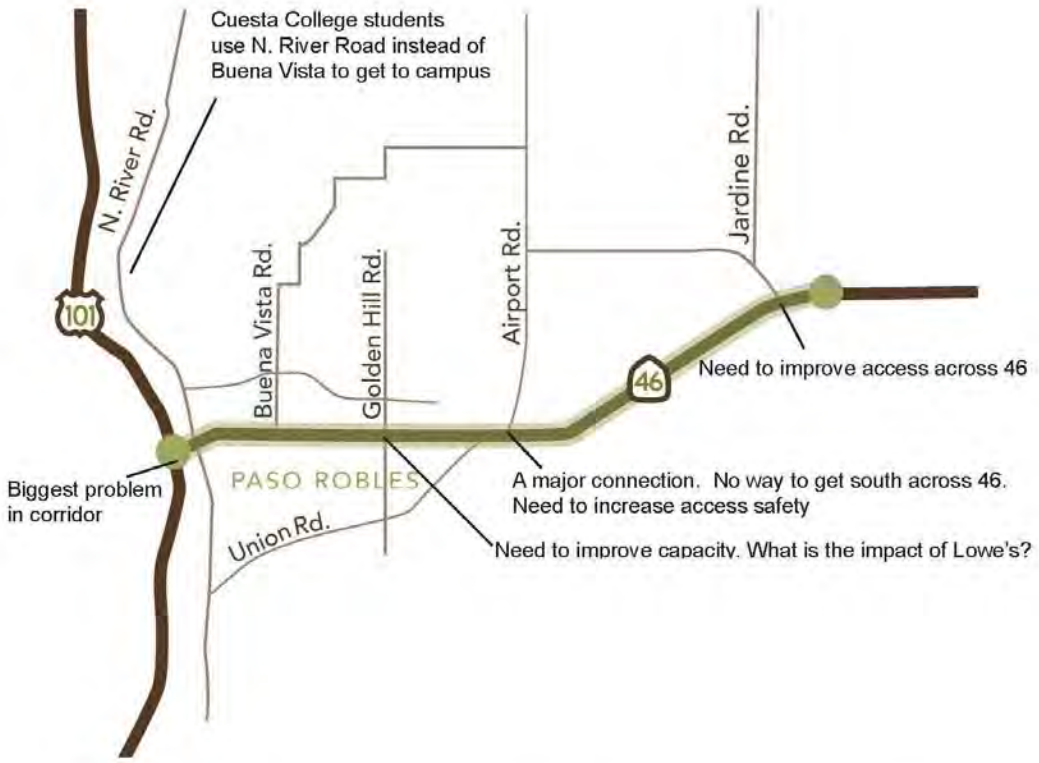

FIGURE 2: Small group participant comments from March 5 workshop

Route 46 East Corridor Study
May 29, 2008
Community Workshop Summary

Prepared by:

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June 2008

Introduction

On May 29, 2008, approximately 50 Paso Robles residents and local agency representatives attended the second of three Route 46 East Community Workshops designed to solicit input for the SR 46 East Comprehensive Corridor Study (CCS). The workshop was held at the Park Ballroom in Paso Robles, providing residents an opportunity to discuss transportation issues and potential improvements within the five mile study corridor and to hear directly from Caltrans and other Study Team agency staff about local transportation planning efforts.

The meeting was hosted by the partner agencies collaborating on the SR 46 East CCS including Caltrans, San Luis Obispo County and the San Luis Obispo Council of Governments (SLOCOG). The City of Paso Robles, a key stakeholder, has participated throughout the process and provided staff support for the workshop. Planning assistance was provided by MIG, Inc., a consulting firm that specializes in city planning, design, communications and technology services.

Summary of Workshop Process

The meeting began with brief welcoming remarks from Aileen Loe, Caltrans District 5 Deputy Director, Planning and Local Assistance that were followed by a presentation from Larry Newland Caltrans project manager.

Larry provided a brief history of the corridor study and an overview of the transportation planning concepts that guide the Comprehensive Corridor Study process.

Corridor Study Review

Larry explained that the CCS process is a multi-agency effort to develop a 20 year blueprint for short-term and long-term improvements to the corridor. The process is guided by corridor goals established by the multi-agency study team and others identified by the public. Corridor goals include:

- Increasing safety & efficiency
- Fostering connectivity in all directions
- Enhancing community cohesion, character & quality of life
- Separating local, regional & interregional traffic
- Promoting multi-modal movement
- Providing a decent level of service
- Ensuring goods movement

During the first community workshop, held on March 5th, participants were asked to review the goals identified by the study team and identify their highest priority goals. Larry explained that increasing safety & efficiency, fostering connectivity in all directions and enhancing community cohesion, character and quality of life were the highest priority goals for participants. In addition, participants expressed interest in protecting existing businesses along the corridor and ensuring that improvements are aesthetically pleasing and provide a gateway-like entry to Paso Robles.

Transportation Planning Concepts

Caltrans is seeking to develop improvement options that are reflective of the corridor context, paying attention to the built environment, natural environment, the purpose of the facility and the needs and interests of local stakeholders.

In addition, Larry explained that Caltrans is seeking to integrate Demand Management Strategies into the study that will relieve congestion in the corridor. Demand Management Strategies currently under consideration include improved public transportation systems, bicycle and pedestrian options.

Small Group Exercise

Carolyn Verheyen of MIG introduced the small group exercise by describing various mobility interests in the corridor including local, regional and interregional travelers. She then reviewed a variety of improvement options designed to meet these varying interests:

Options described included:

- Intersection improvements
- Roundabouts
- Interchanges
- Overcrossings
- Undercrossings
- Pedestrian and bicycle crossings
- Auxiliary lanes
- Local Roads and;
- A variety of Demand Management Strategies

The variety of improvement options were classified according to the type of movement they encourage.

- To, From, Along & Across 46 East
- Along & Across 46 East
- Along 46 East
- Around 46 East

Following Carolyn's discussion of mobility interests and improvement options, participants broke into small groups of 6-8 people to participate in an hour-long, facilitated discussion about specific improvements and their location in the corridor.

Workshop Results

Small group facilitators oriented participants to an aerial map of the study area, highlighting key intersections and pending development projects in the corridor. Following an overview of the study area, the facilitators asked participants to identify their highest priority movement type (as described above). Using the movement type identified by a majority of participants as a conversation starting point, the small groups were asked to identify preferred long-term improvements for the corridor. Improvements were depicted on a series of playing cards designed for the workshop. On one side of the card was a perspective illustration of the improvement option and on the reverse was a scaled 'bird's eye' schematic drawing that, when played, fit onto the aerial map. Local road improvements were identified with pipe cleaners that participants placed on the aerial to identify preferred locations for local road improvements.

Improvement options were assigned a non-monetary value reflecting the scale of magnitude of the project costs. The exercise was originally designed as a two-part exercise where participants would identify ideal long-term solutions without financial constraint and then be asked to refine their choices based on an identified budget. However, most groups were fiscally conservative from the outset of the exercise and did not greatly exceed the fictional corridor budget. Upon completion of the exercise, participants were asked to prioritize the improvements that they had identified.

The key overall findings of the exercise are described below, listed in tables 1-4 and depicted in a series of appendices. Appendix A is a series of maps showing the results of each small group discussion. Appendix B is a map of the study area with all suggested local road improvements. Appendix C is a summary of the individual comment cards that were submitted at the workshop.

Need to improve Golden Hill and Jardine Intersections

Five out of six small groups identified a need to improve the Golden Hill Road/ 46 East intersection with either signalized improvements (4 groups) or an overcrossing (1 group). Similarly, four out of the six groups identified the need for improvements to or around the Jardine Road/ 46 East intersection. Identified improvements to the Jardine Road intersection included an interchange, auxiliary lane and intersection improvements.

Increasing North/ South Connectivity

Given that participants were primarily local residents, there was a strong interest expressed in improved north/south connections across 46 East. Participants made a number of detailed suggestions regarding the Airport and Union intersections in particular.

- Five out of the six small groups desired intersection improvements where Union Road and Paso Robles Boulevard intersect with 46 East.

Improving Local Road Connections

Participants identified local road connections as integral to improving traffic throughout the corridor. On average, each table identified two miles of local road improvements, primarily to the north of 46 East. The location of these potential improvements is depicted in

appendix B. Improvements to and along Airport Road were the most often suggested improvement types.

- Five out of the six small groups desired a connection/extension of the western portion of Dry Creek Road, including connections to Buena Vista Drive, Golden Hill Road, and Wisteria Lane.

- Four out of six groups identified a need for a Paso Robles Blvd. connection to Airport Road, via a Huerhuero Creek bridge crossing.

Maintaining Access to Businesses

Participants were concerned about the potential impact of any corridor improvements to existing local businesses and expressed a desire for selecting corridor improvements that will have a minimal impact on these businesses.

Locating Bicycle and Pedestrian Connections

As noted in the maps (appendix A), participants expressed interest in potential bicycle and pedestrian connections between Airport Road and Paso Robles Blvd./ Union Road. Four out of six groups identified this as a desirable location for a bike crossing and another expressed interest in a connection across 46 East between Hunter and Vaquero Ranches.

Individual Suggestions

A number of suggestions were made on individual comment cards. The comments included detailed improvement suggestions to both Golden Hill Road and Airport Road as well as a suggestion for an interchange at Union Road. Individual comments are summarized in appendix c.

Fiscally conservative and short-term focused participants

The improvement option exercise was designed to solicit participant input regarding potential short and long-term improvements. Despite being asked to focus on improvements needed for the long term, participants focused on identifying potential short-term improvements and tended to focus on prioritizing short-term, low cost improvements rather than more expensive options.

Priority Improvements

Tables 1-4 represent that improvement options that were given highest priority during the small group exercise.

Table 1: Priority Improvements by Key Intersection	
	Buena Vista Drive
1	No Improvements Requested
	Golden Hill Road
1	Signalized Intersection Improvement
2	Overcrossing
	Union Road
1	Intersection improvements between Union Road and Paso Robles Blvd.
2	Undercrossing
3	Interchange (local at ground, 46 East lowered)
	Airport Road
1	Right in/ Right out
2	Interchange (local under, 46 East at ground level)

Table 2: Priority Local Road Improvements (see appendix B for summary of locations)	
1	Connection/extension of the western portion of Dry Creek Road, including connections to Buena Vista Drive, Golden Hill Road, and Wisteria Lane.
2	Connect Airport Road to Paso Robles Blvd via a creek crossing
3	Golden Hill Road widening between Wisteria Lane and Union Road

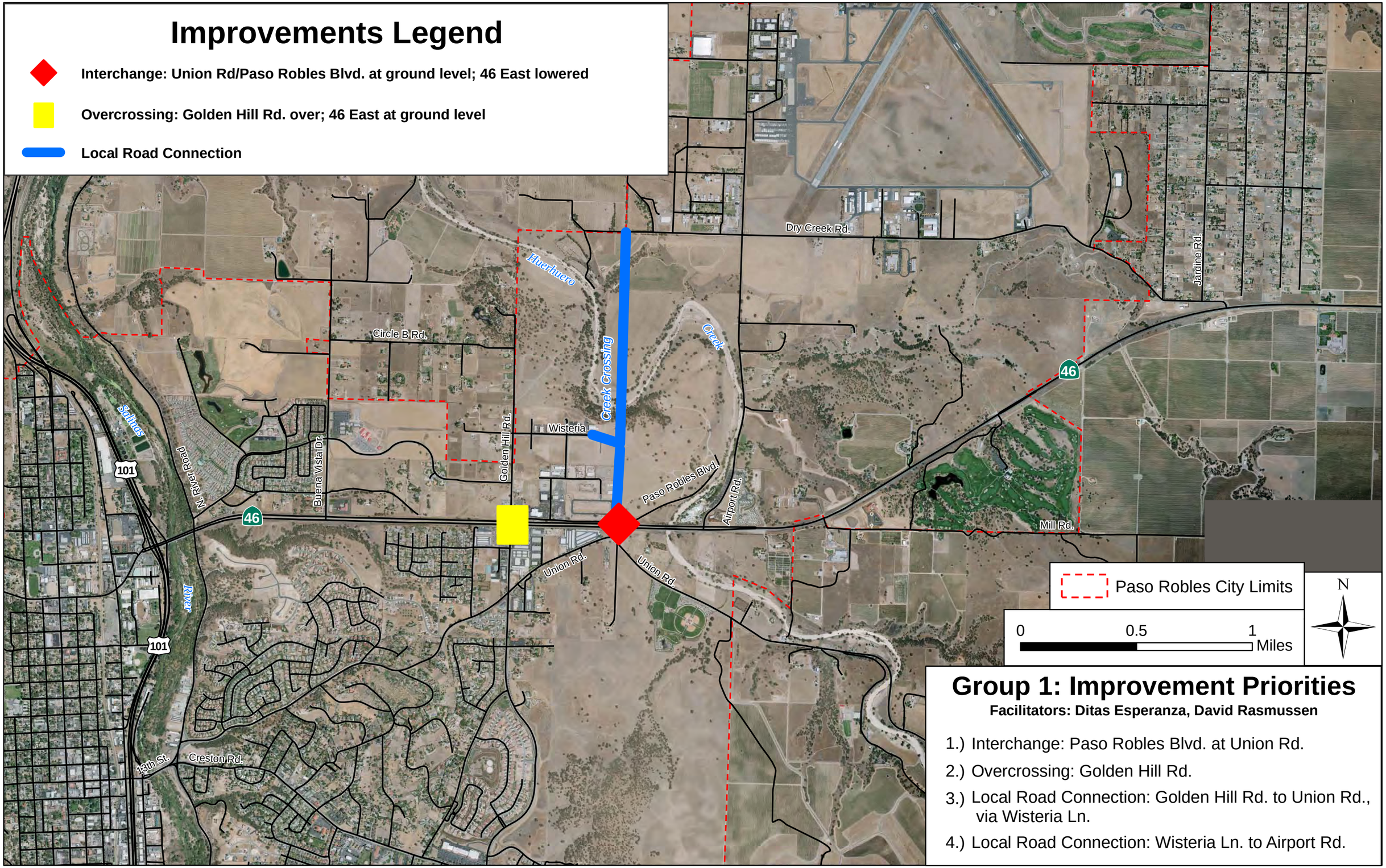
Table 3: Priority Transportation Demand Management Strategies	
1	Bus Service (esp. to and from the airport)
2	Park and Ride Lots (East of Buena Vista Drive)
3	Bicycle and Pedestrian Crossings Union Road to Paso Robles Blvd Union Road to Airport Road
4	Changeable Message Sign at Jardine Road

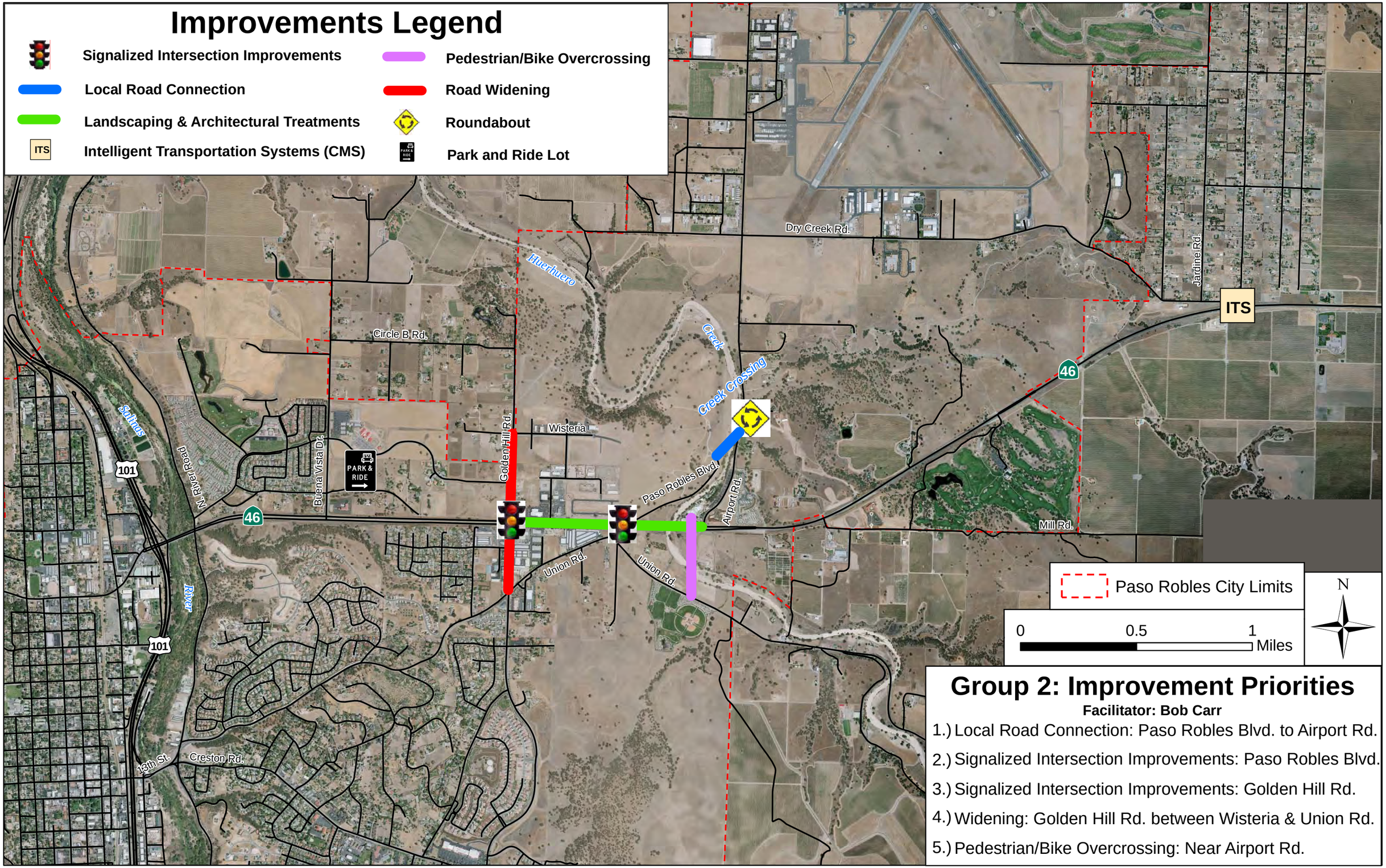
Table 4: Other Ideas	
1	Improvements to Jardine Road/ 46East Intersection Interchange (local under, 46 East at ground level) Aux lane 3 legged intersection improvements
2	Landscaping and Aesthetic Treatment along 46, between US 101 and Airport Road
3	North/ South connections from Hunter Ranch to Vaquero Ranch (local under with bicycle/pedestrian path)

Summary and Next Steps

Project staff will review all improvement option preferences expressed at the workshop and integrate these findings into the improvement selection process. The next public workshop will occur in October, 2008 when the Comprehensive Corridor Study will be unveiled.

Appendix A: Small Group Discussion Results


Improvements Legend
Interchange: Union Rd/Paso Robles Blvd. at ground level; 46 East lowered
Overcrossing: Golden Hill Rd. over; 46 East at ground level
Local Road Connection
Dry Creek Rd.
Jardine Rd.
Huerhuero
Creek
Creek Crossing
Circle B Rd.
Wisteria
Golden Hill Rd.
Buena Vista Dr.
Salinas
River
N. River Road
101
46
Paso Robles Blvd.
Airport Rd.
Union Rd.
Union Rd.
Mill Rd.
13th St.
Creston Rd.
Paso Robles City Limits
0
0.5
1
Miles
N
Group 1: Improvement Priorities
Facilitators: Ditas Esperanza, David Rasmussen
1.) Interchange: Paso Robles Blvd. at Union Rd.
2.) Overcrossing: Golden Hill Rd.
3.) Local Road Connection: Golden Hill Rd. to Union Rd., via Wisteria Ln.
4.) Local Road Connection: Wisteria Ln. to Airport Rd.



Group 2: Improvement Priorities

Facilitator: Bob Carr

1.) Local Road Connection: Paso Robles Blvd. to Airport Rd.

2.) Signalized Intersection Improvements: Paso Robles Blvd.

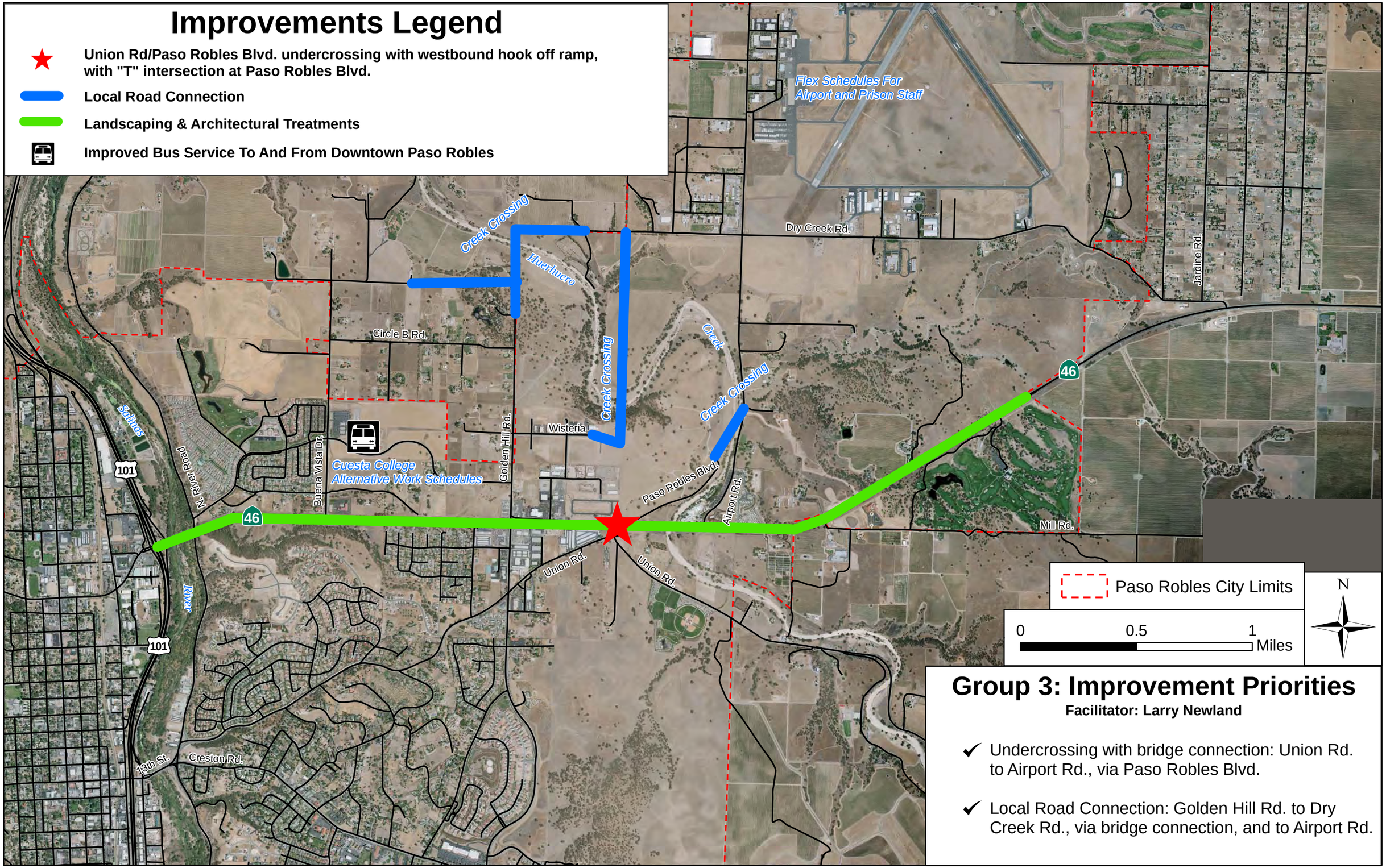
3.) Signalized Intersection Improvements: Golden Hill Rd.

4.) Widening: Golden Hill Rd. between Wisteria & Union Rd.

5.) Pedestrian/Bike Overcrossing: Near Airport Rd.

Improvements Legend

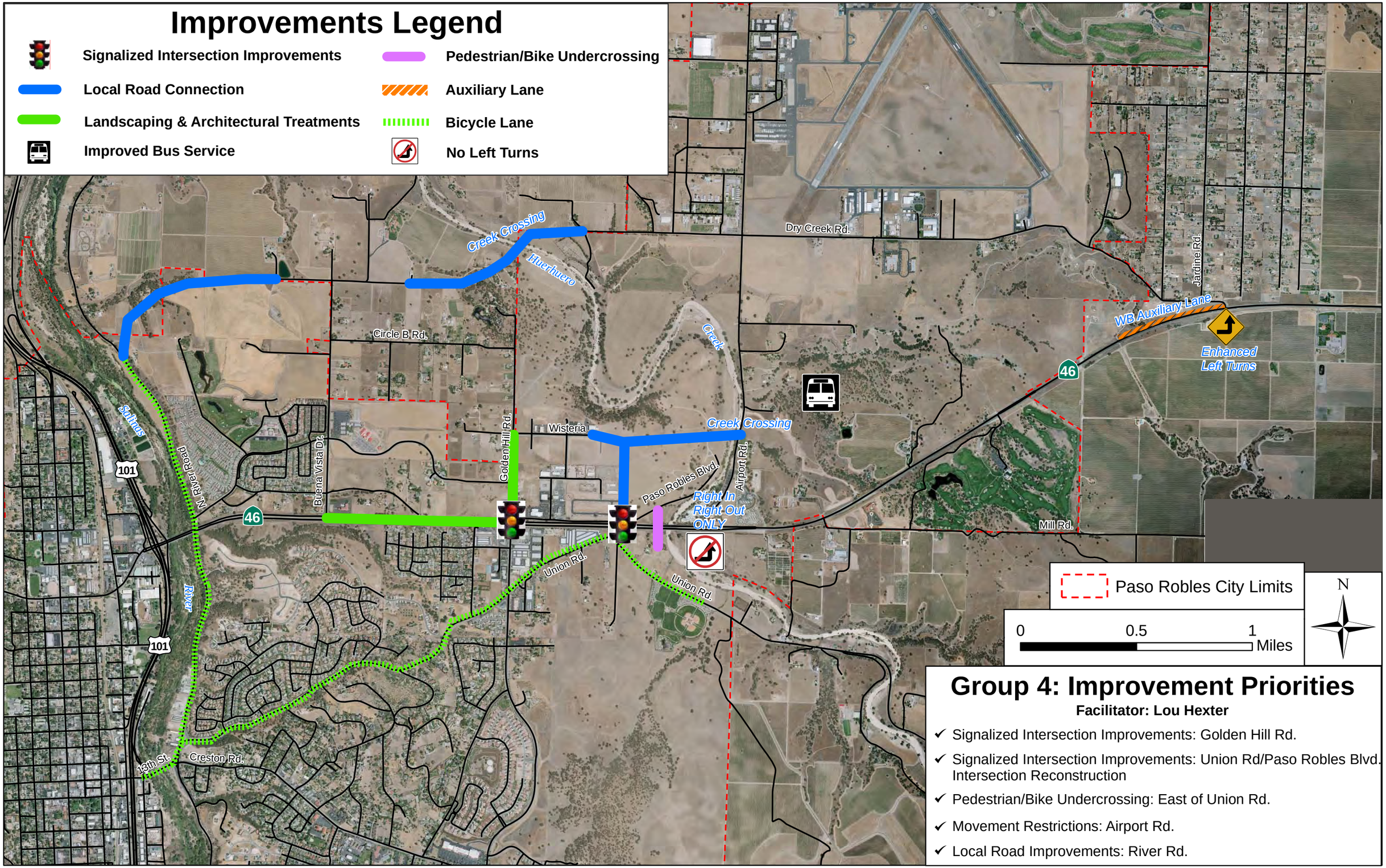
- Union Rd/Paso Robles Blvd. undercrossing with westbound hook off ramp, with "T" intersection at Paso Robles Blvd.
- Local Road Connection
- Landscaping & Architectural Treatments
- Improved Bus Service To And From Downtown Paso Robles



Group 3: Improvement Priorities

Facilitator: Larry Newland

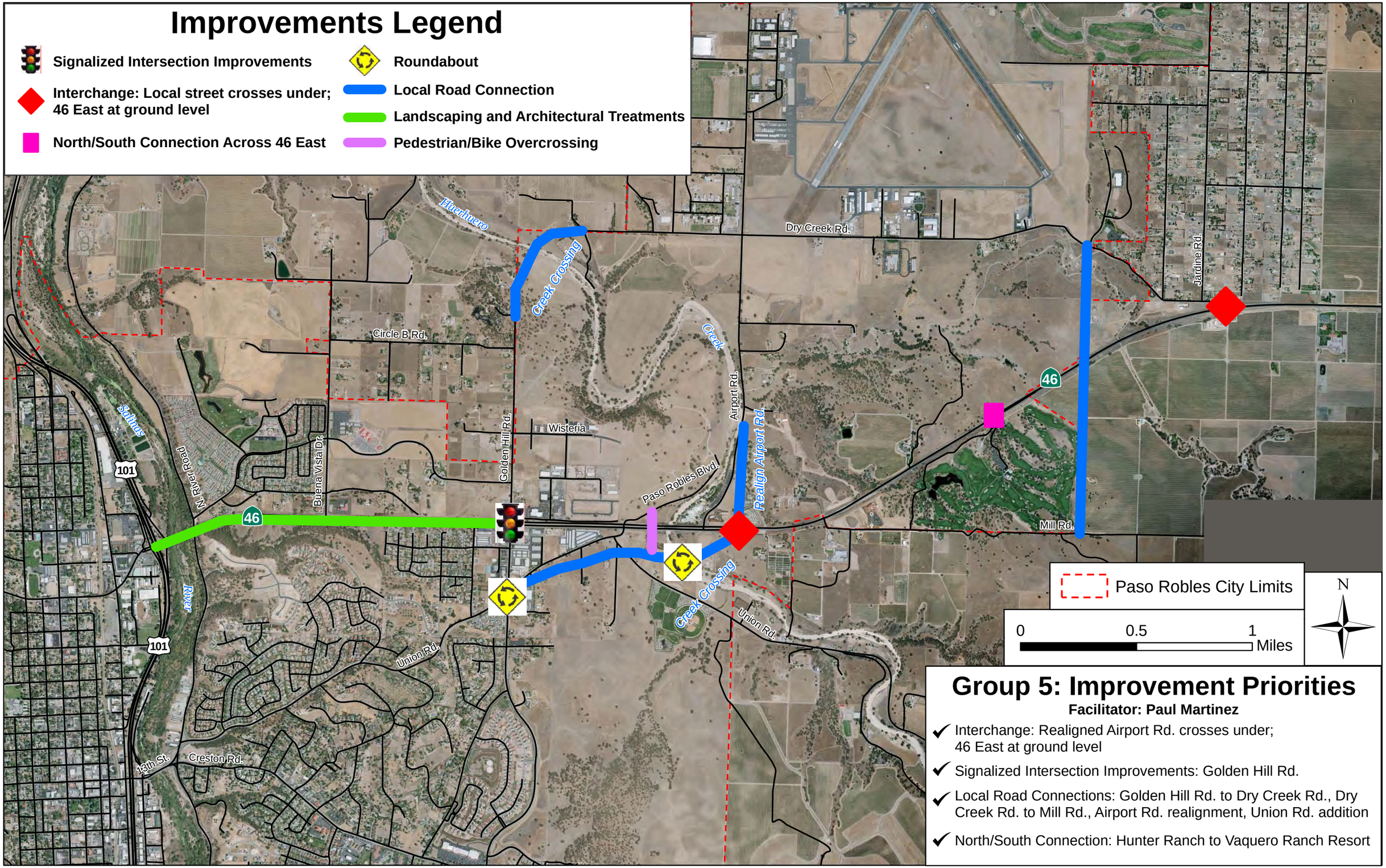
- ✔ Undercrossing with bridge connection: Union Rd. to Airport Rd., via Paso Robles Blvd.
- ✔ Local Road Connection: Golden Hill Rd. to Dry Creek Rd., via bridge connection, and to Airport Rd.

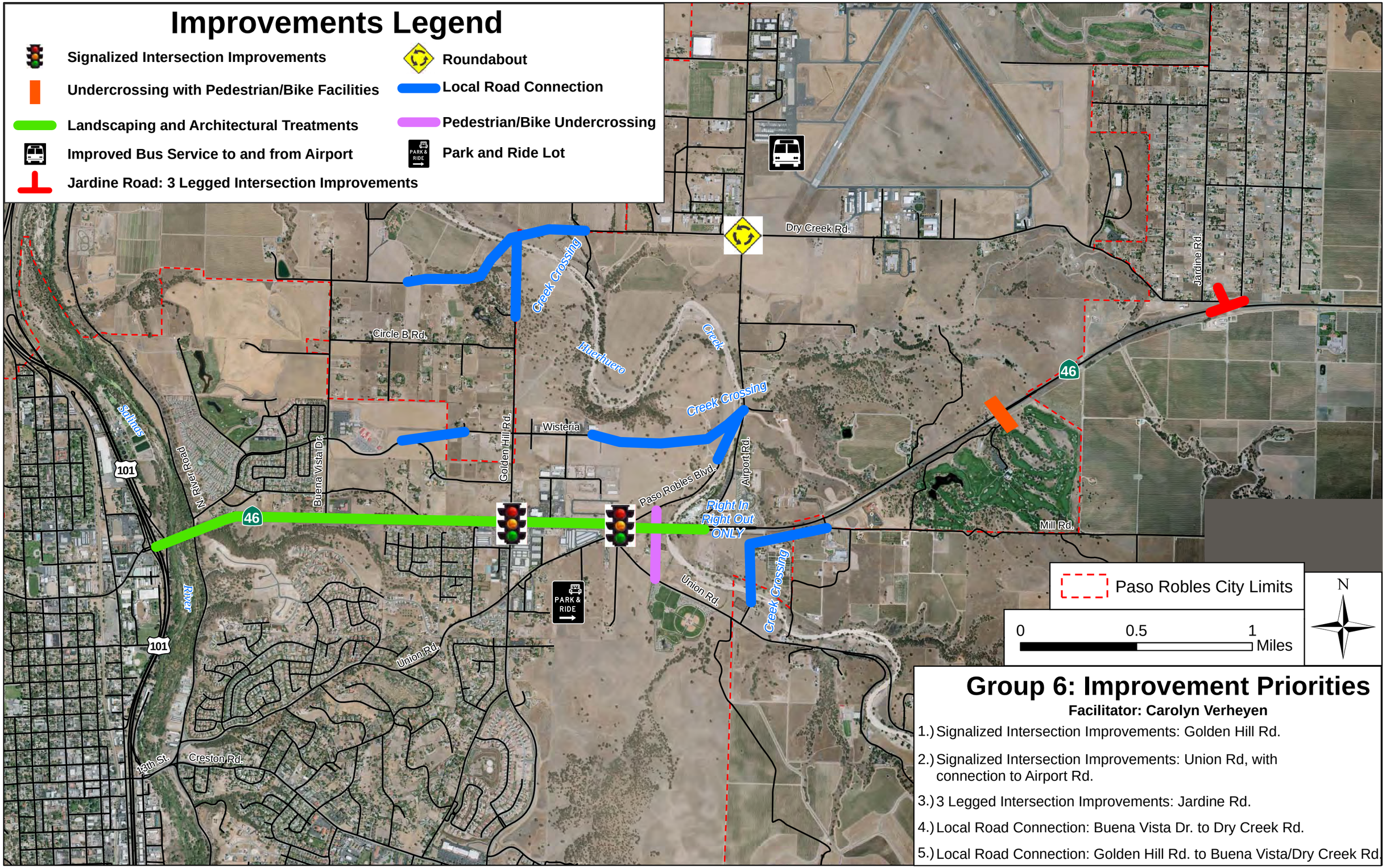


Group 4: Improvement Priorities

Facilitator: Lou Hexter

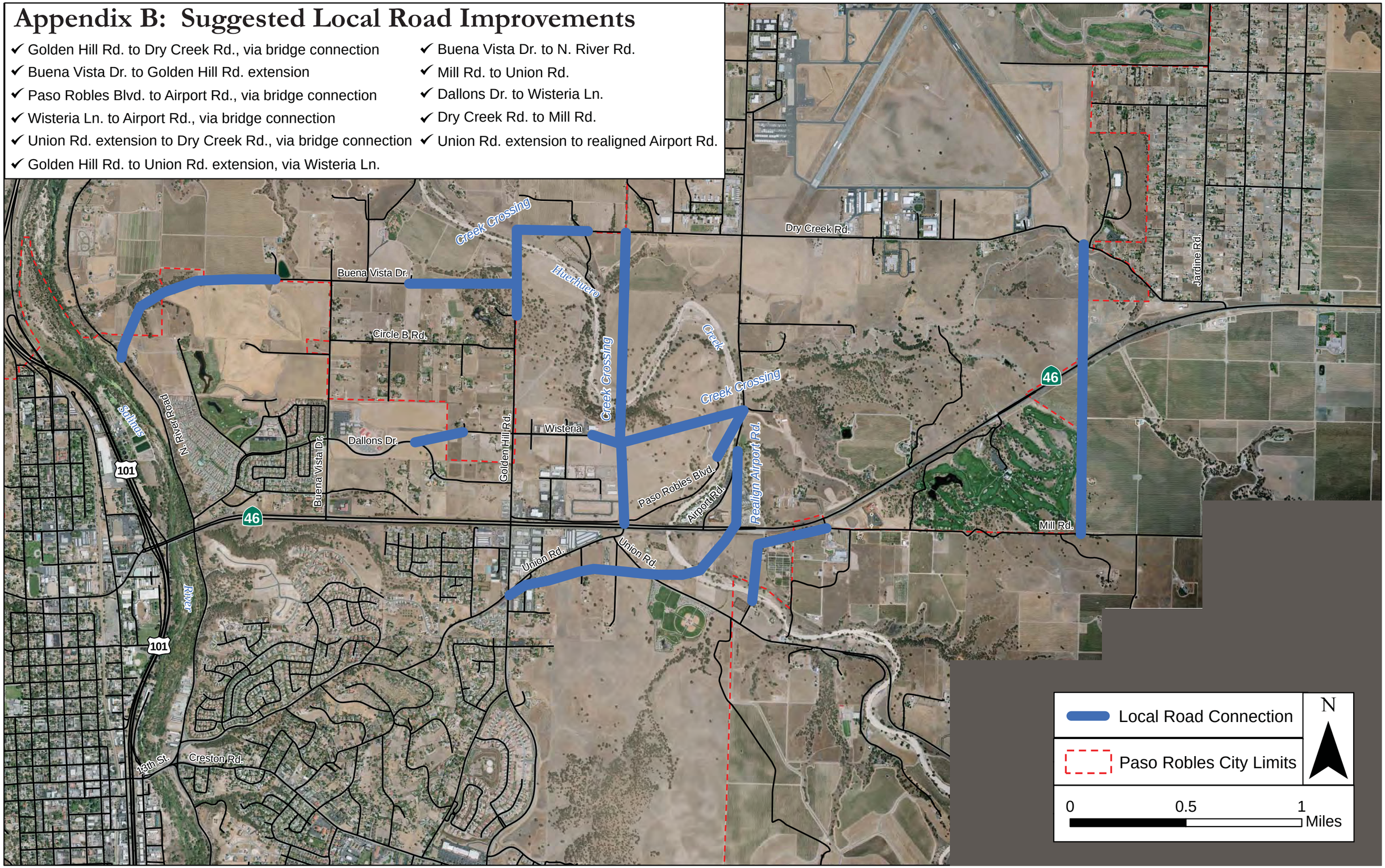
- ✓ Signalized Intersection Improvements: Golden Hill Rd.
- ✓ Signalized Intersection Improvements: Union Rd/Paso Robles Blvd. Intersection Reconstruction
- ✓ Pedestrian/Bike Undercrossing: East of Union Rd.
- ✓ Movement Restrictions: Airport Rd.
- ✓ Local Road Improvements: River Rd.


Improvements Legend
Signalized Intersection Improvements
Interchange: Local street crosses under; 46 East at ground level
North/South Connection Across 46 East
Roundabout
Local Road Connection
Landscaping and Architectural Treatments
Pedestrian/Bike Overcrossing
Huerhuero
Creek Crossing
Dry Creek Rd.
Jardine Rd.
Circle B Rd.
Creek
Airport Rd.
Realign Airport Rd.
46
Salinas
101
N. River Road
Buena Vista Dr.
Golden Hill Rd.
Wisteria
Paso Robles Blvd.
Mill Rd.
River
Union Rd.
13th St.
Creston Rd.
Paso Robles City Limits
0
0.5
1
Miles
N
Group 5: Improvement Priorities
Facilitator: Paul Martinez
✔ Interchange: Realigned Airport Rd. crosses under; 46 East at ground level
✔ Signalized Intersection Improvements: Golden Hill Rd.
✔ Local Road Connections: Golden Hill Rd. to Dry Creek Rd., Dry Creek Rd. to Mill Rd., Airport Rd. realignment, Union Rd. addition
✔ North/South Connection: Hunter Ranch to Vaquero Ranch Resort


Improvements Legend
Signalized Intersection Improvements
Undercrossing with Pedestrian/Bike Facilities
Landscaping and Architectural Treatments
Improved Bus Service to and from Airport
Jardine Road: 3 Legged Intersection Improvements
Roundabout
Local Road Connection
Pedestrian/Bike Undercrossing
Park and Ride Lot
Dry Creek Rd.
Jardine Rd.
Creek Crossing
Huerhuero
Creek
Circle B Rd.
Wisteria
Golden Hill Rd.
Buena Vista Dr.
Salinas
N. River Road
River
101
46
Paso Robles Blvd.
Airport Rd.
Right In
Right Out
ONLY
Mill Rd.
Union Rd.
PARK & RIDE
13th St.
Creston Rd.
Paso Robles City Limits
0
0.5
1
Miles
N
Group 6: Improvement Priorities
Facilitator: Carolyn Verheyen
1.) Signalized Intersection Improvements: Golden Hill Rd.
2.) Signalized Intersection Improvements: Union Rd, with connection to Airport Rd.
3.) 3 Legged Intersection Improvements: Jardine Rd.
4.) Local Road Connection: Buena Vista Dr. to Dry Creek Rd.
5.) Local Road Connection: Golden Hill Rd. to Buena Vista/Dry Creek Rd.

Appendix B: Suggested Local Road Improvements

- ✓ Golden Hill Rd. to Dry Creek Rd., via bridge connection
- ✓ Buena Vista Dr. to Golden Hill Rd. extension
- ✓ Paso Robles Blvd. to Airport Rd., via bridge connection
- ✓ Wisteria Ln. to Airport Rd., via bridge connection
- ✓ Union Rd. extension to Dry Creek Rd., via bridge connection
- ✓ Golden Hill Rd. to Union Rd. extension, via Wisteria Ln.
- ✓ Buena Vista Dr. to N. River Rd.
- ✓ Mill Rd. to Union Rd.
- ✓ Dallons Dr. to Wisteria Ln.
- ✓ Dry Creek Rd. to Mill Rd.
- ✓ Union Rd. extension to realigned Airport Rd.



Appendix C: May 29 Workshop Individual Comment Card Summary

	Buena Vista Drive	Golden Hill Road	Union Road	Huerhuero Creek	Airport Road	Jardine Road	Other
1	Interchange	Local under	Interchange with onramp, local road under	New bridge	Off-ramp, remove access from Airport to 46E		
2		Connect Dry Creek to Golden Hill Road	Interchange				Consider businesses that are here and coming
3							Continue with right and left lane turns into Mill Road from 46
4		Expand interchange and widen Golden Hill Rd.	Signalized intersection		Abandon Airport Rd. bridge concept		New road at Paso Robles Blvd. with bridge for river crossing; No roundabouts
5	Pedestrian/bike overcrossing or undercrossing north of 46				Roundabout at intersection of 46 and Airport		
6		Overcrossing with local street over	Interchange with local street at ground level			Overcrossing with local street over	
7					Reduce Airport access		

Summary:					
Buena Vista Drive	**Golden Hill Road**	**Union Road**	**Huerhuero Creek**	**Airport Road**	**Jardine Road**
Interchange (1)	Various suggestions for improvement	Interchange (3)	New bridge (1)	Various suggestions for improvement	Interchange with local street over (1)
Ped/bike crossing (1)		Signalized intersection (1)		Reduce/remove Airport access (2)	

Appendix C Issues, Goals & Problem Statement

STUDY PURPOSE

The primary purpose of this Study is for the four key partner agencies (Caltrans, SLOCOG, City of Paso Robles, County of San Luis Obispo) to develop an agreed upon 20-year improvement strategy for Highway 46 East Corridor from US 101 to Jardine Road.

GOALS FOR THE CORRIDOR

- Separating local, regional and interregional traffic
- Ensuring goods movement
- Fostering connectivity to, across and along 46E
- Increasing safety and efficiency
- Providing a decent level of service
- Promoting multi-modal movement
- Enhancing community cohesion, character and quality of life

STUDY GOALS

- Ensuring coordination with existing planning processes and current projects
- Providing guidance for near-term decisions
- Developing sustainable agreements over time
- Ensuring flexibility
- Creating a fundable, feasible and phaseable project for the short, medium and long term
- Ensuring environmental enhancement, preservation and stewardship
- Gaining stakeholder acceptance
- Developing a well-designed solution

PROBLEM STATEMENT

The Highway 46 East Corridor needs to be upgraded to meet current and future travel demands. Previous failure to reach agreement on an improvement strategy between Caltrans, SLOCOG, the City of Paso Robles and the County of San Luis Obispo has resulted in lost funding and corridor preservation opportunities. Absent a strategy to reach agreement on complex issues and complete a required corridor study, negotiations between the four partner agencies have been stalled and the future of the Highway 46 East Corridor remains unclear.

STUDY ISSUES

Consistency/Certainty
There is a lack of consistency in the planning documents and visions of the various transportation agencies, thus a lack of agreement on identifying problems and solutions. This has led to difficulties in reaching concurrence on specific capital improvement needs. This lack of an identified improvement strategy has led to uncertainty for developers and has inhibited their willingness to participate financially. Developers have difficulty incorporating these uncertainties into their planning strategies. City and County staff have difficulty identifying, requiring or enforcing fair share contributions from developers.

Funding/Financing
Available and projected funds are insufficient to address all transportation needs in the corridor. Lack of defined problems and solutions may limit potential funding options. Therefore, all partner agencies will need to cooperate in efforts to prioritize transportation needs and develop appropriate funding strategies to address those needs.

Delay/Diversion
Highway 46 East is congested during peak periods resulting in traveler delay. During the most heavily traveled times, traffic can back up from US 101 to beyond Golden Hill Road. To avoid the congestion, some travelers divert off of the highway causing a burden to the local road system.

Safety
The actual collision rate on Highway 46E from Route 101 to Buena Vista Drive is higher than the statewide average for a comparable facility. The actual collision rates at the intersections of Highway 46 East with the US 101 southbound ramps, Buena Vista Drive, Golden Hill Road, Union Road, Airport Road, Jardine Road, and McMillan Canyon Road are higher than statewide averages for comparable facilities.

Growth
Population growth, both locally and statewide, has led to increased travel demand and congestion on Highway 46E.

The statewide population growth rate is 1.5% per year. (2000-2007 DOF Projections).
The County of San Luis Obispo has a growth rate of 1.0% per year.

Population growth within the City of Paso Robles has an approximate growth rate of 2.8% per year citywide.

The annual rate of growth of Average Annual Daily Traffic is 3.8% per year, measured just west of Airport Boulevard. In the latest ten-year period, this meant an overall increase of traffic of 145%.
Continued travel demand will only worsen the congestion, and continued local development along the corridor has potential to limit future opportunities for both highway and interchange improvements unless steps are taken now to preserve needed right of way for future improvements.

Level of Service (Operations)
The Caltrans acceptable level of service (LOS) threshold for Highway 46E is the "C/D" cusp. SLOCOG, SLO County and the City of Paso Robles support LOS D as the minimum threshold. SLO County supports LOS C in rural areas of the County. The acceptable LOS on the local road system within this corridor may differ. Currently, the intersections at the 101/46E interchange operate at LOS D during the weekday peak period and LOS F on the Friday peak period throughout the year. This condition results in upstream queuing that backs up traffic for nearly two miles two miles on many Friday afternoons, to approximately ¼ mile beyond Golden Hill Road. Additionally, the intersection at:

Golden Hill Road operates at LOS D throughout the year;
Union Road operates at LOS C during weekday peaks and LOS D during the Friday Afternoon peak
Airport Road operates at LOS D during weekday and Friday afternoon peak periods
Jardine Road operates at LOS C & D during weekday the afternoon peak, and LOS F during the Friday afternoon peak

Highway Daily Traffic Volumes and Peak Hour
Existing Average Daily Traffic (ADT) on Highway 46E east of Airport Road is 19,400 during non-summer months and increases approximately 18% to 22,900 during summer months.

"Peak hour" is defined as the interval of time during which the average daily traffic is heaviest. Over 6,000 hours of data were recorded on Highway 46 East between Airport Road and Jardine Road during the spring and summer of 2005. There is a lack of agreement among the four key partner agencies on selection of the Peak Hour Design Volume to be used for analysis.

For westbound travel, of the highest 200 hours recorded:
58% occurred on Friday afternoons (116 peak hours)
21.5% on Saturdays (43 peak hours)
13% on Sundays (26 peak hours)
7.5 % on Weekdays (15 peak hours)

For eastbound travel, of the highest 200 hours recorded:
60% occurred on Sundays (120 peak hours)
22% on Weekdays (44 peak hours)

16.5% on Fridays (33 peak hours)
1.5% on Saturdays (3 peak hours)

For Bi-Directional travel, of the highest 200 hours recorded:
41% occurred on Friday afternoons (82 peak hours)
36% on Sundays (72 peak hours)
17% on Weekdays (34 peak hours)
6% on Weekdays (12 peak hours)
Trucks comprise approximately 20% of the Annual Average Daily Traffic.

Design Standards
The current Highway 46 facility has non-standard features such as access spacing. The design standards differ based on facility type. The facility is currently an expressway, however, a Freeway Agreement executed in 1948 and modified in 1964, identifies the segment of Highway 46 within the Study limits as a future freeway. Within these limits, access rights are granted at eight public road connections: Buena Vista Drive (N), Golden Hill Road (N & S), Union Road (N & S), Airport Road (N), Mill Road (S), and Jardine Road (N). Any new access rights would require CTC approval.

Additional access points – not documented in previous Freeway Agreements - currently exist at 10 private roads or drives. These access points will also need to be addressed with the Study.

Current design standards for interchange spacing call for a one-mile separation of local street interchanges, with a two-mile separation required between a freeway-freeway connection and a local street interchange. Many of the access locations identified in the Freeway Agreement will not meet the spacing requirements for either freeway or expressway interchanges. As a result, this study will need to delineate between freeway and expressway standards where appropriate, and identify how and where design exceptions may need to be pursued if standards can not be met.

Appendix D Traffic Data Summary

D.1 Traffic Analysis Methodology

The Traffic Study consists of describing year 2005 "existing" traffic conditions and then evaluating year 2030 "future year" conditions by reviewing completed traffic studies done by consultants for proposed developments. The length of queue, delay, and diversion within the corridor study area were also analyzed. These characteristics were determined by the Study Team to be major concerns within the corridor.

In order to enhance the traffic analysis, the traffic study area limits were extended 20 miles east to the junction of State Route 41 and 46. For existing conditions, Caltrans and partner agency staff conducted comprehensive traffic counts in April, June, July, and August of 2005. The Fehr and Peers April 2007 *Golden Hill Retail Center Transportation Impact Analysis* was used for future year conditions. The study applied a 4.1% annual growth rate to the SR 46 corridor as requested by Caltrans, it should be noted that the terminology "annual growth rate" is incorrect. Describing the 4.1% as an annual growth gives the impression that 4.1% was compounded annually to the existing volume. This is not the case. It is a straight-line projection applied to the existing year and the amount is then added to each consecutive year. For example, the existing ADT for SR 46 north of Mill Road is 19,200 and the future ADT is 38,900. This number is calculated by multiplying the existing year (19,200) by 4.1% and then multiplying the product by 25 years and adding that amount to the existing year equals the future year {(19,200 x 4.1%)(25) + 19,200=38,880}. At this location, the 4.1% is equivalent to a growth of 790 vehicles per year.

The Friday peak hour was determined to be between 3:00 p.m. and 4:00 p.m. The Thursday peak hour was determined to be between 4:30 p.m. and 5:30 p.m. As can be seen in *Table D-3* there are a number of intersections that operate in the PM peak hour below LOS C. For purposes of this traffic study, the Friday June PM peak was used in the evaluation of the Baseline condition.

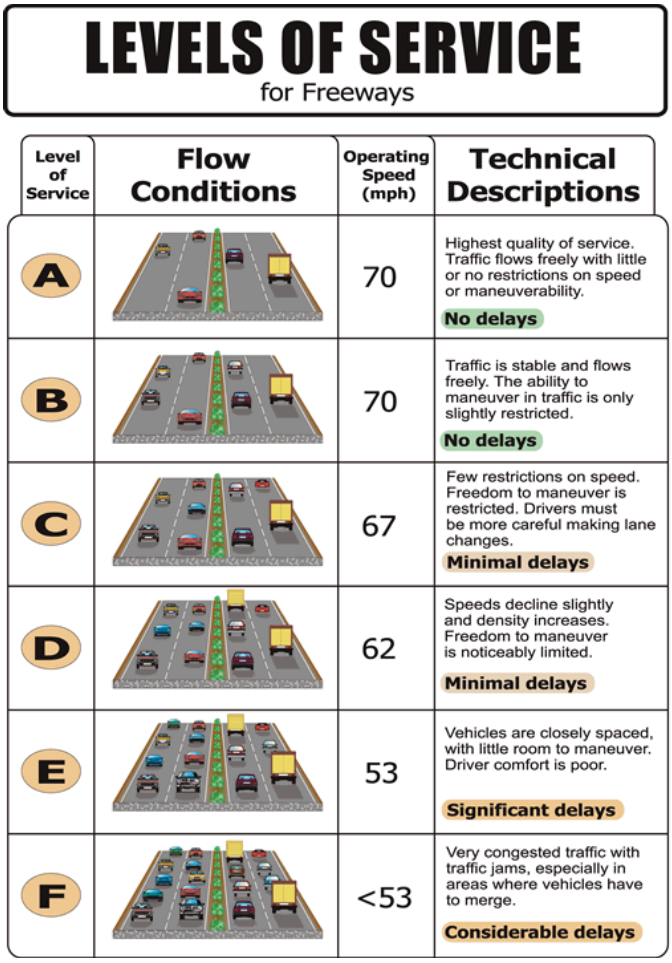
The ease with which a vehicle can travel in a given segment of highway is called the Level of Service (LOS). The operational conditions along a traffic corridor are measured based on factors such as speed, travel time, freedom to maneuver and traffic interruptions. The Highway Capacity Manual software (1994) bases the primary factor on the number of vehicles using a lane during the peak hour. There are six LOS ratings (A through F) with LOS A representing the best-case scenario and LOS F signifying congestion and forced flow (see *Figure D-1*). The LOS within the project area is based on the morning rush hour (AM Peak Period) northbound and the evening rush hour (PM Peak Period) southbound. The LOS decreased from 1989 to 2000, and is expected to deteriorate as the number of vehicles on the road increases. The performance of roadway sections and intersections was rated using Level of Service (LOS) methodology.

To document and evaluate existing traffic conditions, Caltrans and partner agency staff collected extensive traffic data using traffic counts, TACH (for tachometer) runs, field observations, and the Traffic Accident Surveillance and Analysis System (TASAS).

Mainline and turning movement counts were recorded on Hi-Star card counters on four dates in 2005: a Thursday and Friday in April and a Thursday and Friday in June. The April Thursday represented a typical day, while the June Friday included the peak hour period: late afternoon on a summer Friday. These counts were supplemented with additional counts of trucks, freeway ramp traffic, and side street volumes using a combination of card counters, hoses and manual counts. These data were used for level of service analyses of mainline conditions and operations at selected intersections between US 101 and the Wye (SR 46E/SR 41 Jct.). The data also provided for documentation of traffic diversion from the primary corridor.

TACH runs using the floating car method were conducted concurrent with the traffic volume counts in April and June 2005. The timed traffic runs provided for travel time analysis and, in combination with aerial photographs, for queue length measurements.

TASAS data were used to compare recent collision history on the SR 46E corridor with the average collision rates experienced during the same time period on facilities of the same type throughout the state.



LEVELS OF SERVICE
for Freeways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. **No delays**
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. **No delays**
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. **Minimal delays**
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. **Minimal delays**
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. **Significant delays**
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. **Considerable delays**

Figure D.1 Pictorial of the six levels of service (Mainline)

The Level of Service for an intersection is described in terms of delay per vehicle. As the delay increases, the number of vehicles stopping to wait for traffic increases. Eventually the LOS will decrease to a point where vehicles will sit through more than one signal cycle. This cycle failure at LOS E and F is noticeable and produces driver frustration. Refer to *Figure D.2* and *D.3* for graphics that summarizes the different Level of Service descriptions associated with intersections.

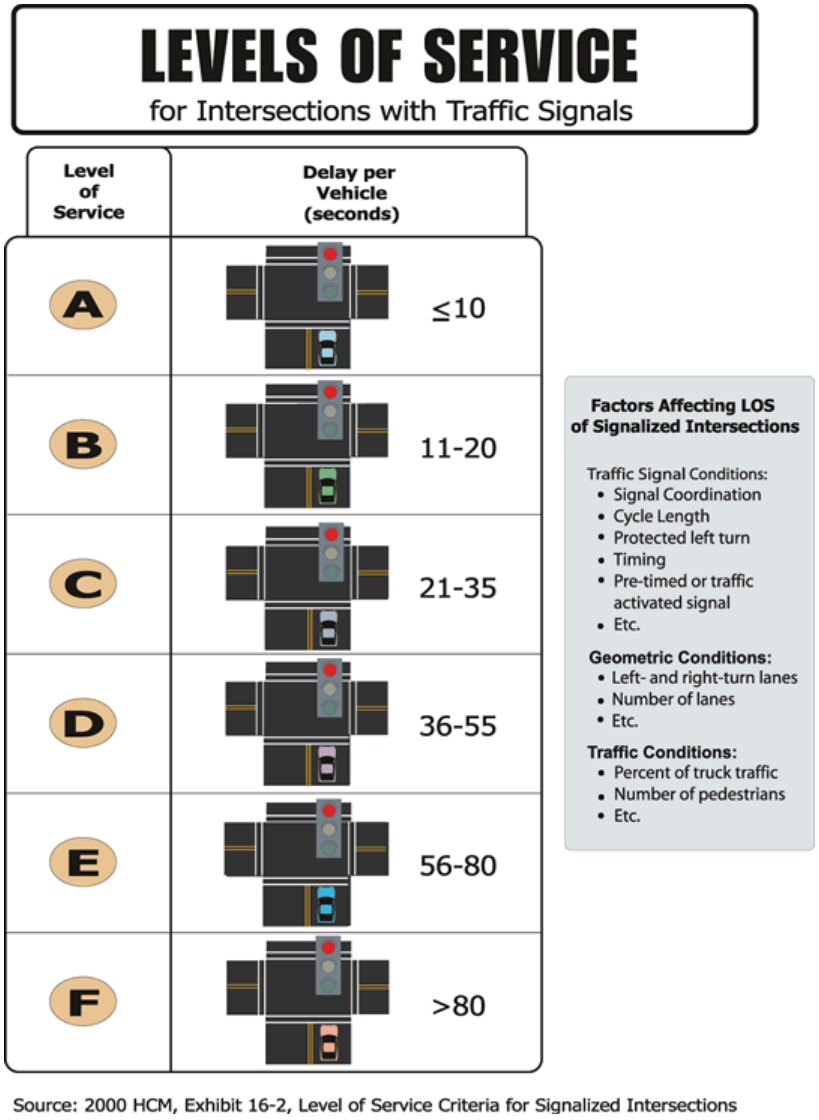


Figure D.2 Level of service for Intersections with Traffic Signals[3]

[3] Highway Capacity Manual, Transportation Research Board, National Research Council

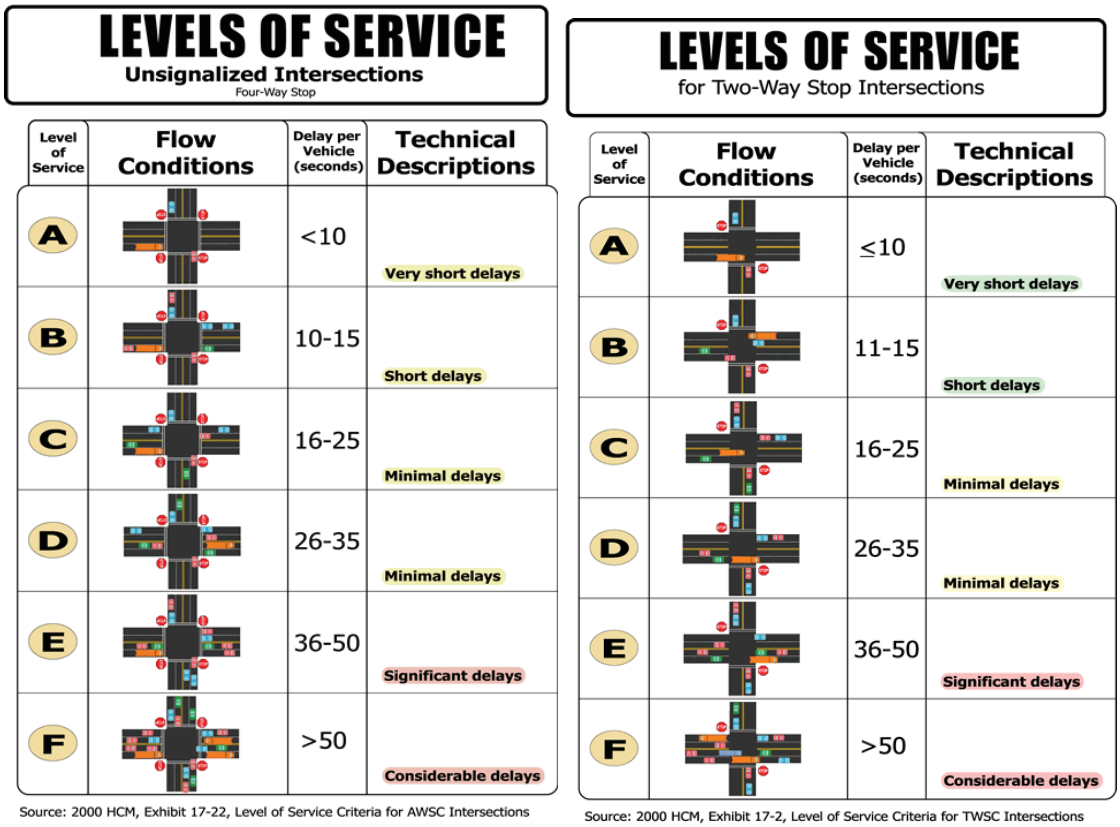


Figure D.3 Level of service for Intersections with Traffic Signals[4]

D.2 Existing Traffic Condition

The primary traffic concerns include mainline congestion, delay, and impacts to the local road system. During the most heavily traveled times, the demand for the left-turn movement at the intersection of the SR 46E/US101 southbound ramp exceeds capacity thus operating poorly and causing westbound traffic approaching US Route 101 to form a queue nearly two miles long. The upstream queuing ultimately affects the operations of the intersections along SR 46E all the way to Golden Hill Road, and sets up a pattern of diversion back to Airport Road. The signals at the intersections of SR46 with Golden Hill Road and Buena Vista Drive are causing an impact on the local road system since local movement is sharing green time with main through movement. The intersections of Union Road, Jardine Road and McMillian Road with SR 46E are operating poorly due to the decreased merging and crossing opportunities caused by the reduction in the number of acceptable gaps along SR 46E.

Trucks comprise approximately 20% of the Annual Average Daily Traffic.

[4] Highway Capacity Manual, Transportation Research Board, National Research Council

Table D.1 Existing Average Daily Traffic on SR 46

SR 46E - AVERAGE DAILY TRAFFIC (ADT)			
	US 101 to Airport Rd.	**Airport Rd. to Jardine Rd.**	**Jardine Rd. To SR 41 N "Y"**
Yr. 2006	25,600	21,200	12,350

Traffic Operations

Traffic conditions on a non-freeway facility such as SR 46E are typically analyzed by evaluating traffic flow on the mainline and control delay at intersections. In some settings, signalized intersections fail to clear during individual cycles causing queues that control the flow of mainline traffic between intersections.

Existing Mainline Traffic Operations

Operations in the SR 46 segment between US 101 and Airport Road are controlled by the signal operation. See *Table D.3* for LOS conditions. The Golden Hill Retail Center Transportation Impact Analysis included unconstrained mainline analysis for SR46 and this segment would operate at LOS C (see *Table D.12*). The intersections are causing the mainline to operate poorly in the PM peak hour.

The segment from Airport Road to the SR 46E/41N junction is a two-lane undivided highway with side street intersections under stop control. This segment is currently operating at peak hour LOS C to LOS E conditions, as shown in *Table D.2* and it should be noted that all sections of this segment currently operate at or below LOS C/D during the PM peak, Caltrans standard for acceptable operations.

Table D.2 Existing Mainline Traffic Conditions Based on Counts from 2005

EXISTING TRAFFIC CONDITIONS:
MAINLINE ROUTE 46 BETWEEN AIRPORT AND THE 46/41 NORTH JUNCTION

			AIRPORT ROAD	JARDINE ROAD	McMILLAN CYN. ROAD	46/41 NORTH SPLIT (WYE)	
APRIL	THURSDAY	AM	LOS D	LOS D	LOS C		RTE. 46
		PM	LOS E	LOS D	LOS D		RTE. 46
JUNE	THURSDAY	PM	LOS E	LOS D	LOS D		RTE. 46
	FRIDAY	PM	LOS E	LOS E	LOS E		RTE. 46

Existing Intersection Traffic Operations

From west to east, the major intersections from US Route 101 to the SR 41 junction are:

- Buena Vista Drive
- Golden Hills Road
- Union Road
- Airport Road
- Jardine Road
- McMillan Road
- SR 46E/41S Junction

Table D.3 Existing intersection conditions Based on Counts from 2005

EXISTING CONDITIONS: INTERSECTION TRAFFIC OPERATION

Post Miles					30.51	31.31	31.8	32.15	34.64	45.48	48.62
Distance Between Junctions (In Miles)					0.75	0.8	0.49	0.35	2.49	10.84	3.12
ROUTE 46					S/B Off / S/B On	N/B On / N/B Off	Vista / Buena	Hill / Golden	Union	Airport	Jardine / McMillan / 41 S
Control Type					Signal	Signal	Signal	Signal	TWSC	TWSC	TWSC	TWSC	TWSC
APRIL	THURSDAY	AM	LOS		C	C	B	D	C	B	C	B	B
			Average Delay (Sec/Veh)		23.1	31.8	15.4	54.0	16.7	12.0	23.2	13.6	10.4
		PM	LOS		C	C	C	D	C	D	C	C	B
			Average Delay (Sec/Veh)		27.5	21.1	24.4	36.3	17.8	25.1	22.3	16.7	10.9
JUNE	THURSDAY	PM	LOS		D	D	C	D	C	D	D	D	B
			Average Delay (Sec/Veh)		45.0	35.2	21.2	42.6	19.4	27.8	27.5	27.8	13.5
	FRIDAY	PM	LOS		F	F	C	D	D	D	F	F	C
			Average Delay (Sec/Veh)		130.9	99.5	33.5	51.5	28.6	26.5	165.5	127.6	19.7

TWSC = Two way Stop Control

As *Table D.3* shows, the majority of intersections in the study area (intersections with US 101, Golden Hill Road, Union Road, Airport Road and Jardine Road) operate below LOS C in the Friday June PM peak periods. The intersection of SR 46E and US 101 is especially problematic at the southbound on-ramp, which operates at LOS F during the Friday PM peak period. As mentioned before, the demand for the left-turn movement from SR 46E exceeds capacity, resulting in upstream queuing ultimately affecting operations of the intersections all the way to the intersection with Golden Hill Road and setting up a pattern of diversion back to Airport Road intersection. A currently programmed project, Operational Improvements Route 101/46E (EA 36150), proposes dual westbound left turn lanes at the intersection of SR 46E and the Route 101 southbound on-ramp.

Existing Diversion Patterns

A diversion pattern happens when a vehicle that would otherwise use a primary facility chooses to use a lesser route due to problems on the primary route. Field observations of traffic flow within the corridor showed that there is traffic diverting to other routes to avoid the queuing at the US Route 101/SR 46E interchange. Observations show Golden Hill Road, the US Route 101/SR 46E interchange, and to a lesser degree Union Road, are diversion points.

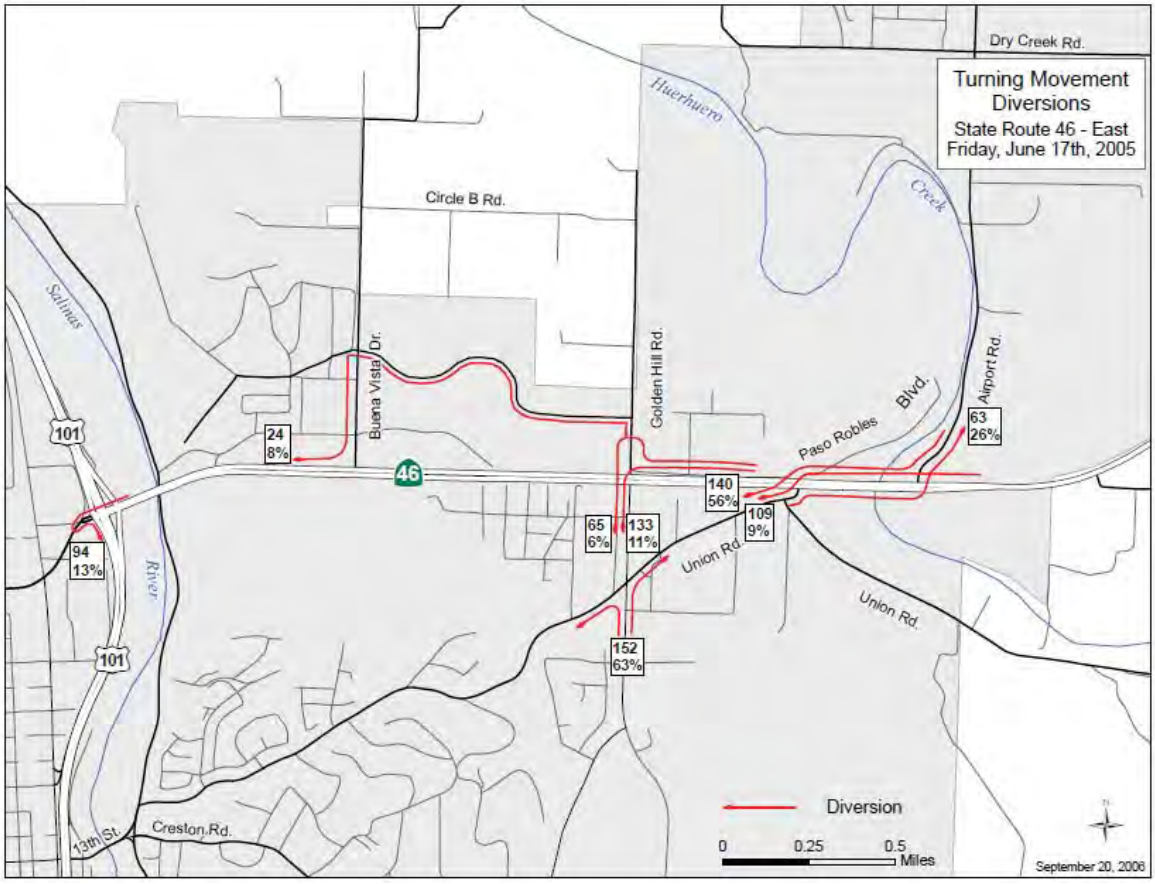
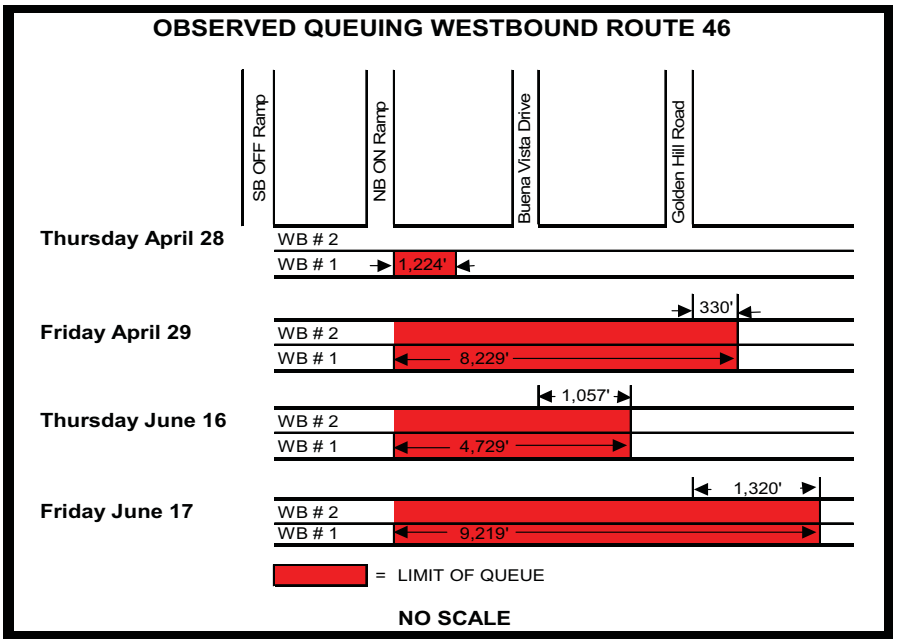


Figure D.4 Existing Diversion Patterns

Delay and Queuing

Field observations during data collection for the existing conditions analysis revealed westbound queuing during peak hours as well as traffic diversions to avoid queuing. Field observations and travel time data indicate that queuing in the westbound direction of SR 46E in the PM peak is a regular occurrence. The queuing observed in the field varies by day and time of year, but generally follows the pattern shown in Table D.4.

Table D.4 Observed queue on westbound SR 46



The analysis of the westbound queue made use of data collected in TACH runs. Staff calculated the average time it took a vehicle traveling westbound on SR 46E from the Airport Road intersection to reach the US 101 southbound on-ramp. Travel times and other observations describing westbound queues are displayed in *Table D.5*.

Table D.5 Queue Length & Travel

QUEUE LENGTH AND TRAVEL TIME				
Date of Observation	Travel Time (minutes)	Total Vehicles in Queue (feet)	Vehicles per Lane	Length of Queue (feet)
Thursday, April 28	6	33	33 *	1,224
Friday, April 29	25	444	222	8,229
Thursday, June 16	14	256	128	4,729
Friday, June 17	32	498	249	9,219

** The #1 lane only, #2 lane had no queue*

The average distance between front bumpers of vehicles waiting in the queue was 37 feet. This distance was determined by using aerial photographs taken by the California Highway Patrol and manual counts.

D.3 Existing Collision Data

Collisions

Collision data was retrieved for a 3-year period between January 1, 2005 and December 31, 2007. A summary of this data is presented in *Tables D.6* and *D.7*. At the locations summarized below these areas have a higher than statewide average for collisions.

Collision concentrations have been identified in several locations within the study limits. Most of these accidents are due to traffic congestion, speeding and improper lane changes or turning movements. The accident concentrations identified below currently exceed the state wide average for similar facilities.

As evidence of the types of collisions (rear-end and sideswipe collisions) for this section of SR 46E, congestion or poor operations at the intersections are the primary cause.

Table D.6 Collision Data on the Mainline

MAINLINE COLLISIONS								
Segment		Number of Collisions	Actual Collision Rate			Statewide Average		
From	To		Fatalities	Fatalities + Injuries	Total	Fatalities	Fatalities + Injuries	Total
US Route 101 PM 29.76	Buena Vista PM 30.51	60	.047	0.94	2.81	0.018	0.62	1.35
Buena Vista PM 30.51	Golden Hill PM 31.31	34	0.00	0.27	1.55	0.018	0.62	1.35
Golden Hill PM 31.31	Union PM 31.80	20	0.00	0.38	1.51	0.018	0.62	1.35
Union PM 31.80	Airport PM 32.15	6	0.00	0.33	0.65	0.017	0.59	1.29
Airport PM 32.15	Jardine PM 34.64	13	0.00	0.02	0.25	0.023	0.29	0.62
Jardine PM 34.64	McMillan Canyon PM 45.48	64	0.021	0.10	0.34	0.023	0.28	0.60
McMillan Canyon PM 45.48	SR 46 W Jct. PM 48.62	12	0.022	0.09	0.26	0.023	0.28	0.60

Table D.7 Summary of Intersection Collision Data

Summary of Collision Data from Jan 2005- Dec 2007							
		Actual Collision Rate			Statewide Average		
Ramps and Intersection	**Number of Collisions**	**Fatalities**	**Fatalities + Injuries**	**Total**	**Fatalities**	**Fatalities + Injuries**	**Total**
Along and Intersection Route 101 SB On Ramp	1	0.00	0.00	***0.08***	0.002	0.32	0.80
Along and Intersection Route 101 NB Off Ramp	5	0.00	0.23	***0.39***	0.005	0.61	1.50
Along Route 101 NB On Ramp	1	0.00	0.00	***0.22***	0.003	0.22	0.60
Along Route 101 SB off Ramp	10	0.00	0.56	***1.88***	0.005	0.61	1.50
Intersection Route 46/Rte 101 NB Ramps	32	0.00	0.28	***1.00***	0.002	0.19	0.43
Buena Vista PM 30.51	15	0.00	0.04	***0.53***	0.001	0.06	0.14
Golden Hill PM 31.31	34	0.00	0.29	***1.23***	0.002	0.19	0.43
Union PM 31.80	13	0.00	0.11	***0.47***	0.002	0.10	0.22
Airport PM 32.15	9	0.00	0.20	***0.36***	0.001	0.06	0.14
Jardine PM 34.64	11	0.00	0.18	***0.49***	0.004	0.10	0.22
McMillan Canyon PM 45.48	8	0.00	0.33	***0.52***	0.008	0.16	0.33
JCT Rte 46W PM 45.48	2	0.00	0.00	***0.13***	0.004	0.10	0.22

D.4 Future Traffic Conditions

Approved traffic studies show that without any improvements SR46 between US101 and Jardine Road will reach a LOS of F by 2010 in the PM peak hour (*Table D.17*).

Table D.8 Future Average Daily Traffic

SR 46E - AVERAGE DAILY TRAFFIC (ADT)			
	US 101 to Airport Rd.	**Airport Rd. to Jardine Rd.**	**Jardine Rd. To SR 41 "Y"**
Yr. 2030	50,980	37,700	21,200

Traffic Operation

The Caltrans Traffic Operations branch completed a review and analysis of various traffic data for SR 46E within the Corridor Study Limits. This review covers the segment of SR 46E between US Route 101 (05-SLO-46-PM 29.761) and Jardine Road (05-SLO-46-PM 34.641). Documents reviewed included the Omni-Means June 29, 2006 Airport Road Traffic Study, City of Paso Robles June 2006 Commercial/Industrial Status Report, and the City of Paso Robles City Council/Planning Commission Agenda's and Minutes. The results of the review are summarized below.

State SR 46E Corridor

The June 29, 2006 Airport Road Project Study Report (PSR) Final Traffic Study prepared by Omni–Means for the City of Paso Robles concludes that a six-lane freeway is needed by the Year 2040. Caltrans Traffic Operations branch concurs with this finding.

Airport Road

Page 30 of the Airport Road Project Study Report (PSR) June 29, 2006 Final Traffic Study states the following:

> "The SR 46E/Airport Road connection, when constructed with shared through-right turn lanes at the north and southbound approaches, is projected to transition from LOS "C" to "D" by the Year 2016."

Based on the revised counts, a revised level of service (LOS) analysis has been performed to determine if a signal would be practical at Airport Road assuming a new public road connection. The conclusion of the analysis is that the Department's level of service standard of "C/D" Cusp cannot be met at this location under a signal alternative. Under this analysis, opening day has been projected to occur by the Year 2010. In the Year 2010, the intersection would operate at LOS "D" (Delay = 45.7 sec/veh) during the Friday PM peak hour and transition from LOS "C" to "D" (Delay = 35.6 sec/veh) by the Year 2011 during the Thursday PM peak hour. *Table D.9* lists the results of the analysis.

Table D.9 Level of Service Analysis SR46 East & Airport Road

SR 46E & AIRPORT RD. INTERSECTION LEVEL OF SERVICE (LOS) ANALYSIS						
SR 46E & Airport Road	Omni Means 6/29/06 Friday PM Peak	Omni Means 6/29/06 Friday PM Peak	Caltrans Revised Friday PM Peak	Caltrans Revised Friday PM Peak	Caltrans Revised Thursday PM Peak	Caltrans Revised Thursday PM Peak
Year	LOS	Delay	LOS	Delay	LOS	Delay
2010	C	33.7	D	45.7	C	34.9
2011	C	34.0	D	46.7	D	35.6
2015	C	34.9	D	51.5	D	37.6
2016	D	36.9	D	53.4	D	38.5
2020	D	45.7	E	59.0	D	40.6

1 LOS = Level of Service. LOS calculations conducted using the TRAFFIX software for unsignalized (stop-controlled) intersections and the SYNCHRO software for signalized intersections.
2 AM = morning peak hour, PM = afternoon peak hour
3 Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in the 2000 HCM. For side street stop controlled intersections, total control delay for the worst movement is presented.
4 The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersections were Not evaluated for Friday PM conditions.

Six Lane Expressway

Geometric design of new facilities and reconstruction projects are based upon estimated traffic volumes derived for 20 years after completion of construction or a 20-Year design life. Caltrans Traffic Operations evaluated the concept of a six-lane expressway and have concluded that a six-lane expressway on State SR 46E (Between Hwy 101 and Jardine Road) cannot sustain a 20-Year design life. Based upon the revised traffic, the level of service analysis indicates a six-lane expressway would fall below the Department's level of service threshold of "C/D" Cusp by the Year 2020 assuming a Friday scenario. Under a typical weekday scenario, a six-lane expressway would fall below the Department's level of service threshold of "C/D" Cusp by the Year 2026. The levels of service analysis results are provided in *Tables D.10* and *D.11*.

Table D.10 Level of Service SR 46East & Airport Road

SR 46E & AIRPORT ROAD INTERSECTION LEVEL OF SERVICE (LOS) ANALYSIS Six Lane Expressway Scenario				
SR 46E & Airport Road	Caltrans Revised Friday PM Peak	Caltrans Revised Friday PM Peak*	Caltrans Revised Thursday PM Peak	Caltrans Revised Thursday PM Peak*
Year	LOS	Delay	LOS	Delay
2020	D	35.3	C	29.3
2025	D	43.2	C	32.5
2030	E	73.1	D	49.3
**Note: Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in 2000 HCM. For side street stop controlled intersections.*				

Table D.11 Level of Service SR 46East & Golden Hill Road

SR 46E & GOLDEN HILL ROAD INTERSECTION LEVEL OF SERVICE (LOS) ANALYSIS Six Lane Expressway Scenario				
SR 46E & Golden Hill Road	Caltrans Revised Friday PM Peak	Caltrans Revised Friday PM Peak*	Caltrans Revised Thursday PM Peak	Caltrans Revised Thursday PM Peak*
Year	LOS	Delay	LOS	Delay
2020	D	37.7	C	30.7
2025	D	47.7	C	34.1
2030	E	71.2	D	43.9
**Note: Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in 2000 HCM. For side street stop controlled intersections.*				

GOLDEN HILL RETAIL CENTER TRANSPORTATION IMPACT ANALYSIS
APRIL 2007 (FEHR & PEERS)

In addition, data from the Traffic Study done for the Golden Hill Retail Center, an approved project within the City of Paso Robles along Golden Hill Road just north of SR 46E, was looked at. The following data and analysis in this section is taken from the Golden Hill Retail Center Transportation Impact Analysis, April 2007:

Table D.12 Existing Roadway LOS

EXISTING ROADWAY LEVELS OF SERVICE			
Roadway Segment	**Roadway Type**	**Volume***	**LOS****
1. SR 46E, between US 101 and Airport Road	4-Lane Divided Arterial	25,500	C
2. SR 46E, east of Airport Road	2-Lane Undivided Highway	19,200	D
3. US 101, north of SR 46E to south of SR 46W	4-Lane Divided Freeway	63,000	D
4. Golden Hill Road, between Dallons Road and SR 46	4-Lane Divided Arterial	9,000	B
5. Dallons Road, west of Golden Hill Road	2-Lane Collector (no left turn lane)	1,500	A

Notes:
* Average daily traffic. Note volume reported is the maximum volume on the given roadway segment within the project study area.
** LOS = Level of Service

Table D.13 Cumulative Roadway LOS (2010)

NEAR-TERM (2010) CUMULATIVE ROADWAY LEVELS OF SERVICE			
Roadway Segment	**Roadway Type**	**Volume***	**LOS****
1. SR 46E, between US 101 and Airport Road	4-Lane Divided Arterial	37,800	F
2. SR 46E, east of Airport Road	2-Lane Undivided Highway	27,200	F
3. US 101, north of SR 46E to south of SR 46W	4-Lane Divided Freeway	72,500	D
4. Golden Hill Road, between Dallons Road and SR 46	4-Lane Divided Arterial	21,500	A
5. Dallons Road, west of Golden Hill Road	2-Lane Collector (no left turn lane)	4,000	A

Notes:
** Average daily traffic. Note volume reported is the maximum volume on the given roadway segment within the project study area.*
*** LOS = Level of Service*

Table D.14 Cumulative Roadway LOS (2030)

CUMULATIVE (2030) ROADWAY LEVELS OF SERVICE			
Roadway Segment	**Roadway Type**	**Volume***	**LOS****
1. SR 46E, between US 101 and Airport Road	4-Lane Divided Arterial	60,500	F
2. SR 46E, east of Airport Road	4-Lane Divided Arterial	43,000	F
3. US 101, north of SR 46E to south of SR 46W	4-Lane Divided Freeway	80,800	F
4. Golden Hill Road, between Dallons Road and SR 46	4-Lane Divided Arterial	33,000	E
5. Dallons Road, west of Golden Hill Road	2-Lane Collector (no left turn lane)	4,700	A

Notes:
* Average daily traffic. Note volume reported is the maximum volume on the given roadway segment within the project study area.
** LOS = Level of Service

Table D.15 Existing Intersection LOS

EXISTING INTERSECTIONS LEVELS OF SERVICE *				
Roadway Intersection	**Peak Hour**	**Intersection control**	**Exist Delay**	**Exist LOS**
1. SR 46E/US 101 SB Ramps	AM PM Friday PM	Signal	23.4 30.5 119.8	C C F
2. SR 46E/US 101 NB Ramps	AM PM Friday PM	Signal	31.1 31.3 72.7	C C E
3. SR 46E/Buena Vista Drive	AM PM Friday PM	Signal	18.1 14.6 15.8	B B B
4. SR 46 E/Golden Hill Road	AM PM Friday PM	Signal	>150 90.3 >150	F F F
5. SR 46E/Union Road	AM PM Friday PM	Side-Street Stop	71.9 >150 >150	F F F
6. SR 46E/Airport Road	AM PM Friday PM	Side-Street Stop	14.3 74.8 >150	B F F
7. SR 46E/Mill Road	AM PM Friday PM	Side-Street Stop	29.0 53.6 120.9	D F F
6. SR 46E/Jardine Road	AM PM Friday PM	Side-Street Stop	28.4 78.5 >150	D F F

Notes:
* Average daily traffic. Note volume reported is the maximum volume on the given roadway segment within the project study area.
** LOS = Level of Service

It should be noted, according to the Golden Hill Retail Center Transportation Impact Analysis, Existing Volumes and Lane Configurations that *"Year 2005 summertime weekday morning (AM), weekday evening (PM), and Friday evening (Friday PM) peak-hour traffic volumes at the SR 46 study intersections were obtained from the Final SR 46 E/Airport Road PSR. The volumes on SR 46 represent unconstrained volumes on SR46 provided that sufficient capacity is available at Highway 101/SR46 interchange and traffic does not divert from SR46 to the side streets. The Year 2005 volumes turning to/from SR46 to Golden Hill and Airport Road were adjusted to reflect the more recent traffic counts that were higher."*

Table D.16 Near-Term (2010) Cumulative Intersection Level of Service (Part 1)

NEAR-TERM (2010) CUMULATIVE INTERSECTION LEVEL OF SERVICE										
Intersection	**Peak Hour**	**Near-term Cumulative (Existing Roadway Geometry)**		**Mitigated Near-term Cumulative (with Existing Plus Project Mitigation)**			**Mitigated Near-term Cumulative (with Existing Project and Additional Mitigation)**			**% Of Project Traffic***
		Delay	**LOS**	**Delay**	**LOS**	**Improvement**	**Delay**	**LOS**	**Improvement**	
1. SR46E/ US 101 SB Ramps	AM PM Friday Peak	35.1 >150 >150	C F F	20.1 36.8 61.7	C D E	Add 2nd westbound left-turn lane, re-stripe eastbound approach	21.6 25.1 60.2	C C E	Re-optimization of the signal timings	6 7 6
2. SR 46E/ US 101 NB Ramps	AM PM Friday Peak	>150 >150 >150	F F F	89.5 63.7 85.5	E E F	Add 3rd and 4th westbound through lane	27.1 25.7 33.8	C C C	Add dual northbound right-turn lanes	7 8 7
3. SR 46E/ Buena Vista Drive	AM PM Friday Peak	20.5 80.4 130.5	C F F	No Mitigation Required			12.7 20.7 31.3	B C C	Add westbound right-turn lane; Add 2nd eastbound left-turn lane	6 7 8
4. SR 46E/ Golden Hill Rd.	AM PM Friday Peak	>150 >150 >150	F F F	51.6 93.6 131.8	D F F	Widen intersection and update signal phasing	42.3 57.6 77.0	D E E	Add 3rd eastbound and westbound through lane	11 14 13
4a. SR 46E/ Union Rd.	AM PM Friday Peak	>150 >150 >150	F F F	>150 33.4 63.2	F D F	Prohibit northbound left-turn	16.5 22.6 32.9	C C D	Add eastbound acceleration lane for northbound right turn	5 5 5
4b. SR 46E/ Airport Rd.	AM PM Friday Peak	>150 >150 >150	F F F	>150 >150 >150	F F F	Widen SR 56 to 4 lanes and add southbound tight-turn lane				
5. SR 46EB Ramps/ Airport Rd.	AM PM Friday Peak						16.4 9.8 9.9	C A A	Grade Separation/ Interchange (stop sign controlled)	4 5 5

**Percent of projected traffic was calculated by dividing the project trips over the total intersection volume.*
*** The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersection were not evaluated for Friday PM conditions*
Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in 2000 HCM. For side street stop controlled intersections.

Table D.17 Near-Term (2010) Cumulative Intersection Level of Service (Part 2)

NEAR-TERM (2010) CUMULATIVE INTERSECTION LEVEL OF SERVICE										
Intersection	**Peak Hour**	**Near-term Cumulative (Existing Roadway Geometry)**		**Mitigated Near-term Cumulative (with Existing Plus Project Mitigation)**			**Mitigated Near-term Cumulative (with Existing Project and Additional Mitigation)**			**% Of Project Traffic***
		Delay	**LOS**	**Delay**	**LOS**	**Improvement**	**Delay**	**LOS**	**Improvement**	
6b. SR46 WB Ramps/ Airport Rd	AM PM Friday Peak						14.7 12.2 12.4	B B B	Grade Separation/ Interchange (stop-sign controlled)	4 5 5
1. SR 46E/ Mill Rd	AM PM Friday Peak	72.4 >150 >150	F F F	No Mitigation Required						
2. SR 46E/ Jardine Rd	AM PM Friday Peak	72.4 80.4 130.5	F F F	19.9 27.5 43.0	C D E	Widen SR 46 to 4 lanes	N/A N/A N/A	N/A N/A N/A	No additional mitigation required	7 7 6
3. Golden Hill Rd/ Union Rd. **	AM PM Friday Peak	>150 >150 N/A	F F N/A	51.6 93.6 131.8	D F F	Construct Single-lane roundabout	4 4 N/A	A A N/A	Widen single-lane roundabout to two lanes	8 10 N/A
10. Buena Vista Dr/ Dallons Rd.	AM PM Friday Peak	No Mitigation Required								
11. Golden Hill Rd/ Dallons Rd	AM PM Friday Peak	25.7 13.9 N/A	D B N/A			No Mitigation Required				

**Percent of projected traffic was calculated by dividing the project trips over the total intersection volume.*
*** The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersection were not evaluated for Friday PM conditions*
Whole intersection weighted average control delay expressed in seconds per vehicle using methodology described in 2000 HCM. For side street stop controlled intersections.

Table D.18 Cumulative Intersection (2030) Level of Service (Part 1)

CUMULATIVE INTERSECTION (2030) LEVEL OF SERVICE										
Intersection	**Peak Hour**	**Near-term Cumulative (Existing Roadway Geometry)**		**Mitigated Near-term Cumulative (with Existing Plus Project Mitigation)**			**Mitigated Near-term Cumulative (with Existing Project and Additional Mitigation)**			**% Of Project Traffic***
		Delay	**LOS**	**Delay**	**LOS**	**Improvement**	**Delay**	**LOS**	**Improvement**	
1. SR46E/ US 101 SB Ramps	AM PM Friday Peak	32.6 97.7 >150	C F F	31.9 100.3 >150	C F E	Re-optimization of the signal timings	Conversion of SR 46 to 4-lane freeway with new direct connection to US 101. Design to be determined as part of future studies			4 5 4
2. SR 46E/ US 101 NB Ramps	AM PM Friday Peak	>150 >150 >150	F F F	80.4 120.2 >150	E E F	Add dual northbound right-turn lanes	Conversion of SR 46 to 4-lane freeway with new direct connection to US 101. Design to be determined as part of future studies			4 5 4
3. SR 46E/ Buena Vista Drive	AM PM Friday Peak	N/A N/A N/A	N/A N/A N/A	96.6 >150 >150	F F F	Add westbound right-turn lane; Add 2nd eastbound left-turn lane	Close Buena Vista Drive with conversion of SR 46 to freeway			4 5 5
4. SR 46E/ Golden Hill Rd.	AM PM Friday Peak	>150 >150 >150	F F F	96.6 >150 >150	F F F	Add 3rd eastbound and westbound through lane				8 10 9
4a. SR 46 WB ramps/ Golden Hill Rd.	AM PM Friday Peak						43.9 54.7 58.3	D D E	Grade separated interchange	8 10 9
4b. SR 46 EB ramps/ Golden Hill Rd.	AM PM Friday Peak						100.3 43.9 45.5	F D D	Grade separated interchange	8 10 9
5. SR 46E / Union Rd.	AM PM Friday Peak	Close Union Road with conversion of SR 46 to Freeway								

*Percent of projected traffic was calculated by dividing the project trips over the total intersection volume.
** The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersection were not evaluated for Friday PM conditions

Table D.19 Cumulative Intersection (2030) Level of Service (Part 2)

CUMULATIVE INTERSECTION (2030) LEVEL OF SERVICE										
Intersection	Peak Hour	Near-term Cumulative (Existing Roadway Geometry)		Mitigated Near-term Cumulative (with Existing Plus Project Mitigation)			Mitigated Near-term Cumulative (with Existing Project and Additional Mitigation)			% Of Project Traffic*
		Delay	LOS	Delay	LOS	Improvement	Delay	LOS	Improvement	
6. SR46E/ Airport Rd	AM	>150	F							3
	PM	>150	F							3
	Friday Peak	>150	F							3
6a. SR 46E WB ramps/ Airport Rd.	AM			>150	F	Grade separated interchange (unsignalized)	14.0	B	Grade separated interchange (signal)	3
	PM			>150	F		42.0	D		3
	Friday Peak			>150	F		53.9	D		3
6b. SR 46E EB ramps/ Airport Rd.	AM			>150	F	Grade separated interchange (unsignalized)	25.5	C	Grade separated interchange (signal)	3
	PM			>150	F		14.3	B		3
	Friday Peak			>150	F		15.1	B		3
7. SR 46E/ Mill Rd	AM	Close Mill Road with conversion of SR 46 to Freeway								
	PM									
	Friday Peak									
8. SR 46E/ Jardine Rd	AM	>150	F	Widen SR 46 to 4 lanes						4
	PM	>150	F							4
	Friday Peak	>150	F							3
8a. SR 46 WB ramps/ Jardine	AM						9.8	A	Grade separated interchange (unsignalized)	4
	PM						8.6	A		4
	Friday Peak						11.1	B		3
8b. SR 46 EB ramps/ Jardine	AM						7.6	A	Grade separated interchange (unsignalized)	4
	PM						8.2	A		4
	Friday Peak						7.9	A		3

Table D.20 Cumulative Intersection (2030) Level of Service (Part 3)

CUMULATIVE INTERSECTION (2030) LEVEL OF SERVICE										
Intersection	**Peak Hour**	**Near-term Cumulative (Existing Roadway Geometry)**		**Mitigated Near-term Cumulative (with Existing Plus Project Mitigation)**			**Mitigated Near-term Cumulative (with Existing Project and Additional Mitigation)**			**% Of Project Traffic***
		Delay	**LOS**	**Delay**	**LOS**	**Improvement**	**Delay**	**LOS**	**Improvement**	
9. Golden Hill/Union Rd.	AM	>150	F	6	A	Widen single-lane roundabout to 2 lanes	No Mitigation Required			6
	PM	>150	F	6	A					7
	Friday Peak	N/A	N/A	N/A	N/A					N/A
10. Buena Vista/ Dallons	AM	25.7	D	80.4	E	No Mitigation Required				
	PM	13.9	B	120.2	E					
	Friday Peak	N/A	N/A	>150	F					
11. Golden Hill/ Dallons	AM	69.7	F	No Mitigation Required			12.4	B	Signalized Intersection	8
	PM	63.1	F				16.6	B		11
	Friday Peak	N/A	N/A				N/A	N/A		N/A

**Percent of projected traffic was calculated by dividing the project trips over the total intersection volume.*
*** The analysis of Friday PM peak-hour is to evaluate the effects of regional through traffic for intersections on SR 46. Local city intersection were not evaluated for Friday PM conditions*

D.5 Final Assessment

Existing traffic studies indicate the need for a future expanded SR 46E facility, which includes grade-separated access points and fewer at-grade signalized intersections.

Prior to the Golden Hill Center Traffic Report, Caltrans Traffic Operations Branch also evaluated this corridor using, and the results concur with the results from the Golden Hill Report. The concept of a six-lane expressway was evaluated and they concluded that a six-lane expressway on State SR 46E (Between Hwy 101 and Jardine Road) cannot sustain a 20-Year design life. Based upon the revised traffic, the level of service analysis indicates a six-lane expressway would fall below the Department's level of service threshold of "C/D" Cusp by the Year 2020 assuming a Friday scenario. Under a typical weekday scenario, a six-lane expressway would fall below the Department's level of service threshold of "C/D" Cusp by the Year 2026. The City has a threshold of LOS D. The team agreed that this corridor would reach LOS F before funding for scenario improvements would be available. The levels of service analysis results are provided in *Tables D.10* and *D.11* of *Appendix D*.

Caltrans Traffic Operation Department and the City's lead traffic studies conclude the need for a future expanded SR 46E facility, which includes grade-separated access points and a plan to address the failing at-grade signalized intersections. The improvement scenarios need to include intermediate projects that move the facility toward the facility that provides the capacity requirements as the City develops and interregional travel demand increases.

The study team agreed that this corridor would require grade separations and interchanges in the long term and the importance of establishing a plan of short and mid-term phases that work towards the long-term plan that would accommodate the mobility needs of all users of this corridor.

The City of Paso Robles is currently in the process of conducting a State Route (SR 46E) Parallel Routes study, which looks at possible local road connections that could relieve congestion and improve connectivity of the local street network, as well as SR 46E through Paso Robles. Study finding will be used in guiding the update of the City's Circulation Element, which is expected to be complete in 2009.

Existing traffic studies do not address local circulation improvements, which could affect the level of service at some intersections.

Appendix E Comments and Responses

Comments were received on the Draft Route 46 East Comprehensive Corridor Study from the public in the form of e-mail messages, website communication, and in workshop comment cards from the March 11, 2009 public workshop/open house.

All of the comments received are included in this chapter. They are presented in their original form and formal responses are included. Comments and responses are organized by type and chronologically by date received. The comments and responses begin on the following page.

E.1 Email Messages

From: Lynne Gamble
Sent: Saturday, April 04, 2009 9:42 PM
To: John Falkenstien
Subject: 46 corridor

Dear Mr. Falkenstein:

"The concept of parallel routes was developed to allow City residents access to all city destinations; Cuesta College, Kermit King School, Regency Centers, industrial business centers and the Airport, without having to travel on the highway. This will allow the highway to operate more efficiently, so that regional traffic will not be induced to use local streets to escape congestion. The parallel routes are not proposed or considered for their potential to serve regional trucks."

(1) North River Road/River Oaks is the only possible "parallel route" from town to Cuesta College, Kermit King, Lowe's Shopping Center, etc. This is our neighborhood street.

(2) Since there are no designated truck routes through town, there is no legal way to keep heavy truck traffic from the highway off this street or any other neighborhood street.

The present 46 corridor plan, as I see it, is to use our neighborhood street for traffic that should be on the highway. What is the city thinking? Do you think that we will sit still and accept traffic gridlock on our street because the city cannot or will not do adequate traffic planning? Would you accept 46 traffic overflow past your house without a knock-down drag-out fight of the century?

How do we get the city to do its job in traffic planning?

Sincerely,

Lynne Gamble

Response:

Thank you for taking the time to comment on the State Route 46 East Comprehensive Corridor Study. Response to yours comments directed toward the City of Paso Robles were addressed by City's Engineer, John Falkenstien (response included below) and have been noted in the record.

From: John Falkenstien
Sent: Monday, March 30, 2009 4:58 PM
To: 'lygamble@gmail.com' **Cc:** Ron Whisenand; 'Larry Newland'
Subject: 46E Corridor
Attachments: City Council.doc

Dear Lynne:

I received a copy of your letter to council and your phone message the other day. We do appreciate your comments. You have expressed your concern with limited improvements being planned for Highway 46 and the resulting impact on your neighborhood. The City Council remains very conscious of neighborhood impacts in their support of the Caltrans Corridor Study. They have directed their staff, including myself, to remain very involved with Caltrans through their planning processes.

The Council recognizes that we must improve access across the highway, as well as to and from the highway. The Recommendations section of the Caltrans Corridor Study focuses on Union Road to meet this need. The City will work with Caltrans in the coming year to specifically study the Union Road intersection for its potential to be developed into a grade separated interchange. That study will include options for an interim traffic signal. We would like to ultimately connect the north leg of this intersection with Airport Road to the east and Golden Hill Road to the west. This will provide options for accessing the airport and should relieve congestion on Airport Road. This is an example of the concept of "parallel" routes.

The concept of parallel routes was developed to allow City residents access to all city destinations; Cuesta College, Kermit King School, Regency Centers, industrial business centers and the Airport, without having to travel on the highway. This will allow the highway to operate more efficiently, so that regional traffic will not be induced to use local streets to escape congestion. The parallel routes are not proposed or considered for their potential to serve regional trucks.

Reference is made in the Caltrans Corridor Study of the Willhoit Specific Plan application. Caltrans makes this reference as an example of their concern of the impacts of growth in the City on the highway. It is important to recognize that the Willhoit application is speculative at this time. The application is not complete to the extent that its environmental impacts can be evaluated. You will be able to follow the progress of the application on the City's Community Development web site.

I am currently leading the City's effort to update the circulation element of the general plan. This process will include evaluation of all major streets and intersections in the City. The Council will ultimately consider and establish a reasonable level of expectation of traffic conditions in the City based on our current general plan. We will craft policies to maintain these conditions. There will be many opportunities for public comment including workshops and public hearings. Once established, this "base line" will be the standard by which Willhoit's and any other requested general plan update will be measured for their traffic impacts.

I am available to answer any questions you may have.

John Falkenstien
City Engineer

E.2 Website Communication

Subject: HWY 46
Date: Fri, 13 Mar 2009 11:41:32 -0700
From:
Reply-To:
To: info@46eastforthefuture.org

Comment Submitted by:

MARK BORJON
GOLDEN HILLS AUTO CENTER/HWY 46 EAST PROPERTIES LLC

Regarding
Page:http://www.46eastforthefuture.org/Content/10015/DraftCCS.html

Subject:

HWY 46

Comment:

WHAT HAPPENS AT THE CORNOR OF HWY 46 EAST AND GOLDEN HILL

Response:

Thank you for your interest in the State Route 46 East Comprehensive Corridor Study and question regarding future plans for the corner of HWY 46 East and Golden Hill Road. The response to your question is provided as follows:

The Comprehensive Corridor Study found that development adjacent to the intersection (the Golden Hill Road Retail Center) has secured funding to improve the intersection by providing dual left-turn lanes on all four legs and updating the signal phasing. Within the scope of a 20 year planning horizon, the Comprehensive Corridor Study recommends that improvements at Golden Hill remain low-priority, due to the higher priority need for improvements at Union Road; the improvements at Union include a new overcrossing and right-of-way preservation for a future interchange. However, extending beyond the 20 year planning horizon, increased traffic conditions may require future modifications at Golden Hill Road.

Subject: we support widening Route 46
Date: Sun, 29 Mar 2009 12:53:22 -0700
From:
Reply-To:
To: info@46eastforthefuture.org

Comment Submitted by:

DAVID & NANCY WICKERSHAM
ATASCADERO RESIDENTS

Regarding Page:http://www.46eastforthefuture.org/

Subject:

we support widening Route 46

Comment:

We support constructing improvements to the 46 corridor. It should be widened to 4 lanes all the way through SLO County and beyond the "wye". Construct a new IC at the Wye also. in Kern County it should continue to be widened until it is 4 lanes with no gaps. SLOCOG should support this as the highest priority in the Region for funding.

The City of Paso Robles has not been paying for enough improvements to the 46 corridor. The City should be contributing a large sum of money (not just RW contributions) to the 46 East IC project, as their over development has greatly increased the traffic in this area.

They should also be constructing interchanges on 46 where they continue to approve large developments and winery tasting rooms as well as other business. The signals just slow traffic and cause very long queues. The County should also be contributing outside the city limits.

Response:

Thank you for your valuable comments pertaining to the State Route 46 East Comprehensive Corridor Study. We continue to work in partnership with the City of Paso Robles to improve mobility and your comments have been noted in the record.

Subject: Roundabouts
Date: Tue, 07 Apr 2009 10:29:39 -0700
From:
Reply-To:
To: info@46eastforthefuture.org

Comment Submitted by:

Michael Toschi

Regarding
Page:http://www.46eastforthefuture.org/Content/10015/DraftCCS.html

Subject:

Roundabouts

Comment:

Are roundabouts being considered for the Route 46 East for the Future project?

Response:

Thank you for your interest in the State Route 46 East Comprehensive Corridor Study (CCS). Roundabouts along SR 46E were considered in the CCS. However, it was determined by the study team that roundabouts would not be an appropriate feature for SR 46E given the existing and future traffic patterns examined in the CCS. Therefore, roundabouts were not incorporated into the final proposal for recommended improvements to the corridor.

Subject: Draft Route 46 East Comprehensive Corridor Study (3/09)
Date: Thu, 09 Apr 2009 17:13:04 -0700
From:
Reply-To:
To: info@46eastforthefuture.org

Comment Submitted by:

Jon E. Goetz
Kronick, Moskovitz, Tiedemann & Girard

Regarding
Page:http://www.46eastforthefuture.org/Content/10015/DraftCCS.html

Subject:

Draft Route 46 East Comprehensive Corridor Study (3/09)

Comment:

The purpose of this letter is to submit the comments of our client who owns the project described on page 15 of the above-referenced Study as ?River Oaks II?. The same project is listed in Table 2.3 (page 17) as ?River Oaks?. We have two comments.

First, on page 15 there are four specific plans listed in the City of Paso Robles (?City?), including our client?s project and ?Olson, Beechwood?. Table 2.3 of the Study lists projects planned by the City that will impact 46 East. While our client?s project was on the list, the Olson-Beechwood specific plan was not. The latter project should also be included in Table 2.3 and its traffic impacts on 46 East analyzed along with our client?s project and the other specific plans. We understand that the City?s specific plan contemplates a range in densities of 1347 to 3637 units for the Olson-Beechwood property.

Second, the City is currently processing the Uptown/Town Center Specific Plan Project (?Uptown Project?), which is another specific plan that will have traffic impacts on 46 East. However, it is not listed on either page 15 or in Table 2.3. The Uptown Project will result in a new mix of residential and commercial uses, types and densities to that property not currently existing. The Uptown Project includes areas west and south of the 46 East corridor. Therefore, we believe it should be listed on page 15, included in Table 2.3 with the other City specific plans and analyzed in the Study for its traffic impacts.

We appreciate the opportunity to comment on the Study and would request that we receive any future notices regarding future processing, workshops or hearings on the Study. If you have any questions regarding our comments, please do not hesitate to contact us.

Very truly yours,
KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Law Corporation

Jon E. Goetz

Response:

Thank you for your comments regarding the State Route 46 East Comprehensive Corridor Study. Responses to your comments follow.

(1.)"River Oaks II" Specific Plan listed on page 15 of the State Route 46 East Comprehensive Corridor Study and "River Oaks" listed in Table 2.3 on page 17 have both been changed to read "River Oaks, the Next Chapter." This change establishes consistency in terminology that was indicated as a concern and determined from the owner's/applicant's reference to the project in Resolution No. 09, a most recent product of the April 23, 2009 Paso Robles City Council meeting. (2.) As requested, the Olsen-Beechwood Specific Plan has been included in the Study analysis and added to Table 2.3 and Figure 2.4. (3.) The Uptown Project has also been included in the analysis and added to Table 2.3 and Figure 2.5.

E.3 Workshop Comment Cards

for the future

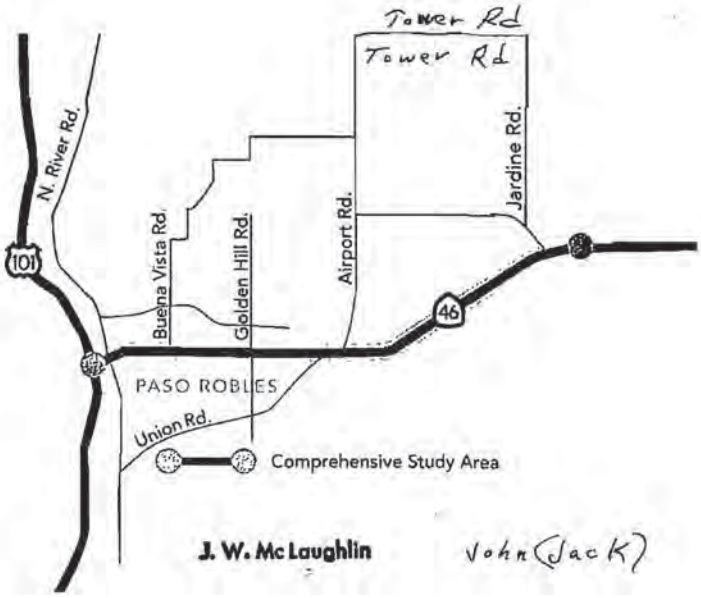
8

Comprehensive Corridor Study Comment Form

Thank you for attending this Open House. Please provide any written comments on the Draft Comprehensive Corridor Study here.

Please use the corridor study area map to note any site specific comments.

There is no doubt in my mind that the present airport area will soon become the San Luis Obispo County airport for full sized airliners so thoughts of keeping area clear + possibly adding property North of Tower road should be kept in mind. SLO city will never be safe enough for large Airport



J. W. McLaughlin John (Jack)

Response:

Thank you for your comments on this important transportation project. Your comments have been noted in the record.

for the future

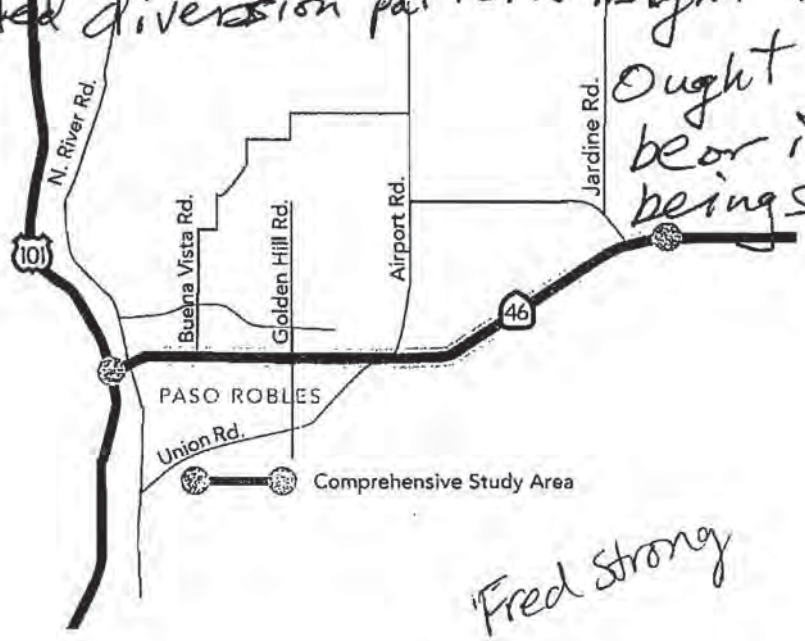
9

Comprehensive Corridor Study Comment Form

Thank you for attending this Open House. Please provide any written comments on the Draft Comprehensive Corridor Study here.

Please use the corridor study area map to note any site specific comments.

On p.72 of the Draft you present the "Existing Diversion Patterns". The document presents a number of future improvements that would change this pattern. We need a map that shows a "best guess" as to what the projected diversion pattern might be ought to be or is being sought to



Fred Strong

Public Engagement Process Evaluation

Your feedback is important to us! Please take a moment to tell us what you thought about any of the process elements below.

Some of the elements are related to previous workshops. If you did not attend them, no response is necessary.

Please **circle** all SR 46 East Comprehensive Corridor Study events that you attended:

March 5, 2008 Public Workshop **May 29, 2008 Public Workshop** **March 11, 2009 Open House**

Element	1=Poor, 2=Fair, 3=Good, 4= Excellent (please circle your response)	Comments
Workshop/ CCS Orientation	1 2 3 4	
PowerPoint presentations	1 2 3 4	
Small group discussions	1 2 3 4	
Interactive exercises	1 2 3 4	
Maps and information displays	1 2 3 4	
Meeting notices and outreach	1 2 3 4	

Other Comments

Response:

Thank you for your comment on the State Route 46E Comprehensive Corridor Study (CCS) pertaining to "Existing Diversion Patterns" figure (Figure D.4.). The scope of the CCS, as a transportation planning document, considers solutions and recommendations based off of existing conditions. It would be the role of a future project study report (PSR), to project future diversion patterns along the SR 46E corridor based off of a future conditions analysis. Your comment has been noted in the record.

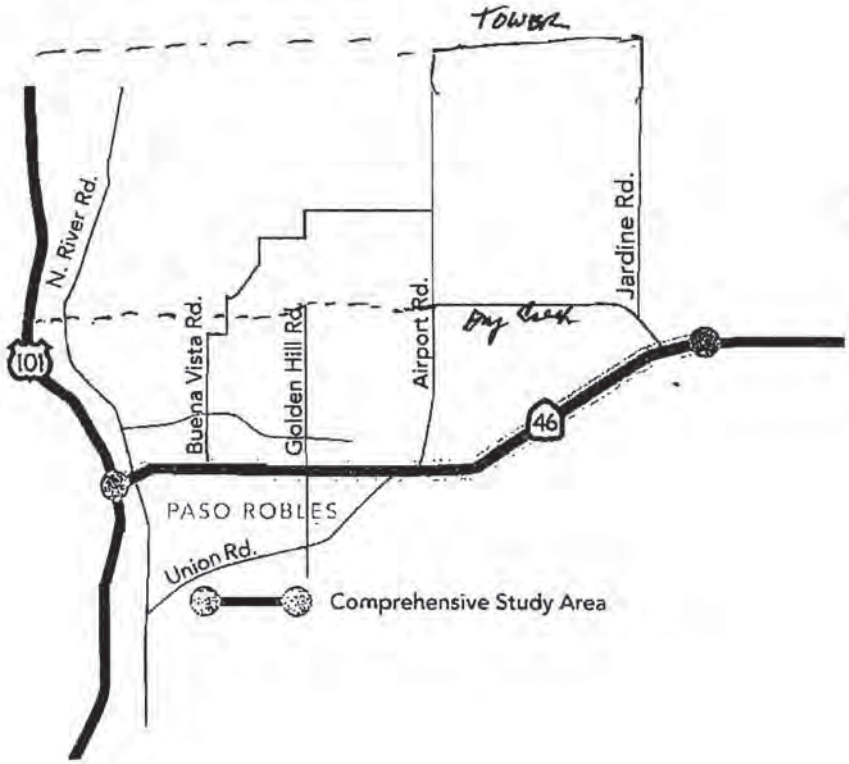
10

Comprehensive Corridor Study Comment Form

Thank you for attending this Open House. Please provide any written comments on the Draft Comprehensive Corridor Study here.

Please use the corridor study area map to note any site specific comments.

Commendable attempt for input!



Public Engagement Process Evaluation

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PowerPoint presentations	1 2 3 4	
Small group discussions	1 2 3 4	
Interactive exercises	1 2 3 4	
Maps and information displays	1 2 3 4	
Meeting notices and outreach	1 2 3 4	

Other Comments

Response:

Thank you for supporting the State Route 46 Comprehensive Corridor Study public engagement effort. Your comment and evaluation have been noted in the record.

Appendix F SLOCOG & City of Paso Robles Endorsement

RESOLUTION NO. 09-033

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES ENDORSING THE CALTRANS ROUTE 46 EAST COMPREHSENSIVE CORRIDOR STUDY DATED MARCH 2009

WHEREAS, the City of Paso Robles has worked with partnership agencies including the County of San Luis Obispo, San Luis Obispo Council of Governments (SLOCOG), and Caltrans in the development of a Route 46 East Comprehensive Corridor Study (CCS); and

WHEREAS, the CCS is a planning tool to evaluate the health and long term strategies for Highway 46E from US 101 to just east of the City limits; and

WHEREAS, the City's General Plan recognizes the need to coordinate with Caltrans, SLOCOG, and the County to improve access to, from, and along Highway 46E as it travels through Paso Robles; and

WHEREAS, improvements along the corridor are necessary for the long term health of the State highway system and to allow development of the City in a manner authorized by the City's General Plan.

NOW, THEREFORE, BE IT RESOLVED, AS FOLLOWS:

- SECTION 1. The City Council of the City of Paso hereby endorses the Route 46 East Comprehensive Corridor Study and will work with the other three agency partners to pursue implementation of the study.
- SECTION 2. The City Council of the City of Paso Robles request that the four agency partners help fund future improvements and facilitate streamlined permitting of State Highway improvements
- SECTION 3. The City Council of the City of Paso Robles directs their staff to consider and incorporate CCS concepts in our future planning efforts, work with Caltrans on the approval of a corridor plan line, and request Caltrans initiation of a Project Study Report for future corridor improvements.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 17th day, March 2009 by the following vote:

AYES: Gilman, Hamon, Steinbeck, Strong and Picanco
NOES:
ABSTAIN:
ABSENT:

Duane Picanco, Mayor

ATTEST:

Cathy David, Deputy City Clerk

SAN LUIS OBISPO COUNCIL OF GOVERNMENTS

STAFF REPORT

MEETING DATE:	**April 8, 2009**
SUBJECT:	**46E Comprehensive Corridor Study (CCS)**

SUMMARY

March of 2009 marked the completion of the Route 46 East Comprehensive Corridor Study (CCS), a planning document guiding the direction of future improvements along the five mile stretch of State Route 46 East within the city of Paso Robles.

This study was conducted through a cooperative partnership of four agencies; Caltrans, SLOCOG, the City of Paso Robles and the County of San Luis Obispo. Through this coordinated effort, the study of present and future conditions, in addition to an extensive public outreach effort, the study presents concepts for the direction of improvements on the corridor for the mid-range planning horizon (20 years).

The executive summary of the Final Draft Document of the Route 46 East Comprehensive Corridor Study can be found in Attachment A of this staff report. The complete document including appendices can be accessed on the 46 East CCS website, www.46eastforthefuture.org under "documents".

The City of Paso Robles City Council endorsed the 46 East CCS at the March 17, 2009 meeting and directed City staff to incorporate the concepts presented in the document in future planning efforts including pursuit of a 46 East plan line, circulation Element update, AB 1600 fee progar4am and cooperating with Caltrans and SLOCOG staff to pursue a Project Study Report (PSR) regarding improvements on the corridor as well as funding for ultimate improvements.

RECOMMENDATION **APPROVED**

Staff:

1. Endorse the Route 46 East Comprehensive Corridor Study; and,
2. Direct staff to incorporate concepts into 2010 RTP, ~~and~~ update; and
3. Partner with Caltrans, ~~and~~ the City of Paso Robles, and San Luis Obispo County to pursue a Project Study Report (PSR) for corridor improvements and funding for ultimate implementation.

TTAC/CTAC:

BACKGROUND

In 1999 SLOCOG began a study of Route 46 East, through the urban section in Paso Robles with Omni Means consulting. Though much effort occurred during that time, it was in February of 2005 that a partnership was established with Caltrans lead to embark on a Comprehensive Corridor Study (CCS) of Route 46 East from the 101, five miles east, to the Jardine Road intersection. This partnership consists of a Steering Committee, Study Team and Technical Advisory Committee comprised of planning, engineering and executive staff from Caltrans District 5, SLOCOG, the City of Paso Robles and the County of San Luis Obispo. Furthermore, to aide in the planning process in this partnership, MIG consultants were secured to facilitate study team meetings as well as public outreach efforts.

Over the four year process the team developed strategies as well as identified transportation related priorities within the corridor study area. The resulting CCS is a planning tool that will be an asset for planners and decision makers for transportation investment decisions.

D-5-1

Staff report prepared by Geiska B. Velasquez

DISCUSSION
The study area for the 46 East CCS consisted of only the five mile stretch of the urbanized area within the City of Paso Robes limits. However, effects of surrounding areas on this stretch of highway, as well as current improvements along the corridor and beyond, were taken into consideration while studying this section.

Purpose
The purpose of this study as identified in the report included the following objectives:

1. Assist in CEQA review and in the assignment of mitigation measures by illuminating a clear nexus between project specific impacts and a particular set of improvements;
2. Develop priority locations for long-term improvement and right-of-way needs;
3. Enable agencies to better compete for future transportation funding;
4. Provide assistance to other agencies when developing transportation and land use plans such as the City's Circulation Element, the Regional Transportation Plan (RTP), etc.

In addition the Route 46 East CCS will be incorporated into the larger Route 46 Corridor System Management Plan (CSMP) for the entire route. The CSMP is a State lead plan required for use of the $67 million in Corridor Mobility Improvement Account (CMIA) funding for Route 46 East improvements (widening) east of the urban comprehensive corridor study section.

Implementation
The recommendations of the CCS primarily indicate the need for incorporation of the study recommendations into the transportation planning documents of the partner agencies including the City of Paso Robles General Plan Update (Circulation Element), the SLOCOG Regional Transportation Plan (RTP) and Community 2050, the San Luis Obispo County Salinas River Area Plan; and the Caltrans Corridor System Management Plan for State Route 46.

Improvements
The conclusions of the CCS include specific locations with varying degrees of necessity for improvement. Due to previous development, some of the higher density intersections are not conducive to major improvements. Furthermore, some proposed improvements necessitated the need for major improvements to US 101 mainline. These, among other constraints made clear indications of where improvements were necessary. Of these, the highest priority is a major improvement at the Union Road intersection with State Route 46 East.

Project Study Report (PSR)
Pursuing a PSR on the Union Road intersection with Route 46 East is not only the logical first step in implementing the CCS, it is necessary to secure future resources to ensure an intersection improvement will occur at this location. Development pressure adjacent to the highway along the corridor study area is intense and actions to secure right-of-way are imperative. This is the reason for why City of Paso Robles staff recommended pursuing a Union Road PSR when their City Council endorsed the 46 East CCS on March 17, 2009, and why SLOCOG staff is making the same recommendation at this time.

Staff report prepared by Geiska B. Velasquez

SLOCOG MINUTES **APPROVED** April 8, 2009

Vice President O'Malley moved to approve the Estimated LTF (Table A) apportionments for FY 2009/2010. Board Member Mary Ann Reiss seconded, and the motion carried on a voice vote, in the absence of Board Member Achadjian.

D-5 Route 46E Comprehensive Corridor Study (CCS): Mrs. Velasquez announced the completion of the Route 46E Comprehensive Corridor Study (CCS), a planning document that serves as a guide for the direction of future improvements on the Route 46 East corridor within the city of Paso Robles. She then introduced Mr. Larry Neuland (Caltrans Planning) who would be conducting a brief presentation on CCS. **Mr. Neuland** presented the CCS, noting the history/background; the follow-up document – Corridor Systems Management Plan (CSMP); the findings from the study; the improvements and benefits; and the reasons for corridor planning (to remove confusion relative to the priorities for the future, easier to plan for priorities, to simplify the development review process, to strengthen local circulation element, and to strengthen the regional competition for money). **Mr. Neuland** pointed out that this document is available on the web at www.46Eastforthefuture.org and that the public comment period will end in a couple of days.

Mr. De Carli noted that this has been a real comprehensive and collaborative process, with SLOCOG, City of Paso Robles and stakeholders working together. There was an extensive input, with SLOCOG, the City and stakeholders conducting outreach to the community. The criteria include the requirement that the final product must be fundable and must be feasible. He complimented Mr. Neuland and staff for a job well done, noting that the City endorses this document.

Board Member Mecham stated that he is thrilled to see the completion of the study. He is excited to see the focus on Union Road. He complimented everyone who worked on CCS, noting that Route 46 is a major corridor out of this area in case of evacuation.

Board Member Strong remarked that this has been an important project, noting that city of Paso Robles has connectivity problems. The CCS is an effort to address capacity concerns on Highway 101. He said that the cooperation with all the stakeholders and the community is commendable and that this document should be supported.

Public Comments: Mr. Frank Honeycutt, San Luis Obispo County Public Works, concurred with all previous comments, noting that it is a good thing to get so much agreement between stakeholders. He said, "This makes our job much easier, I recommend endorsing the CCS."

Board Member Mecham moved to approve the staff recommendation to:

1. **Endorse the Route 46 East Comprehensive Corridor Study; and**
2. **Direct staff to incorporate concepts into 2010 Regional Transportation Plan (RTP) update; and**
3. **Partner with Caltrans, City of Paso Robles and San Luis Obispo County to pursue a Project Study Report (PSR) for corridor improvements and funding for ultimate implementation.**

Board Member Strong seconded, and the motion carried on a voice vote, with Board Member Achadjian absent.

D-6 Project Study Reports (PSRs): Status and Priorities for Future State Transportation Improvement Program (STIP) Cycles: Ms. Jessica Berry noted that this is an annual update to look at Project Study Reports (PSRs) in the region (31 total) and that the staff report in the agenda shows the completed, pending and proposed PSRs. Each year, SLOCOG staff reports to the Board on the progress of those PSRs and presents recommendations. This time, staff recommends that Caltrans

E-1-13

APPENDIX E: SLOCOG STAFF REPORT & CSMP APPROVAL

SAN LUIS OBISPO COUNCIL OF GOVERNMENTS

STAFF REPORT

MEETING DATE:	**June 10, 2009**
SUBJECT:	**Route 46 Corridor System Management Plan (CSMP)**

SUMMARY

Through a joint effort between Caltrans and SLOCOG, the Route 46 Corridor System Management Plan (CSMP) is now complete and recommended for SLOCOG Board approval. The CSMP is an analysis of existing as well as future traffic conditions along the length of State Route 46 in the District 5/San Luis Obispo County region. It proposes management strategies and improvements to maintain and enhance mobility throughout the corridor. This creates an efficient and effective way of maximizing the usefulness of our existing transportation resources as well as planning for improvements, including prioritization.

An approval of the State Route 46 CSMP is an approval of the document as an overall policy statement and strategic plan that will guide transportation decision and investments for the State Route 46 Corridor within the San Luis Obispo County Region. This approval also ensures retention of the Corridor Mobility Improvement Account (CMIA) programmed on Route 46 East Corridor Improvements (widening) Whitley 1 segment expected to begin construction next year. For the urban segment, the State Route 46 East Comprehensive Corridor Study (CCS) (endorsed by the Board in April of 2009) is the basis for the outreach and analysis, and this excerpt identifies these and other technical strategies and recommendations of the Plan.

The Route 46 CSMP is provided is provided under separate attachment. Attachment A includes comments made by SLOCOG staff and Technical Transportation Advisory Committee (TTAC) as well as comments made by individual TTAC member agencies. Staff and Caltrans will respond to these comments at the meeting.

RECOMMENDATION **APPROVED**

Staff: Endorse Route 46 Corridor System Management Plan, pending clarification of the attached comments.

TTAC: Support staff recommendation, pending clarification of the attached concerns.

CTAC: Support staff recommendation

BACKGROUND

Corridor system management planning is a strategy being utilized at Caltrans that developed out of system planning and system management.

Caltrans System Planning is the long-range transportation planning process that evaluates current and future operating conditions and deficiencies on the State highways. Improvements are recommended to maintain mobility by minimizing or alleviating the identified deficiencies.

Caltrans System Management is the process of maximizing the efficiency and effectiveness of the existing transportation infrastructure through use of proven methods and technologies, which generally involve low capital or no cost activities, such as ramp metering and HOV lanes as well as demand management strategies, such as transit and rideshare marketing among others.

A Corridor System Management Plan, or CSMP, uses a combination of these efforts to provide for the integrated management of modes and roadways. This is done to make possible the efficient and effective mobility of people and goods within a transportation corridor. A CSMP presents an analysis of existing as well as future traffic conditions. It then proposes management strategies and improvements to maintain and enhance mobility for that corridor. This makes them an efficient and effective way of maximizing the usefulness of our existing transportation resources as well as planning and deciding which improvements

C-3-1

Staff report prepared by Geiska B. Velasquez

should be funded and in what priority order. Additionally, there is a state-wide push to develop CSMP documents throughout the State for corridors within which funding is being used from the Corridor Mobility Improvement Account (CMIA) created by the passage of the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by the voters as Proposition 1B on November 7, 2006.

The California Transportation Commission (CTC) clearly identifies the importance of collaboration between State and Regional agencies in the transportation community to identify, program and deliver priority projects on key corridors throughout the State. The CMIA guidelines make evident that the recipients of funds remain accountable for their projects and "maintain the trust and confidence of those who have provided the wherewithal to implement this program" and encourage the use of a CSMP to do so. In fact the CTC intends to give priority to projects where a CSMP is in place to preserve corridor mobility which indicates a documented regional and local commitment to develop an effective implementation as such.

CMIA Funded projects in the San Luis Obispo County Region include Route 101 improvements (Operational Improvements and Santa Maria River Bridge widening) and improvements to Route 46 (widening on the Whitley 1 and Whitley 2 segments). Within Caltrans District 5 there are three CSMP documents under development for corridor segments of Sate Route 101, State Route 1 and State Route 46.

DISCUSSION

State Route 46: Corridor System Management Plan

The Route 46 CSMP assesses current performance, identify causal factors for congestion, and based on testing of alternative improvement scenarios (through micro / macro-simulation) propose the best mix of project improvements, strategies and actions to restore throughput, improve travel times, increase reliability and safety, and preserve the corridor. The Corridor is not limited to project boundaries and includes all transportation components (not just highways) that affect mobility on a major travel path.

The Route 46 CSMP study limits include State Route 46 (both 46 East and 46 West) in its entirety within Caltrans District 5 (San Luis Obispo County) including the short connecting segment on Route 101 through Paso Robles.

A preliminary look at the corridor identified two areas of special focus: the interchange of US 101 and SR 46 West (just south of Paso Robles) and the five mile segment of SR 46 East stretching from the US 101 interchange to Jardine Road. All transportation planning partners have been working to find solutions to multiple problems on both.

The Route 46 East Comprehensive Corridor Study (CCS), completed and endorsed by the SLOCOG Board in April, 2009, defined a sustainable transportation strategy and long-term vision for the five mile urban segment. The CSMP includes all pertinent studies, analyses and improvement scenarios, from the Route 46 East CCS, and utilized the sufficient public outreach conducted thru this urban section of the corridor.

It is necessary for SLOCOG to approve the CSMP for state route 46 through San Luis Obispo County as the overall policy statement and strategic plan that will guide transportation decisions and investments for the State Route 46 corridor as the regional transportation planning agency and partner in highway corridor planning.

Staff report prepared by Geiska B. Velasquez

ATTACHMENT A

Comments on Route 46 Corridor System Management Plan

The following comments were provided on the document.

- Pg. 10 – Add language regarding SB375 in addition to AB 32
- Pg. 18 – expand demographics section using recent population projections developed by SLOCOG (May 2009) Paso population projected to be 30,650 by 2010 and projected to grow to 35,880 by 2020.
- Pg. 20 – expand local road section as identified in CCS
- Pg. 22 – identify class one or class two lanes within corridor.
- Pg. 23 – verify greyhound access mentioned and included identify that an upcoming short range transit plan is scheduled for 09/10 and will focus on transit improvements in eh north east quadrant of the city (east of 101/north of 46).
- Pg. 30 – CMS should be identified on 101 northbound before 46 East exit
- Pg. 32 – recommend changing color identification to note red being the highest collision ratio
- Pg. 36 – identify that corridor is not a freeway as pictorial illustrates
- Pg. 39 – staff disagrees with paragraph at top of page; most of the traffic at theses segments is interregional in nature except segments 2A, 2B and 2C.
- Pg. 45 – SLOCOG continues to have concerns with Caltrans long term reference of a freeway concept and reaffirms their position supporting grade separated and access controlled expressway improvements (expressway versus freeway standards) due to much more stringent standards affecting interchange spacing and design.
- Pg. 46 – address SB375 in LU & Trans connection
- Inclusion of additional reference to the community of Shandon. Requested clarification on proposed short and long term improvements in the vicinity of Shandon and the affect on access to the community.
- Include indication of endorsement of the City of Paso Robles recent project mitigation strategies in regard to development consistent with General Plan. The City of Paso Robles Circulation Element update; City expects the outcome to include Caltrans endorsement. The Circulation Element will reflect City's desire to develop parallel routes. It is anticipated that the AB 1600 fee structure will ultimately include a grade separation at Union Road in addition to the 46E-101 and 46W-101 projects currently on the needs list. The City expects that Caltrans will recognize these efforts as appropriate mitigation for impacts on State routes through 2025-2030.
- Pg. 49 – Segment 1, US 101/SR 46 West Interchange: Project Begin Construction TBD as funding allows.

C-3-3

Staff report prepared by Geiska B. Velasquez

TRANSPORTATION CONCEPT REPORT

For

STATE ROUTE 46 IN DISTRICT 5

DEPARTMENT OF TRANSPORTATION, DISTRICT 5
System Planning Branch

July 2008

I approve this *Transportation Concept Report* for State Route 46 in District 5 as the guide for future decisions, investigations, and investments in the highway corridor.

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Table of Contents

EXECUTIVE SUMMARY……..……iii

INTRODUCTION ……..…1

The Transportation Concept Report……1
TCR in the Planning Process……2
Organization of Report…….. 3
State Route 46 Location Map…….. 4

ROUTE DESCRIPTION AND SEGMENTATION ……..5

Route Designations and Classifications……5
Route Description……...5
Area Description and Trends……... 7
Corridor Concerns……..7
Route Segmentation…….…....7

CORRIDOR ANALYSIS…….…….…… 9

Operating Conditions and Segment Summaries……9
Environmental Resources and Issues…… 11
Transportation Concept…….. 11
Strategies to Achieve Transportation Concept……... 13
Ultimate Transportation Corridor …….. 14

CORRIDOR MANAGEMENT…… 15

The Land Use and Transportation Connection……..15
Context-Sensitive Solutions……...16
Programming Concept Facilities……17
Consideration of Alternatives ……...17
Alternatives to Highway Travel…… 18
Intelligent Transportation Systems……18

SOURCES CONSULTED……21

APPENDICES
Appendix A: Definitions, Acronyms, and Abbreviations
Appendix B: State Highway System in San Luis Obispo County
Appendix C: Route Segment Data Sheets and Maps
Appendix D: 2001 US 101 Transportation Concept Report Excerpt
Appendix E: Level of Service Calculation Methodology
Appendix F: Level of Service Detailed Analysis
Appendix G: Programmed State Transportation Improvement Program (STIP) Projects
Appendix H: 1998 Interregional Transportation Strategic Plan Excerpt
Appendix I: 1964 State Route 46 Freeway Agreement
Appendix J: 2003 City of Paso Robles General Plan Circulation Element Excerpt

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EXECUTIVE SUMMARY

This Transportation Concept Report (TCR) is a long-term planning document for State Route 46 (SR 46) in District 5 of the California Department of Transportation (the Department). The TCR: (1) evaluates current and projected conditions along the route; (2) establishes a twenty-year planning vision or concept; and (3) recommends long-term improvements to achieve the concept and provides a concept for managing, operating, improving and preserving a corridor across all modes and jurisdictions for the highest productivity, mobility, reliability, accessibility, safety and preservation outcomes. The previous update of the TCR for SR 46 was in 1986, with traffic count revisions made in 1990.

A TCR reflects plans of the Regional Transportation Planning Agency (RTPA), the San Luis Obispo Council of Governments (SLOCOG), for managing local and regional travel demand on and across SR 46. However, the Department is charged with the additional responsibility to ensure the highways provide for safe and reasonable interregional traffic flow, continuity, bicycle/pedestrian friendliness, and efficient goods movement that sustain the State of California economy.

In addition to reflecting local/regional conditions and a statewide perspective on interregional mobility, the Department has attempted to respond to a changing context for transportation and land use planning. This has required a new emphasis on the interplay between the transportation system and land use patterns. In response to this new direction, greater emphasis is given to inter-modal solutions, new technologies, and the relationships among providers of transportation services and facilities (e.g., the Department, SLOCOG, and transit operators).

SR 46 is a major interregional route that connects the Central Coast with the Central Valley. SR 46 runs east/west from State Route 1 in San Luis Obispo County to State Route 99 in Kern County in District 6. The route has the highest traffic volumes of any east/west corridor between the Pacheco Pass (State Route 152) to the north and the greater Los Angeles freeway system to the south.

For the current analysis, SR 46 in District 5 was divided into three segments. For each segment, recent average traffic volumes and safety data were compared with traffic volume projections for the year 2030 and safety data for comparable facilities. In addition, recent levels of service (LOS)[1] were compared with future LOS based on the assumption that the only facility changes by the year 2030 will be the completion of currently programmed projects.

Based on current deficiencies, forecasts, and a qualitative analysis of alternatives and guided by the Interregional Transportation Strategic Plan, the Department identified the concept and attendant measures required for maintaining acceptable levels of service (detailed in Table 1 below). Land use and development adjacent to the state facility have a substantial impact on LOS. Local agencies are responsible for planning, implementing, and monitoring land use, development, and most alternative transportation modes. Local agencies should ensure that permitted land uses are compatible with the State Highway and local roads systems as well as local General Plans and other relevant planning documents. They should also comply with State mandated housing supplies, smart growth principles, and jobs-housing balances. District 5 will continue to work with these agencies in planning and programming transportation projects to meet demand for safe and efficient travel through the Route 46 corridor. With respect to Segment 2, which extends from US 101 in Paso Robles to Jardine Road, the Department has initiated a Comprehensive Corridor Study addressing long-range strategies for transportation solutions for this segment. Additionally, in the interest of preserving the highway's safety and operational integrity, the District's Development

[1] Level of Service (LOS) is described in detail in Appendix A: Definitions, Acronyms, and Abbreviations

Review/California Environmental Quality Act (CEQA) program will continue to work with local agencies to identify and evaluate transportation impacts and appropriate mitigation requirements at an early stage of planning for new development.

Table 1

Summary of Route 46 Segment Considerations and Concept LOS for 2030

SEGMENT	SEGMENT LIMITS	MAJOR CONSIDERATIONS (Strategies to Achieve Concept)	ROUTE CONCEPT
1	Junction of Route 1/46 (PM R0.15) to Southern Junction of Route 101/46 (PM R21.97)	The Route Concept for Segment 1 is a 2-Lane conventional highway. Operational improvements, such as left-turn pockets, passing lanes, and reconfiguration of the SR 46 West/US 101 interchange, will help to mitigate the increase in traffic volumes due to activities related to viticulture, tourism, and commercial development.	LOS C or Better
2	Northern Junction of Route 101/46 (PM 29.76) to Jardine Road (PM 34.64)	The concept for Segment 2 must provide for capacity and operational features to accommodate interregional traffic and increasing regional and local traffic, at Peak Hour LOS C/D cusp or better for segment 2A and LOS C/D cusp for segment 2B. A multi-lane access-controlled facility with intersection improvements and improvements to the local road network is the Route Concept and will improve mobility through this segment. The Interregional Transportation Strategic Plan and an existing Freeway Agreement support this concept. A Comprehensive Corridor Study currently underway will assess options for achieving acceptable long-term operating levels in this segment.	**Segment 2A:** Peak Hour LOS C/D cusp or Better **Segment 2B**: LOS C/D cusp or Better
3	Jardine Road (PM 34.64) to San Luis Obispo/Kern County Line (PM 60.85)	The Route Concept for Segment 3 is a four-lane expressway. Consistent with the designation of SR 46E as a focus route on the Interregional Transportation Strategic Plan, a series of programmed highway-widening projects will widen the highway to a four-lane expressway to the east junction of SR 41/46.	LOS C or Better

INTRODUCTION

System planning is the California Department of Transportation's (herein called the Department) long-range transportation planning process, conducted pursuant to Government Code Section 65086[a] and Department policy. The objective of system planning is to ensure that investments in the state highway system and the larger transportation system will result in a system that meets future needs for safety, mobility, and access. The method of system planning is to identify, at the earliest stage, those capacity and operational improvements and new technologies that will optimize corridor capacity and improve regional and interregional mobility. System planning thereby lays the groundwork for informed investment decisions. The system planning process includes the production of three interrelated sets of planning documents: (1) Transportation Concept Reports (TCRs), (2) Transportation System Development Program (TSDP), and (3) District System Management Plan (DSMP)[2].

In addition, the Department and SLOCOG have committed to developing a Corridor System Management Plan (CSMP) for the entire State Route 46 corridor within District 5 (San Luis Obispo County). The main objective of the CSMP is to manage the corridor using the established principles and practices of system and corridor management, and performance measurement for sustained corridor performance. The plan will be used as an integral tool for managing the corridor to achieve the highest mobility benefits, across all jurisdictions and modes, for both regional and interregional travelers. The CSMP will assess current performance, identify causal factors for congestion, and based on testing of alternative improvement scenarios (typically through micro or macro-simulation) propose the best mix of project improvements, strategies and actions to restore throughput, improve travel times, increase reliability and safety, and preserve the corridor. Developing the CSMP is complementary to, and consistent with, federal provisions for a continuing, cooperative and comprehensive planning process among transportation partners. This plan will support increased emphasis on system and corridor management and performance measurement, in both regional transportation plans and real-time traveler information. A charter for development and implementation of the CSMP was signed between the two agencies on October 26, 2007. A completed CSMP is scheduled for July 2009.

THE TRANSPORTATION CONCEPT REPORT

The Transportation Concept Report is the Department's long-term planning document for an individual route corridor. The TCR: (1) evaluates current and projected conditions of the transportation corridor for a given State Route; (2) establishes a twenty-year planning vision or concept; and (3) recommends long-term improvements to achieve the concept and provides a concept for managing, operating, improving and preserving a corridor across all modes and jurisdictions for the highest productivity, mobility, reliability, accessibility, safety and preservation outcomes. The TCR documents strategies from long-range plans prepared by local Regional Transportation Planning Agencies (RTPAs) and Metropolitan Planning Organizations (MPOs). The TCR also identifies major alternatives for accommodating demand within the state highway corridor. State highway corridors sometimes pass through several regional planning agency jurisdictions. When this is the case, the District-level TCR consolidates numerous regional strategies into a single comprehensive, internally consistent, corridor-specific document.

The improvements identified in a TCR are not necessarily tied to a funding source, nor does the document project future funding scenarios. The TCR helps to identify transportation deficiencies, which can be used as a basis for purpose and need. Collectively, TCRs provide the basis for

[2] The purpose and scope of the TSDP and DSMP are described in Appendix A: Definitions, Acronyms, and Abbreviations.

developing the TSDP and the State Transportation Improvement Program (STIP), which do address funding availability and are project specific.

TCR IN THE PLANNING PROCESS

A TCR provides a foundation for subsequent coordinated planning and project development. The information provided in the TCR is the basis for the State Route 46 Corridor System Management Plan, which is being prepared concurrently. A TCR is one of the methods for identifying transportation needs. Several source documents including the TCR and Regional Transportation Plans (RTPs) can lead to identifying these transportation needs. As TCRs and RTPs are updated they should be consistent in addressing these needs, reflecting community input and interagency cooperation. The purpose of the integrated process is to involve affected key players in attaining a general consensus on the direction of transportation improvements in a given area. Ideally, the goal is to balance local, regional, and interregional needs. Although the TCR does not function as a programming tool for transportation projects, it does serve as a starting point for transportation infrastructure improvements. An initial Project Study Report (PSR) evaluates the feasibility of alternatives to achieve the desired transportation improvements. The PSR then translates broad improvement planning concepts and planning scopes into project level detail.

ORGANIZATION OF REPORT

This Transportation Concept Report comprises three major parts: Route Description and Segmentation, Corridor Analysis, and Corridor Management.

The Route Description and Segmentation section provides route purpose, characteristics, designations and classifications, area description and trends, and corridor concerns. This section also lays out SR 46 segmentation, which is used for analytical purposes during the Corridor Analysis section.

The Corridor Analysis section looks at the present and future operating conditions for SR 46 segments. Environmental resources and issues details are also provided. This section then introduces the Transportation Concept for each of the segments, along with strategies to achieve the concept. This portion concludes with the Ultimate Transportation Concept, which looks beyond the 20-year planning horizon.

The Corridor Management section provides a concept for managing, operating, improving and preserving the corridor. This includes sections on programming concept facilities, goods movement, consideration of alternatives, the land use and transportation connection, and context-sensitive solutions.

Additional route details, background information, traffic analysis methodology is included in the Appendices section, as indicated in the Table of Contents.

The Transportation Concept Report for State Route 46 was prepared by the District 5 Planning Division/System Planning Branch. The following individuals contributed to the document:

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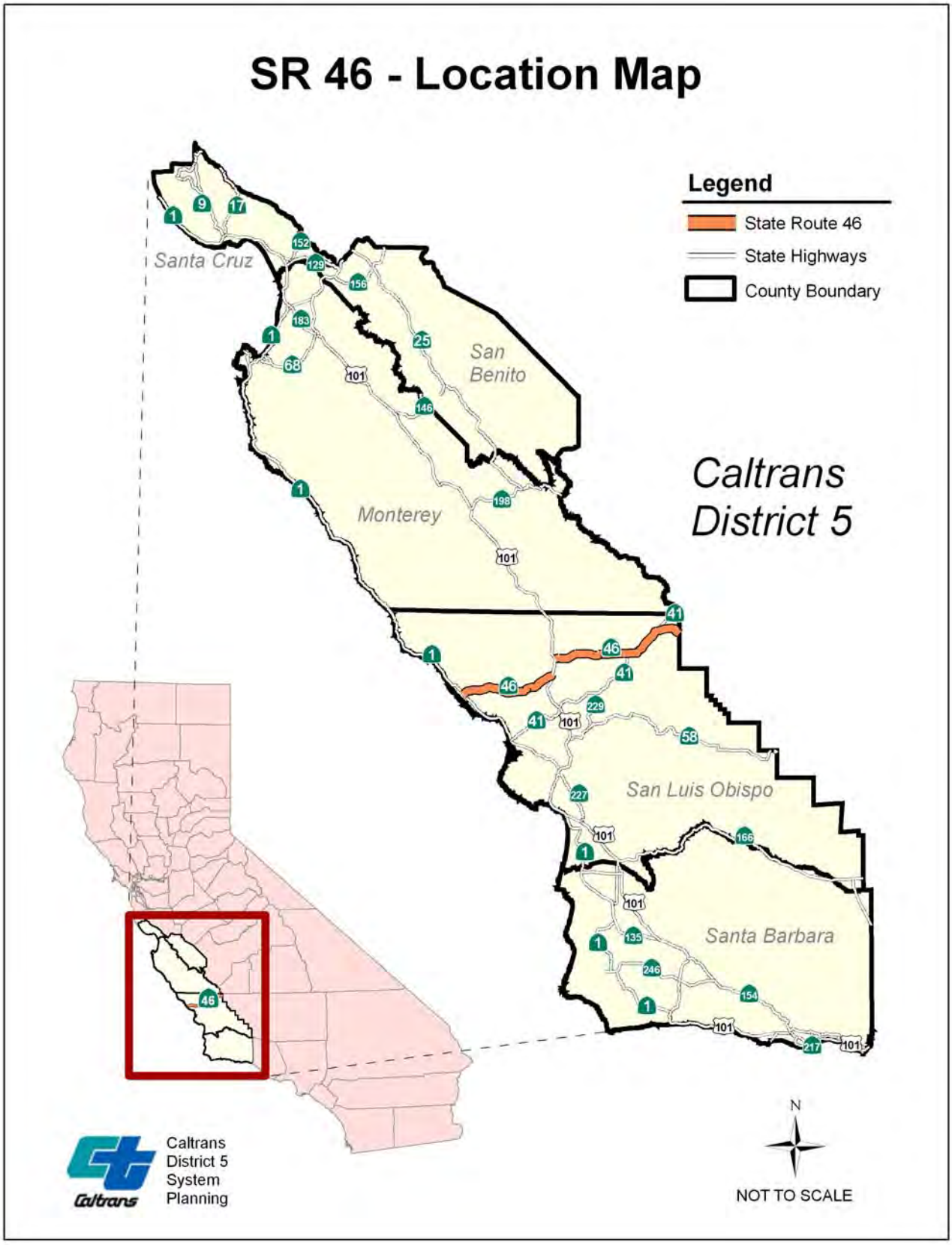
Gary Ruggerone	Environmental Analysis


SR 46 - Location Map
Legend
State Route 46
State Highways
County Boundary
Santa Cruz
San Benito
Monterey
San Luis Obispo
Santa Barbara
Caltrans District 5
Caltrans District 5 System Planning
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ROUTE DESCRIPTION AND SEGMENTATION

Route Designations and Classifications

The following designations and classifications provide information regarding the facility itself and its intended use. They also indicate the availability of special purpose funding related to the designation.

The Federal functional classification of SR 46 is Rural Minor Arterial/Rural Other Principal Arterial and Urban Minor Arterial/Urban Principle/Urban Other Principle Arterial. This classification recognizes trip lengths and travel densities that are indicative of substantial statewide and interstate travel as SR 46 passes through rural areas and serves trips between the Central Coast and Central Valley regions. SR 46 is designated as a Federal Aid Primary Route for its entire length.

The US Department of Defense, in cooperation with the US Department of Transportation, has identified SR 46 East as a Strategic Highway Corridor Network (STRAHNET) route. STRAHNET is a network of linked highways deemed essential to national defense for facilitating the movement of troops and equipment to airports, ports, rail lines and military bases.

SR 46 is on the Interregional Road System (IRRS) and SR 46 East is a designated Focus Route and High Emphasis Route in the Department's 1998 Interregional Transportation Strategic Plan (ITSP). Because of the Focus Route designation, projects located along SR 46 receive a higher funding priority than other IRRS routes or non-IRRS routes. The ITSP states that facility standards required for SR 46 East to meet the Focus Route concept are 4-lane freeway from the 101/46 East junction to the future Dry Creek Road intersection and 4-lane expressway from that point on to the San Luis Obispo/Kern County line. SR 46 East is also part of the National Highway System and is eligible for Scenic Highway status.

SR 46 is a Subsystem of Highway for the movement of Extra Legal Loads (SHELL) route from the North 101/46 junction to the Kern County line. SHELL routes are a network of State Highways designated where overweight and/or extra-large vehicles may be permitted to travel under certain limited conditions. SR 46 is used for the transport of extra legal permitted loads. SR 46 is also a Terminal Access Route to the National Truck Network. SR 46 East is also part of the Freeway and Expressway System.

The first few miles of SR 46, from SR 1 to PM 5.20, lies within the California Coastal Zone. This area must adhere to the California Coastal Act, which provides long-term environmental protection for California's 1,100-mile coastline for the benefit of current and future generations.

ROUTE DESCRIPTION

Linkages

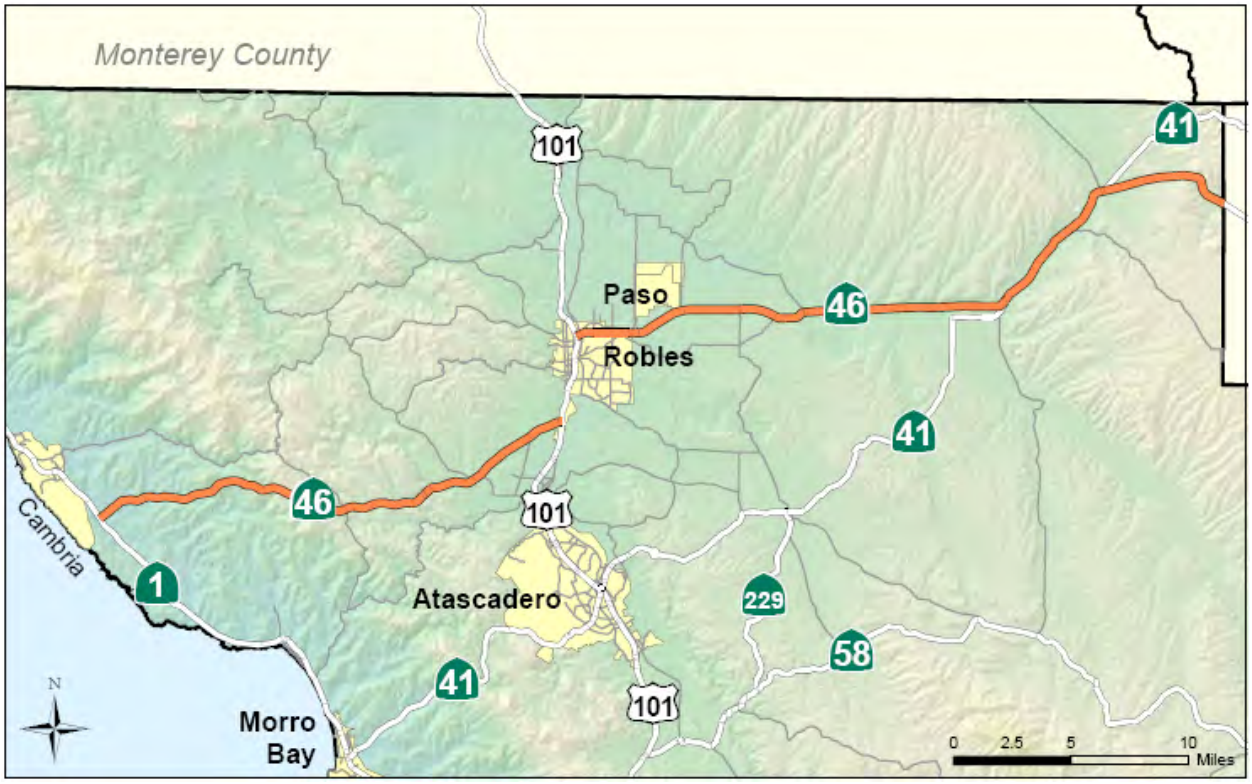
- State Routes 1, 101 and 41 connect with 46 (west to east) in San Luis Obispo County

SR 46 is a major interregional route that connects the Central Coast with the Central Valley region and accommodates interregional, regional, rural, and urban traffic. SR 46 runs east-west starting at the junction of State Route 1 in San Luis Obispo County and ending at Route 99 in the Central Valley (Kern County). SR 46 has the highest traffic volumes of any east/west corridor between the Pacheco Pass (State Route 152) to the north and the Grapevine (Interstate 5) to the south.

SR 46 within District 5 is 52.91 miles in length, all in San Luis Obispo County. Currently a 2 to 4-lane highway for its entire length, SR 46 West begins at the junction with SR 1, just south of Cambria, and continues easterly to the junction with US Route 101, just south of Paso Robles. This section of the highway passes over the Santa Lucia mountain range, passing grazing land, vineyards, and wineries located in the hills west of Paso Robles. SR 46 West provides access between US 101 and the rural Central Coast including several communities and major tourist destinations such as Hearst Castle and the Big Sur Coast. In addition, county residents use the route for business, commuter travel, and personal trips. The west portion of SR 46 provides access between coastal communities such as Cayucos and Cambria and inland communities along US 101 including Paso Robles, Templeton, and Atascadero. A break in the route begins at US 101 at the south end of Paso Robles. SR 46 resumes 3.8-miles north on US 101 at the 24th Street alignment in central Paso Robles. SR 46 continues east passing commercial, light industrial, low-density residential, agricultural, and open space parcels in the City of Paso Robles. This section of SR 46 (US 101 to Airport Road) is the only section that is a 4-lane divided highway. From the Paso Robles east city limit, through Whitley Gardens, and on to Shandon, SR 46 cuts a relatively straight path through open agricultural (vineyards) and ranch land. SR 46 is contiguous with SR 41 from their junction east of Shandon to a point 6.5 miles east near Cholame where the two routes diverge. SR 41 heads northeast while SR 46 continues easterly to the San Luis Obispo/Kern County line, which is also the District's boundary with District 6.

In District 6, SR 46 passes through western Kern County into the Central Valley as a 2 to 4 lane expressway. SR 46 terminates at SR 99 north of the City of Bakersfield. The District 6 TCR for SR 46 calls for a 4-lane expressway concept for its entire length.

This TCR only covers the portion of SR 46 located within District 5 boundaries, unless otherwise specified. All references to SR 46 in this document for technical or analytical purposes pertain to the corresponding segments and sub-segment in District 5.



Area Description and Trends

SR 46 lies within the North County San Luis Obispo Planning Area. North County includes the cities of Atascadero and Paso Robles, extensive open space, vineyards, and other agricultural land, and the unincorporated communities of Templeton, Shandon, Cholame, Creston, San Miguel, Garden Farms, Whitley Gardens, and Heritage Ranch. Several wineries, Lake Nacimiento and related development, and the greater portion of Camp Roberts Military Reservation are special features of the North County area.

The City of Paso Robles and surrounding area continue to be the growth center of the North County. The population is now over 29,000, according to estimates by the California Department of Finance. Increased residential growth is due to the relatively inexpensive land and development costs as compared with the coastal areas. Investment in the historic downtown area quickly resumed in the wake of destruction and disruptions from a major earthquake in December 2003. Extensive development of vineyards and wineries along with business and industrial expansions has contributed to the growth in the North County area. Several large residential developments have been proposed along the SR 46 East corridor. The County's update of the Shandon Area Plan will likely provide for significant additional development, as well.

Corridor Concerns

SR 46 East is a designated Safety Corridor. The route has high traffic volumes, which include the highest percentage of truck traffic for all routes in the region, nearly 21 percent or at least 4,000 per day. As traffic volumes increase, passing opportunities on the two-lane portion of the route diminish.

ROUTE SEGMENTATION

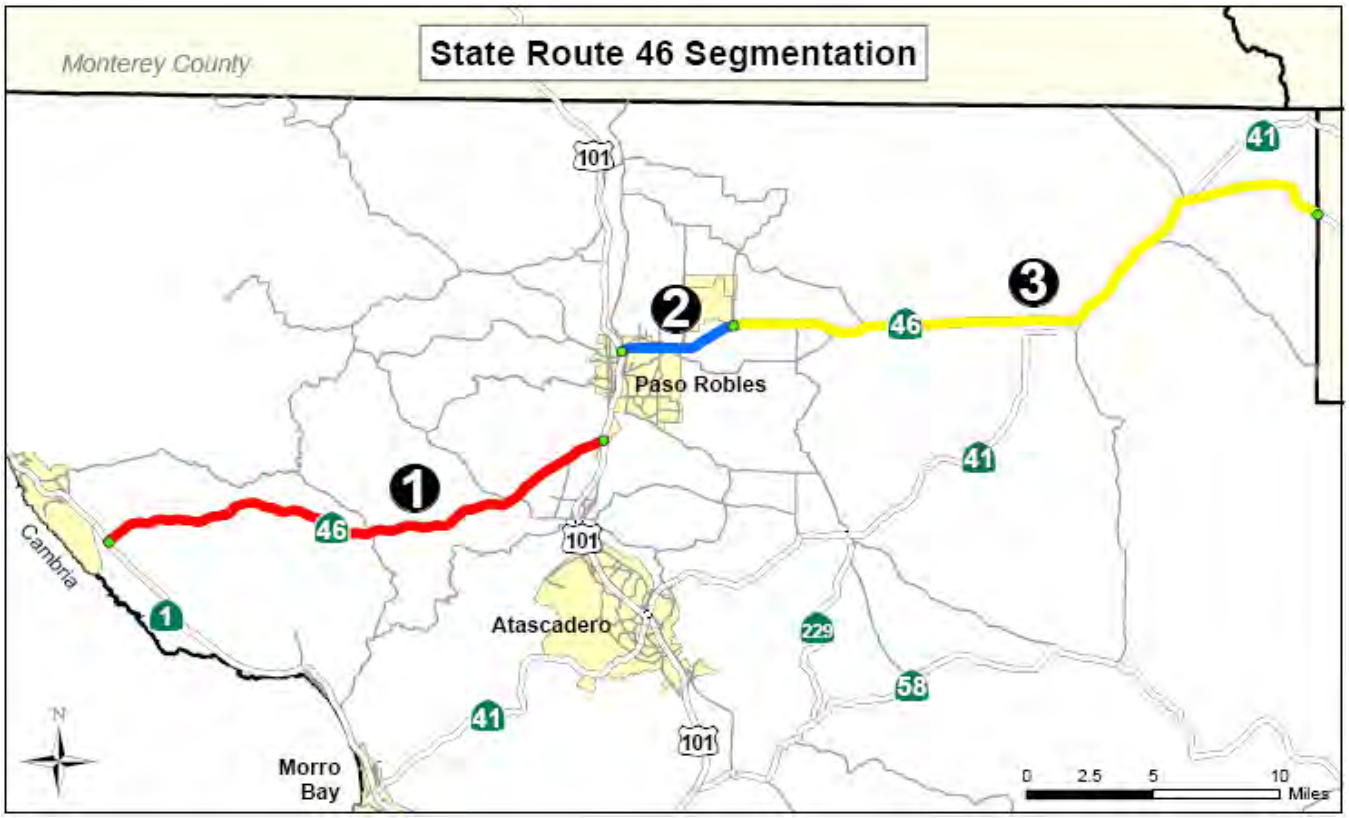
SR 46 has been divided into three segments, two of which were further divided into sub-segments (Table 1.1). The segments and sub-segments were developed based on urban boundaries, changes in functional classification, significant changes in terrain, and changes in the function or use of the route. The segments are defined by post-mile measures and by commonly identifiable jurisdictional boundaries or landmarks.

The segments and sub-segments are the basic units of observation and the route concept is based on the technical analysis of the level of service (LOS), travel volumes, forecasts, and collision rates determined along each segment. Segment maps and individual data sheets with technical descriptions for each of the five sub-segments are included in Appendix C.

Table 1.1

SR 46 TCR Segments
San Luis Obispo County

SEG #	SUB-SEG	BEGIN POSTMILE	END POSTMILE	SECTION BEGIN -	SECTION END	TOT. MI.
1	**-**	**R 0.15**	**R 21.97**	**Jct. Rt. 1/46 -**	**South Jct. Rt. 101/46**	**21.82**
2	**-**	**29.76**	**34.64**	**North Jct. Rt. 101/46 -**	**Jardine Road**	**4.88**
	2A	29.76	32.28	North Jct. Rt. 101/46 -	Airport Road	2.52
	2B	32.28	34.64	Airport Road -	Jardine Road	2.36
3	**-**	**34.64**	**60.85**	**Jardine Road -**	**SLO/Kern County Line**	**26.21**
	3A	34.64	48.62	Jardine Road -	West Jct. Rt. 41/46	13.98
	3B	48.62	55.10	West Jct. Rt. 41/46 -	East Jct. Rt. 41/46	6.48
	3C	55.10	60.85	East Jct. Rt. 41/46 -	SLO/Kern County Line	5.75
					Total SR 46 Miles:	52.91



CORRIDOR ANALYSIS

The TCR uses traffic forecasts based on local and regional land use designations to project travel demand over a 20-year period. The traffic forecasts are used to determine the resulting level of service (LOS) and to estimate the measures required in order to maintain acceptable levels of service on the state facility. If land use patterns, development rates and modal splits change significantly, the time frame in which capital improvements to mitigate congestion are needed will also change. This document recommends improvements on both urbanized and non-urbanized segments of the route. See Appendix E and F for LOS Methodology and Detailed Analysis.

Operating Conditions and Segment Summaries

Segment 1 (P.M. R 0.15 to R 21.97).

Segment 1 of SR 46 originates at SR 1, approximately 4 miles south of Cambria, an unincorporated community. From SR 1, the segment climbs into the Santa Lucia mountain range, passing productive agricultural fields and grazing lands. From the crest of the mountains, the route winds down toward the Salinas River Valley and the south end of the City of Paso Robles. Extensive vineyards and several wineries are located along the eastern portion of Segment 1. A major shopping center is located at the end of the segment, adjacent to the southwest quadrant of the 46-West/101 interchange. This center generates traffic from throughout the county. Recreational opportunities and tourist facilities located on the coast also draw motorists to segment 1 of SR 46. This 2-lane highway segment currently operates at LOS B-C with an Annual Daily Traffic (ADT) of 3,700 to 6,900 (Caltrans, 2006).

Route 101/46 Segment Connecting 46 West and 46 East

SR 46 is coincident with US 101 for the 3.8 miles between the 46 West/101 junction and the 101/46 East junction. The importance of this segment connecting 46West and 46East must not be overlooked. This freeway segment of Route 101 carries commuter traffic, significant interregional and local traffic, and provides connections to major recreational travel destinations on the coast via State Routes 41 and 46 West. This section is heavily influenced by Friday and Sunday interregional recreational travel. Travel in this area experiences Annual Average Daily Traffic volumes of 37,900 (Caltrans, 2004). The dominant traffic flow is southbound in the morning and northbound in the evening with a 58% directional split. Any modifications made to either 46 West, 46 East, or the segment of Route 101 connecting the two will have a considerable impact on the adjacent corridor and must be taken into account when planning for future projects along these corridors. See Appendix D for more Route 101 details.

Segment 2 (P.M. 29.76 to 34.64).

Segment 2 begins at the 101/46 East interchange at the 24th Street alignment in central Paso Robles and continues to Jardine Road on the edge of the Paso Robles urban boundary. Sub-segment 2A is a four-lane divided highway extending from US 101 to Airport Road with signalized intersections at Buena Vista and Golden Hill Roads. This sub-segment currently accommodates 25,600 ADT (Caltrans, 2006). This sub-segment, which includes the 101/46 East interchange, operates poorly during peak hours and especially summer weekends, with peak hour LOS ranging from C-F. Sub-segment 2B continues from Airport Road to Jardine Road as a two-lane highway, but will be soon widened to a four-lane facility, which will improve passing opportunities for motorists. ADT ranges 16,700 to 24,500 (Caltrans, 2006) for Sub-segment 2B, which operates at LOS E.

Segment 2 carries heavy interregional traffic attracted to tourist and recreational opportunities on the coast and in San Luis Obispo to the south as well as goods movement between US 101 and the Central Valley. Segment 2 is also increasingly impacted by regional and local traffic. Regional traffic is generated by numerous wineries with tasting rooms and events facilities, light industrial facilities,

and the Cuesta College North County Campus, which opened in 1998; local traffic is generated by businesses and residential developments located along the corridor. At present, trucks constitute more than 20 percent of vehicles on the segment. Interregional goods movement accounts for approximately half the truck volume; regional or local truck trips constitute the remainder.

Regional and local traffic will continue to grow with build-out of the City of Paso Robles General Plan. A number of regionally significant land use proposals are currently being considered along or near this section of SR 46 East, which would increase demand on this segment of highway. More than 2,000 residential lots and more than 1,000 acres of new commercial, office, industrial, and recreational development are anticipated in the vicinity of Segment 2 by the year 2025. The current enrollment at the Cuesta College North Campus, which opened in 1998, is less than 3,000; enrollment of 12,000 is projected at build-out. Traffic volumes along Segment 2 are anticipated to grow at a rate of up to 1,057 vehicles annually by the year 2030.

Interchange operations along Segment 2 are more critical at the present time than roadway operations. The 101/46 East signalized interchange is heavily impacted on weekends, when recreational traffic from the Central Valley and regional trips to area wineries along the segment are highest. At such times, long lines of vehicles form in the left-turn lanes of westbound SR 46 awaiting opportunities to enter US 101 southbound. Any improvement to this interchange must be designed to maintain the integrity of US 101.

Owing to the growth of traffic and attendant concerns related to safety, operations, and capacity, Segment 2 has been a focus of concern for the Department, the City of Paso Robles, and the San Luis Obispo Council of Governments (SLOCOG) in recent years. Segment 2 was the subject of a Draft Corridor Study prepared for SLOCOG in 2000 and has been the site of several highway safety and operational improvement projects, such as median barriers, in recent years. A project has been programmed to widen Segments 2B and 3 from a two-lane highway to a four-lane expressway. The Department has initiated a Comprehensive Corridor Study, a collaborative planning effort addressing mobility improvement throughout this corridor and strategies for transportation solutions for this segment. The study will assess options for achieving acceptable long-term operating levels in this segment (from 101/46 East junction to Jardine Rd.).

<u>Segment 3 (PM 34.64 to 60.85).</u>
Segment 3 begins at Jardine Road and ends at the San Luis Obispo/Kern County line. Sub-segment 3A extends to PM 48.6 near the community of Shandon. State Route 41 joins SR 46 at this point. The two routes are coincident over Sub-segment 3B, which ends just past the community of Cholame, at the east junction of State Routes 46 and 41. From this point, SR 41 diverges to the northeast, while Sub-segment 3C of SR 46 continues to the county line, which is also the east boundary of District 5.

Segment 3 carries primarily interregional traffic east and west between the Central Coast and Central Valley through areas of agriculture, grazing land, and open space. Segment 3A currently operates at LOS D with an ADT of 13,700 to 16,700, Segment 3B at LOS D with an ADT of 13,700, and Segment 3C at LOS D with an ADT of 8,000 (Caltrans, 2006). Segment 3 along with Sub-segment 2B will see a significant investment of public funds over the next ten years (A map representing STIP projects is included in Appendix G). The widening project along Segment 3 responds to existing and projected demand along the corridor.

Environmental Resources and Issues

The purpose of this section is to provide a broad overview of environmental resources and issues to be considered in planning for appropriate transportation facilities along the SR 46 corridor in San Luis Obispo County.

Scenic and Aesthetic Resources

Most of SR 46 in District 5 (from SR 1 to the Wye intersection with SR 41 at PM 55.1) is eligible for designation as a California Scenic Highway. From SR 1 to the crest of the first mountains (at approximately PM 5.0), the highway lies in the California Coastal Zone. This part of the highway affords a spectacular scenic panorama extending beyond Morro Bay and Montana de Oro in the south to San Simeon and beyond on the north coast. As the highway crosses the Santa Lucia mountain range it provides views of oak-studded open space, productive vineyards, and scattered homesteads and wineries. Segment 2 passes urban and semi-rural development in Paso Robles, the only urban area along SR 46 in District 5. Segment 3 offers views of rolling hills, mountains, and ranch land. After periods of rain the hills are covered in lush green grasses. Colorful wildflowers are abundant in the late winter/early spring months.

Cultural Resources

Areas of cultural sensitivity have been identified at numerous locations along the SR 46 corridor in San Luis Obispo County. Potential project-related impacts to archaeological, cultural, and historical resources must be evaluated in compliance with the California Environmental Quality Act (CEQA). Environmental compliance could require further investigation of cultural sites, as well as redesign of the project to avoid these resources or mitigate impacts.

Biological Resources

Potential project related impacts to biological resources must be evaluated in accordance with CEQA, as well. Potential biological resource impacts on SR 46 include the following: impacts to oak woodlands, wetlands, steelhead and critical habitat, rare plants, San Joaquin kit fox and habitat, and California red-legged frog and critical habitat, and displacement and disruption to movement and dispersal patterns of animals such as pronghorn antelope and kit fox. Segment 1 lies entirely within watersheds that support California red-legged frogs and steelhead. Widening segments 2 and 3 could present additional barriers to animal movements by further dividing large, contiguous wildlife habitat areas.

Air Quality

The County of San Luis Obispo air quality exceeds the state standard for both ozone and air-borne particulate matter. San Luis Obispo County has prepared an air quality attainment plan as required under the California Clean Air Act (CAA). Transportation plans, programs and projects must conform to the attainment plan. The county meets Federal conformity standards for air quality. North County air quality is consistently worse than South County San Luis Obispo. Monitoring stations in Paso Robles and Atascadero record the most excessive ozone levels.

Transportation Concept

The Department strives to provide a consistently high level of service on SR 46. In general, District 5 targets a peak hour LOS of C or better on the state highway system under its jurisdiction. At this LOS, traffic flows will be stable, with some restrictions on speed but with adequate spacing between vehicles. Freedom to maneuver within traffic will be slightly restricted; e.g., lane changes will require vigilance on the part of the driver. There will be minimal delay at LOS C: minor traffic incidents will be absorbed although there may be local deterioration in service, with queues forming behind any significant blockage. At LOS C, drivers and passengers should experience qualitatively adequate

service on a freeway or conventional facility. In urban settings, such as Segment 2, LOS C/D cusp is acceptable. When evaluating urban state highway segments with traffic signals, intersection analysis is a better indicator of corridor performance than through-traffic flow analysis due to the high cross traffic demand at intersections along these urban segments. As such, the development of the transportation concept for Segment 2A, an urban segment with a number of traffic signals, relies on intersection analysis and Peak Hour LOS data, rather than the mainline operating characteristics. See Appendix E and Appendix F for LOS Methodology and Detailed Analysis.

Several different traffic characteristics influenced the designation of SR 46 East as a Focus Route in the Department's 1998 Interregional Transportation Strategic Plan (ITSP) (Appendix H). First, the route is important for the interregional traffic it carries between the Central Coast and the high-growth urbanized areas of the Central Valley. Second, SR 46 is a major goods movement route from US 101 to I-5 and across the San Joaquin Valley to SR 99. Additionally, the route provides operational flexibility for emergencies across multiple counties from coast to valley. In order to meet the Focus Route concept, the ITSP states that the standard for the first portion of SR 46 East (Segment 2) is four-lane freeway and the remainder four-lane expressway.

SEG-MENT	BEGIN POST MILE	END POST MILE	DESCRIPTION	ROUTE CONCEPT
1	R0.15	R21.97	Jct. Rt. 1/46 - South Jct. 101/46 Sep.	LOS C or better
2	29.75	34.64	North Jct. Rt. 101/46 Sep. - Jardine Rd.	Peak LOS C/D cusp or better
3	34.64	60.85	Jardine Road - SLO/Kern County Line	LOS C or better

RECOMMENDED ACTIONS TO ACHIEVE CONCEPT LOS

ALL of SR 46
- Support local and land use decisions that will accommodate the concept facility
- Ensure any improvements to the facility will accommodate the concept facility
- Construct operational improvements for the entire length of SR 46

Segment 1
- Upgrade shoulders to standard widths for bicycle and motorist safety
- Install left-hand turn pockets where appropriate
- Modify and improve US 101/46West Interchange

Segment 2
- Improvements to US 101/46East Interchange
- Upgrade to multi-lane access-controlled facility from US 101 /SR 46 intersection to Jardine Road with improvements to the local road system
- Complete Comprehensive Corridor Study to evaluate alternatives for accommodating traffic within acceptable operations and identify appropriate phasing.
- Intersection improvements between Jct. of US 101 and Jardine Road
- Complete frontage road system and develop parallel arterial system, including network for bicycle travel (non-motorized).

Segment 3
- Widen to 4-lane expressway from Jardine Rd. to San Luis Obispo/Kern Co. Line
- Upgrade shoulders to standard widths for bicycle and motorist safety

Strategies to Achieve Transportation Concept

Segment 1

The Route Concept for Segment 1 is a 2-Lane conventional highway at LOS C. Operational improvements such as left-hand turn pockets and passing lanes will help to mitigate the increase in traffic volumes due to increasing development activities related to viticulture and tourism. In areas where wineries are located or permitted in the future, parallel local roads and driveway consolidation are encouraged. The Highway 46 West Corridor Study completed in April 2000 by the San Luis Obispo County Public Works Department fully addresses these issues. The 46 West/101 interchange is being reconfigured pursuant to a consultant-prepared project study report (PSR), funded by the City of Paso Robles, in consultation with the Department and SLOCOG. Along this segment, State Highway Operation and Protection Program (SHOPP) rehabilitation projects include slide repair and slope stabilization.

Route 101/46 Segment Connecting 46 West and 46 East

The Department recommends ramp metering as a near-term improvement to preserve operational capacity of this Route 101/46 segment. Near term safety improvements, such as a median barrier, will be implemented. The US Route 101 TCR's recommended actions for this segment include "ensure any improvements to the facility will accommodate a future 6-lane facility". See Appendix D for more Route 101 details.

SLOCOG 2005 Regional Transportation Plan recommended improvements for this segment:

- Operational Improvements such as auxiliary lanes
- Reconstruct interchanges to increase capacity and accommodate future widening of US 101 to six lanes as operations and/or safety warrants
- Improving the regional frontage and parallel road system, with emphasis on intercommunity connections
- Improving the regional park-n-ride lot system and enhance transit express access
- Implement recommendations of Central Coast ITS Plan when warranted
- Improve and promote Transportation Demand Management measures

Segment 2

Regardless of the future segment volumes, intersection performance is the critical measure of operations for Segment 2. As long as sub-segment 2A remains as is, operations at existing signalized intersections at 101/46 East, Buena Vista, and Golden Hill Roads will continue to deteriorate and additional operational improvements may be warranted at Airport Road and possibly other locations. Intersection improvements must provide motorists with opportunities to make left turn movements while maintaining through traffic on the mainline in both directions. They must also provide connections across the corridor for pedestrians and bicyclists, thereby maintaining local circulation and fostering non-motorized modes of transportation.

The transportation concept for Segment 2 has historically been a multi-lane access-controlled facility. This concept is supported by the 1998 Interregional Transportation Strategic Plan and the 1964 Freeway Agreement. The Department is undertaking a Comprehensive Corridor Study with SLOCOG, the City of Paso Robles, and San Luis Obispo County to assess options for achieving acceptable long-term operating levels in the segment. The Department has encouraged development of local parallel roads and driveway consolidation along the existing alignment. Connections with local roads have historically been planned in accordance with the existing Freeway Agreement.

Widening of SR 46 is planned from Airport Road (PM 32.2) to 0.6 miles East of the Shandon roadside rest area (PM 50.2). Construction to widen SR 46 from a two-lane expressway to a four-

lane expressway, from Airport Road to Geneseo Road (Sub-segment 2B), is underway and completion is scheduled for 2010.

Significant growth in traffic as a result of development along the 46 East corridor has necessitated the need for mitigation measures to address both project specific and cumulative impacts. Current development proposals and the 2003 update of the Paso Robles General Plan have provided the impetus to clarify matters such as right-of-way needs, appropriate access, intersection locations, acceptable interim improvements, long-term improvements, and funding contributions from project proponents. The Paso Robles General Plan Circulation Element (Appendix I) details circulation deficiencies in the corridor and includes the following findings:

> "Through the year 2025, the current two (2) to four (4) lane segments of State Route 46 within Paso Robles will need to be upgraded. Specifically, as feasible, the four (4) lane segment from US 101 to Golden Hill Road would need to be expanded to six (6) lanes and the two (2) lane segment from Airport Road to Jardine Road, upgraded to four (4) lanes, or to a 4-lane freeway or a combination of these alternatives. Although with sufficient right of way such widening seems cost effective and logical, the lack of interchange capacity and flexibility to expand at US 101/State Route 46 dictates the need to consider potential alternatives."

The Comprehensive Corridor Study that is currently underway will address these matters and evaluate alternatives, including a multi-lane access-controlled facility through Segment 2, for accommodating future traffic levels.

Segment 3

The Route Concept for Segment 3 is four-lane expressway to the Kern County Line. The Route 46 Corridor Improvement Project includes a series of STIP projects that will widen SR 46 to a four-lane expressway from Airport Road to the east junction of SR 41/46 (PM 32.15-56.0). A grade-separated interchange will be constructed at the Wye junction. A project to widen the remainder of Segment 3 from the east junction of SR 41/46 to the Kern County line to four-lane expressway was most recently programmed for Project Approval and Environmental Document (PA&ED) in the 2000 STIP Augmentation by District 6. Construction of a concrete median barrier has been completed from PM 50.7-52.7 as a short-term safety improvement.

Ultimate Transportation Corridor

The ultimate transportation corridor (UTC) is viewed as the maximum development of a state highway corridor, including parallel facilities, beyond the 20-year planning horizon. The UTC is used to identify potential widenings, realignments, future facilities and rights-of-way required to complete the development of each corridor. This information is critical for working with local and regional land use planning agencies to address right-of-way preservation and dedication techniques.

The UTC for SR 46 West is a 2-lane conventional highway and is consistent with the 20-year planning concept. The UTC for SR 46 East from Route 101 to Jardine Road, a multi-lane access-controlled facility, is also consistent with the 20-year concept for SR 46 in District 5. The concept and UTC for this segment is supported by the 1998 Interregional Transportation Strategic Plan (Appendix H) and by a 1964 Freeway Agreement. The ultimate corridor concept calls for 4-lane expressway standards from Jardine Road out to the Kern County line. The UTC for this portion of SR 46 also reflects the Department ITSP concept.

CORRIDOR MANAGEMENT

In recognition of the critical role of transportation in sustaining economic vitality, the California Statewide Goods Movement Strategy was prepared in 1998 as part of the California Transportation Plan. The Strategy is a policy and action blueprint that focuses on improving existing system efficiency, through new technology and other means, to maximize system capacity and reliability and minimize long-term transportation system costs. The Strategy recommends that the 10 Focus Routes identified in the Department's 1998 ITSP receive the highest priority. SR 46, the major east-west route between Highway 166 to the south and Highway 156 to the north, is designated as a Focus Route. SR 46 is an important element in linking the Central Coast with the Central San Joaquin Valley in California's freight transportation system.

The significance of accommodating such strong interregional demand of goods movement and tourism directs the Department to consider and protect the mobility through this corridor. In addition to the interregional and interstate traffic, SR 46 also needs to accommodate the daily travel by residents of Paso Robles, Cholame, Shandon and Whitley Gardens. Segment 2 through Paso Robles, in particular, requires special focus and transportation stakeholder partnership. A Corridor System Management Plan (CSMP) will be completed for the entire SR 46 corridor. The CSMP is a performance-based document that requires transportation stakeholders to agree on the best options for managing the corridor. The CSMP will explore these corridor management options by identifying congestion causes, determining corridor performance, and analyzing alternative improvement scenarios. The CSMP is a requirement for all projects funded through the Corridor Mobility Improvement Account (CMIA) and the 2006 California 1B Bond Act, which includes the SR 46 East widening project.

SLOCOG shares the responsibility for managing local and regional travel demand on Highway 46. However, the Department and SLOCOG are charged with ensuring the highway provides the following: safe and reasonable interregional traffic flow, continuity, maintainability, bicycle and pedestrian accommodation, and efficient goods and services movement to help sustain the state's economy.

In addition to balancing local community values with a statewide perspective on interregional mobility, the Department is working to link transportation more closely with land use. This involves emphasizing inter-modal solutions, advancing new technologies and fostering strong partnerships between Caltrans, SLOCOG, transit operators, city and county representatives, resource agencies and more.

The Land Use and Transportation Connection

Because low density, single use land use patterns have increased reliance on the single occupant automobile, transportation planners have looked to land use planning as a means of influencing travel demand and reducing congestion. Strategies for concentrating activity centers can encourage pedestrian and transit travel, thereby reducing demand on the existing highway system. Since transportation and land use influence the functionality and effectiveness of each other, community goals and objectives should be evaluated in order to provide a planning guide to achieve the desired transportation service system.

The County of San Luis Obispo, City of Paso Robles, local citizen groups, and transportation planning agencies, such as SLOCOG and the Department, should work together to facilitate enhanced transportation facilities and community-supporting land use and circulation. Neither transportation nor land use planning will be successful if they are not coordinated. The TCR lays the

foundation for transportation improvements along the route through a process of inter-agency cooperation that aims to meet transportation needs, honor community values, and preserve valued environmental and cultural resources.
There is a strong connection between the Department's SR 46 TCR and the City of Paso Robles General Plan Circulation Element. Both documents detail circulation deficiencies along the corridor and provide recommendations for improved corridor safety and mobility. The TCR's recommended strategies to achieve this concept include upgrading Segment 2 of the corridor to a multi-lane access-controlled facility with improvements to the local road network. The Circulation Element supports this concept and concurrently recognizes the need for a multi-lane access-controlled facility to accommodate future traffic growth and congestion. Because the Department is responsible for managing the State Highway corridor and the City of Paso Robles is responsible for managing the local road network, interagency partnership and coordination is critical to achieving this joint goal for improved corridor mobility along SR 46.

To bridge the gap that has existed between land use, community values, and transportation, the Department has established the Office of Community Planning (OCP). The OCP mission is to promote and participate in community-based planning to promote the integration of land use, transportation, and community values. Through the Community Based Transportation Planning initiative, OCP serves as a resource to assist various planning organizations with new decision-making and evaluation processes. Caltrans has initiated outreach efforts and is developing methods promoting a more integrated land use-transportation planning approach. The Department will continue to develop resources and make them available to appropriate planning agencies, as well as continue its active participation through the Local Development Review (LDR) process.

The LDR process involves review of federal, state, and local planning or proposed development activity that has the potential to impact state transportation facilities or other resources under the Department's jurisdiction, and recommendation of conditions of project approval that eliminate or reduce impacts to a level of insignificance. LDR typically involves review of development proposals in which the Department is either a responsible (permitting) or commenting (reviewing) agency, but has no discretionary approval power over the project other than permit authority.

Context-Sensitive Solutions

Context-Sensitive Solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, and environmental values with transportation safety and performance goals.

Future improvements along SR 46 should incorporate design features that are pleasing to the eye (such as aesthetic barrier treatments and landscaping) and honor the existing built environment, historical context, and local plans, while improving traffic flow. Improvements to the route should contribute to a circulation plan that addresses the needs of motorists, bicyclists, and pedestrians. Public improvements in the respective urban and outlying suburban areas should promote walking, bicycling, and social activities that minimize use of SR 46 for local automobile trips.

The Department is taking the lead on a corridor study that will identify and evaluate specific alternatives for enhancing mobility on Segment 2 of SR 46 while respecting community and environmental values.

There is much community interest and support to complete the proposed corridor improvement projects. In January 1996, concerned local citizens formed a grassroots committee called Fix 46 to facilitate construction of safety projects and, ultimately, the conversion of the roadway from a two to four-lanes. Since 1999, several meetings and field trips have occurred to gather input from the public and local government officials. In addition, Fix 46 Committee meetings have provided a

unique forum for continuous community interaction and public input. The Department has since addressed key safety concerns along the corridor, including the addition of a median barrier.

Programming Concept Facilities

The Department takes the lead in undertaking many of the actions to improve state highways, often in partnership with the RTPA. The California Transportation Commission STIP Guidelines, in accordance with Government Code Section 14530.1, recognize that although Caltrans is owner-operator of the state highway system, the regional agencies (SLOCOG for San Luis Obispo County) have the lead responsibility for resolving urban congestion problems, including those on state highways. The Department is charged to plan and provide for interregional travel and goods movement. The Department programs and participates in funding projects according to state and regional priorities, type of project (i.e., capacity increasing or safety and operational improvements), location (metropolitan or rural), and traffic characteristics (local, regional, interregional). SR 46 East, within the City of Paso Robles, has an urban designation.

Local agencies will have primary responsibility for enhancing transit, intermodal facilities and services and approving the local land uses that generate increasing highway volumes in their jurisdictions. The Department supports inclusion of related provisions in Regional Transportation Plans and other regional and local planning and programming documents to assure consistency with the system planning and maximize the capacity and utility of SR 46.

Appendix G includes a map showing the locations of projects along SR 46 that are eligible for funding through the State Transportation Improvement Program (STIP).

Consideration of Alternatives

The last decade has seen a new emphasis on interconnections and interdependencies both in the field of transportation planning and in institutional settings for planning. With the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its successor Transportation Equity Act for the 21st Century (TEA-21), the federal government set a new course for planning and funding transportation facilities. Both pieces of legislation: (1) stress interconnectivity among transportation modes including roadways, transit, bicycles, rail, air and shipping; (2) enlarge the roles of regional planning agencies; and (3) require the preparation of regional and state transportation plans that are comprehensive and linked. The Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU) continues this basic framework. California Senate Bill 45 of 1997 directed planning institutions to address common issues as partners.

Alternatives for accommodating transportation needs related to projected growth along the SR 46 corridor are somewhat limited at this time. The Department anticipates that as planning partnerships evolve and new incentives and commitments are developed to enhance the attractiveness and effectiveness of transit, transportation demand management (TDM) and new land use patterns, these changes may reduce the need to expand the highway system. In some sections of SR 46, however, acceptable operations for interregional traffic are likely to require facility improvements that limit highway access from the local roads system and allow free-flow travel with interchanges or grade-separated crossings. The Department works with local agencies to develop comprehensive, all-inclusive approaches to easing congestion and improving safety. Many alternatives may be enhanced through Intelligent Transportation Systems (ITS) elements, which tend to optimize operations on existing as well as expanded facilities.

The TCR is informed by and responsive to Regional Transportation Plans and General Plans adopted by the regional partners and units of local government.

Alternatives to Highway Travel

The projected growth in North San Luis Obispo County over the next 20 years will increase travel demand on SR 46 significantly. Transportation alternatives that could be expected to reduce the impact of growth in more urban settings are not likely to have as great an impact on the SR 46 corridor. These include alternative modes of travel, transportation demand management, measures to control the flow of traffic, and new land use patterns. The potential for each of these to affect travel demand on SR 46 is explored below.

There is no parallel passenger rail line along the SR 46 corridor. However, the Union Pacific Rail line that carries both freight and Amtrak passengers runs north-south through Paso Robles. Amtrak runs bus service between Paso Robles and Hanford in the Central Valley, via SR 46, providing access to San Joaquin Valley rail for coast passengers and vice versa. Greyhound and private chartered buses provide service to the Valley via SR 46.

Designated bike lanes are not present along the entire stretch of SR 46 in San Luis Obispo County. Consistently wide shoulders, sufficient for accommodating bicycle use, should be a priority for Segment 1 because of existing heavy recreational bicycle use. Segment 2 is currently open to bicycle travel. Any portions upgraded to freeway standard will require the provision of a reasonable, safe, and convenient alternate route. The expectation is that bicycle travel would be accommodated by improvements on the local road network if such a facility was realized. Segment 3 is currently open to bicycle travel as well.

Although goods movement and tourist travel are not likely to be diverted from the highway, opportunities to reduce regional and local travel, especially along Segment 2, should be pursued.

Urban transit service is provided by Paso Robles Community Area Transit Service (PR CATS) a fixed route system that serves the City. PR CATS routes allow residents east of US 101 to reach downtown Paso Robles, school children at all levels to access their campuses via bus, and residents from throughout the city to reach the Cuesta College campus. The PR CATS connects with RTA, the regional transit system in downtown Paso Robles, thereby extending transit mobility for both Paso Robles residents and residents of the unincorporated area. RTA runs regional bus service from Paso Robles to San Luis Obispo and coastal towns, such as Pismo Beach, via US 101. Privately sponsored bus tours to area wineries can also reduce potential conflicts that exist between through traffic and slow-traveling vehicles making stops to visit wineries along both SR 46 West and SR 46 East. Both public transit and the winery tours should be supported by easily identified park and ride facilities. All these services will lessen the impact of increasing development along Segment 2 to some degree and should be promoted.

Transportation Demand Management (TDM) includes a range of techniques to reduce traffic congestion including ridesharing, flexible work hours, teleworking, and targeted pricing of parking (by area, vehicle occupancy or time of day or duration of stay). TDM may have limited applicability and/or effect, however, in managing local traffic along SR 46 East.

Intelligent Transportation Systems (ITS)

ITS applies advanced technologies and management strategies to increase the safety and efficiency of the surface transportation system. An example of this is the use of Variable Message Signs, traffic control devices used to provide motorists en-route traveler information and increase travel efficiency. Over the next 20 years, the deployment of ITS in District 5 will bring improvements to SR 46. Improving emergency response time and improving traveler information are the focus of ITS efforts on SR 46.

The Central Coast ITS Implementation Plan, completed in November 2007, provides a framework for developing and integrating a variety of ITS activities in Department Districts 4, 5, 6 and 7. A cornerstone of the Central Coast SDP is the Traffic Management Center (TMC) in the San Luis Obispo area. The TMC is located at the District 5 Office with staff from the Department and CHP, who monitor real time traffic conditions, provide pre-trip and enroute information to travelers, coordinate emergency response efforts, and manage traffic flow.

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1997 Cooperative Agreement between SLOCOG, the City of Paso Robles, San Luis Obispo County, and the Department regarding development at the 46 West/101 Interchange and the future disposition of this facility.

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Appendix A: Definitions, Acronyms, and Abbreviations

Appendix A

Definition of Terms

Arterial	A general term denoting a highway primarily for through traffic usually on a continuous route.
Collector	Surface street providing land access and traffic circulation within residential, commercial, and industrial areas.
Expressway	An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.
Freeway	A divided arterial highway with full control of access and with grade separations at intersections.
Functional Classifications	A grouping of streets and highways sorted as to the character of service they are intended to provide.
Level of Service (LOS)	Term used to describe the quality of operation of a highway facility. It is a qualitative measure of the effect of such factors as, speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, convenience, safety and operation cost. In this report, LOS is based on peak traffic hours. On urban street systems, the quality of flow is most frequently controlled by traffic conditions at signalized intersections. The flow characteristics are defined in six levels of service.
LOS A	Describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions.
LOS B	Is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
LOS C	Is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass.
LOS D	This level approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volumes and temporary restrictions to flow may cause substantial drops in operating speeds.
LOS E	This level cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages for brief periods of time.
LOS F	Describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.

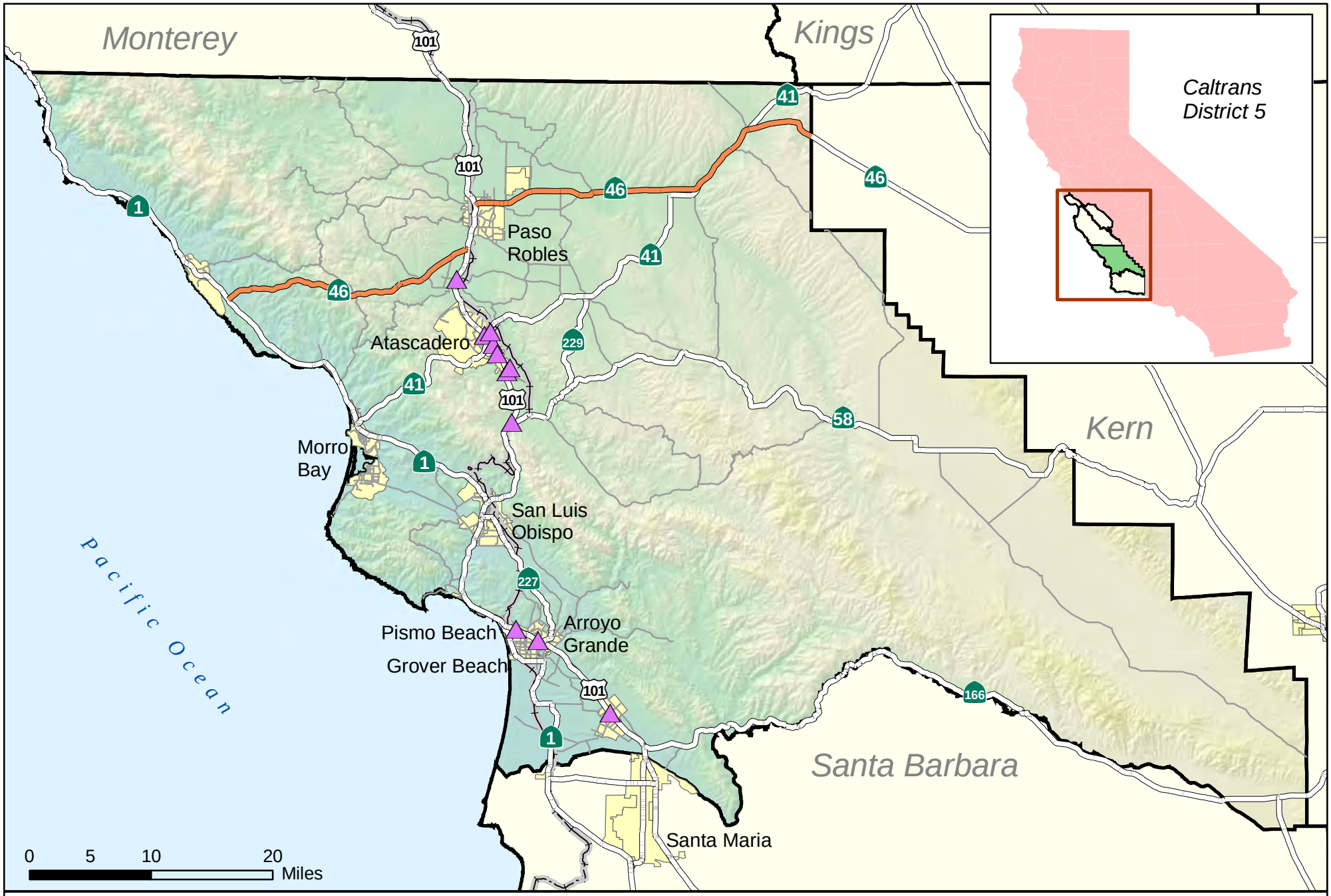
Rural	An area of under 5000 population
Rural Local	Serve primarily to provide access to adjacent land; and provide service to travel over relatively short distances as compared to collectors or other highway systems.
Rural Major Collector	1. Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance, nearby larger towns or cities, or with routes of higher classification. 2. Serve the more important intra-county travel corridors.
Rural Minor Arterial	1. Link cities and larger towns with major traffic generators that are capable of attracting travel over similarly long distances and form an integrated network providing interstate and inter-county service. 2. Be spaced at such intervals, consistent with population density, so that all developed areas of the state are within a reasonable distance of an arterial highway. 3. Provide service to corridors with trip lengths and travel density greater than those predominantly served by rural collector or local systems. These routes should be expected to provide for relatively high overall travel speeds, with minimum interference to through movement.
Rural Minor Collector	1. Are spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road. 2. Provide service to the remaining smaller communities. 3. Link the locally important traffic generators with their rural hinterland.
Rural Other Principal Arterial	All non-Interstate Principal Arterials. 1. Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel. 2. Serve all urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over. 3. Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.
Rural Principal Arterial – Interstate	The Interstate system consists of all presently designated routes of the Interstate System.
Urban	An area of 5000 to 50,000 population.

Urban Collector	The collector street system provides both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. In the central business district, and in other areas of like development and traffic density, the collector system may include the street grid, which forms a logical entity for traffic circulation.
Urban Local	Comprise all facilities not on one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher order systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged.
Urban Minor Arterial	Interconnects with and augments the urban principal arterial system and provides service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system. The minor arterial street system includes all arterials not classified as a principal and contains facilities that place more emphasis on land access than the higher system, and offers a lower level of traffic mobility. Such facilities may carry local bus routes and provide intra-community continuity, but ideally should not penetrate identifiable neighborhoods. This system should include urban connections to rural collector roads where such connections have not been classified as urban principal arterials.
Urban Other Principal Arterial	This system consists of all non-Interstate principal arterials.
Urban Principal Arterial – Interstate	The interstate system consists of all non-Interstate principal arterials.
Urban Principal Arterial – Other Fwys/Expwys	Connecting links of non-Interstate rural principal arterials. Connecting links of rural minor arterials.

Terms Used on Data Sheets	
Description:	Provides start and finish junctions, boundaries or other features of the identified segment.
Functional Classification:	1992 Functional Classification Maps developed by DOT in cooperation with U.S. DOT, FHA and counties.
National Highway System:	Included are all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.
Interregional Route System:	A set of interregional state highway routes, outside the urbanized areas, that provides access to, and links between, the state's economic centers, major recreational areas, and urban and rural regions.
Type of Facility:	C = Conventional, E = Expressway, F = Freeway, X = Unconstructed State Highway.
Type of Terrain:	Terrain describes the adjacent topography as to its effect on LOS and construction cost. M = Mountainous, F = Flat, R = Rolling.
Number of Lanes:	The total number of through lanes in both directions.
Lane Width, Shoulder Width, R/W Width, Median Width:	The width in feet.
ADT (present):	*Average Daily Traffic* – The average 24 hour volume, being the total number of vehicles during a stated period divided by the number of days in that period.
Growth Factor:	The 20-year Growth Rate expressed as a percentage of current AADT.
ADT (Future 2020):	ADT based on highway improvements for the concept horizon twenty years in the future.
Peak Hour Volume:	The number of vehicles passing a given point during a specified period of time at Peak Hour.
Directional Split:	Directional distribution of traffic during the peak hour
Peak Hour Trucks:	The percentage of truck traffic at peak hour.
Signalized Intersections:	An intersection that includes a power operated traffic control device by which traffic is regulated, warned, or alternately directed to take specific actions.
3-Year Collision Rate:	Collisions per million vehicle miles for a recent 3-year period. Rate includes the number of fatal, injury, and property damage collision only for a segment.

Statewide Collision Rate:	Statewide average collision rate for the same type of facility in comparable terrain over the same 3-year time period.
FAT:	Collisions in which fatalities occur
F & I:	Fatal and injury collisions per mile per year averaged for the three year period
V/C Ratio:	Ratio of highway volume to capacity.
LOS:	Level of Service is a measure of the speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost.
Proposed Route Concept (2020):	Most likely facility on the route to accommodate future traffic given future financial, environmental, planning and engineering factors.
Projected Peak LOS:	The peak LOS that is projected assuming construction of concept facilities.

Appendix B: State Highway System in San Luis Obispo County



Caltrans
District 5
System
Planning

N

State Route 46
State Highways
Major Roads
Rail
Urban Area
Park & Ride Lots

State Highway System
San Luis Obispo County

Appendix C: Route Segment Data Sheets and Maps

STATE ROUTE 46 - SEGMENT 1
SAN LUIS OBISPO COUNTY

SEGMENT SPECIFICATIONS

Segment	Begin	End	Description
1	R0.15	R21.97	Jct. Rt. 01/46 – South Jct. Rt. 101/46

SEGMENT CONCEPT: LOS C

LEVEL OF SERVICE

Present LOS (2006)	B – C*
20-Year LOS without Improvements	C – E*
20-Year Concept with Improvements	C*

*LOS calculations do not include SR 46West/US 101 interchange. See Intersection Analysis in Segment 1 Data Sheet for more details.

SEGMENT FEATURES

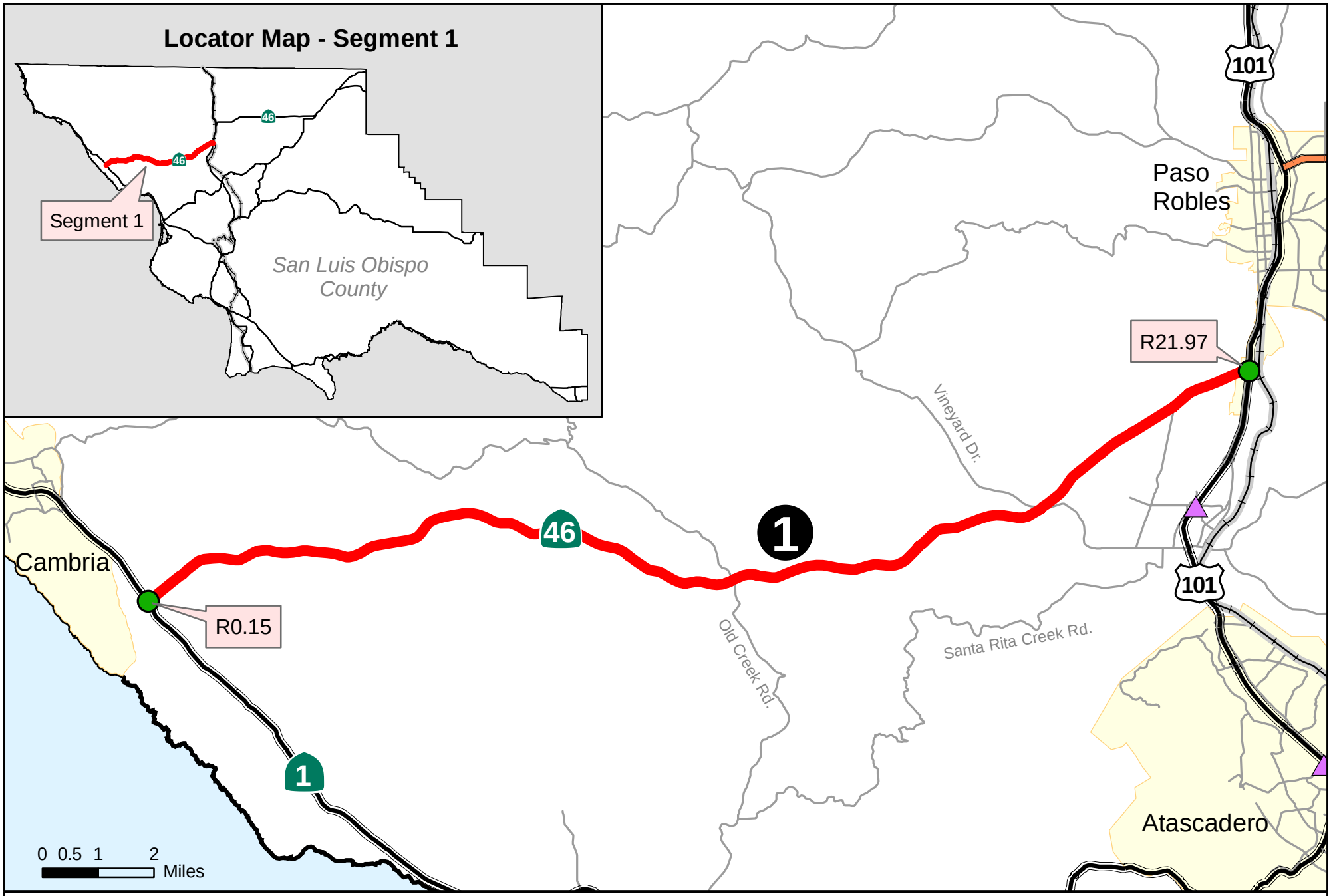
Environmental Constraints:	▪ Prime Agricultural Land ▪ Cultural Resources ▪ Air Quality ▪ Threatened and Endangered Species and Habitat ▪ Coastal Zone
Land Uses along Corridor:	▪ Agricultural and open space land ▪ Rural residential ▪ Viticulture ▪ Wineries
Major Traffic Generators:	▪ Access to ranches and wineries along 46 corridor ▪ Commuter traffic between Cambria and Paso Robles ▪ Recreational traffic between North Coast/Big Sur and US 101 ▪ Commercial development around the 101/46 West Interchange

IDENTIFIED DEFICIENCIES – EXISTING AND FUTURE

- Shoulder widths to allow for Class II bike lanes
- Left-hand turn pockets in certain locations
- US 101/SR 46 West Interchange

RECOMMENDED ACTIONS

- Upgrade shoulders to standard widths as funding allows
- Install left-hand turn pockets where appropriate
- Modify and improve US 101/SR 46 West Interchange



Caltrans District 5 System Planning

N

SR 46 Segment 1

State Highways

Post Mile

Rail

Urban Area

Park & Ride Lots

State Route 46
San Luis Obispo County
Segment 1
PM R0.15/R21.97

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	1

Segment/sub-segment Location

PM start	PM end	Length	Description
R 0.15	R21.97	21.82	Junction Route 01/46 to South Junction Route 101/46

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Mountainous	ROW Width	150 to 200 ft.
Signalized Intersections	None	Shoulder Width	0 to 20 ft.
Bike lanes	Class III	Median Width	None

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway & Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2006	2030	2006	2030	2006	2030
	3,700 - 6,900	9,258 - 17,118	0.067-0.128	0.168-0.295	B-C	C - E
	ADT Annual Growth (Vehicles)		232-426	Percent Time Spent Following	39.07-54.6% (2006)	64.9-80.5% (2030)
	Min-Max Peak Hour Volume (2006)		430 - 750			
	Min-Max Peak Hour Volume (2030)		1,200 - 2,049	Average Travel Speed	49.2-54.2 mph (2006)	43.9-50.7 mph (2030)
	Directional Split		55%			
	Peak Hour Truck		4%			

See Appendix E and Appendix F for LOS Methodology and Detailed Analysis

	Location	Delay Time (seconds)		LOS	
Intersection Analysis		2006	2038	2006	2038
	SR 46West/US 101 Interchange	31.5 (AM)	More than 80	C (AM)	F
		35.2 (PM)		D (PM)	

(Data from the Draft Environmental Document (IS/EA) US Highway 101/State Route 46 West Interchange Improvement Project (May 2008))

Collision Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.920	1.310	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.019	0.032	
Fatality & Injury Collision Rate	0.350	0.610	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	2-Lane Conventional Highway at LOS C

STATE ROUTE 46 - SEGMENT 2
SAN LUIS OBISPO COUNTY

SEGMENT SPECIFICATIONS

Segment	Begin	End	Description
2	29.76	34.64	North Jct. Rt. 101/46 Sep. – Jardine Road

SEGMENT CONCEPT: PEAK LOS C/D

LEVEL OF SERVICE

Segment 2A: Present Peak LOS (2005)	C-F
Segment 2A: Future Peak LOS (2020/2030)	F/F
Segment 2B: Present LOS (2006)	E
Segment 2B: Future LOS (2030)	A-C

SEGMENT FEATURES

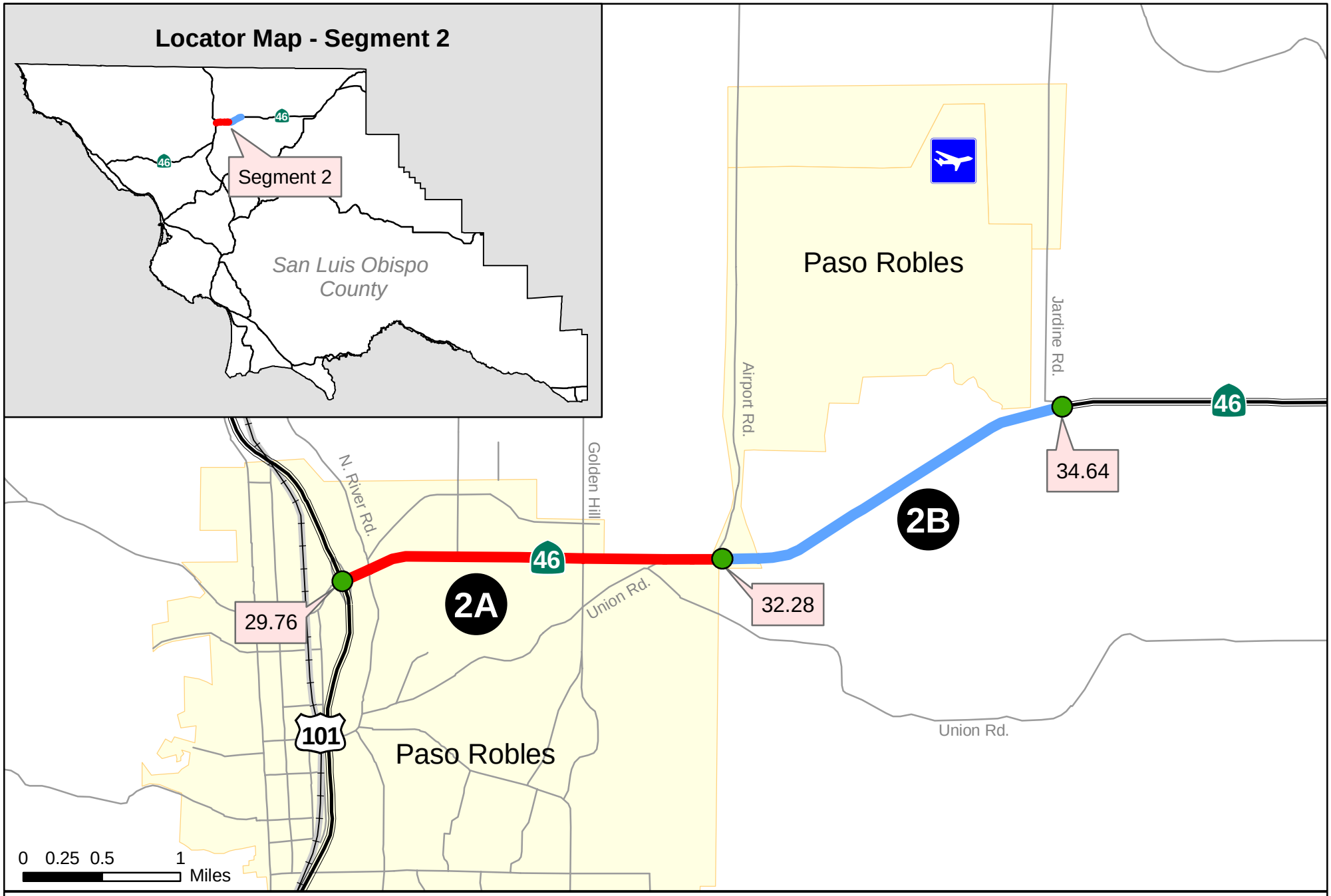
Environmental Constraints:	▪ Prime Agricultural Land ▪ Cultural Resources ▪ Air Quality ▪ Threatened and Endangered Species and Habitat
Land Uses along Corridor:	▪ Urban: commercial, industrial, residential ▪ Rural residential ▪ Agricultural: vineyards
Major Traffic Generators:	▪ Interregional traffic (goods movement and tourist) between US 101 and Interstate 5/San Joaquin Valley ▪ Regional traffic within the north San Luis Obispo County ▪ Local traffic within City of Paso Robles

IDENTIFIED DEFICIENCIES – EXISTING AND FUTURE

- Traffic backed up at US 101/SR 46 East interchange
- Traffic backed up at traffic signals at Golden Hill Road
- Mix of interregional through traffic and slower-moving regional and local traffic
- Insufficient capacity

RECOMMENDED ACTIONS

- Complete Comprehensive Corridor Study to evaluate options for accommodating traffic volumes with acceptable operations on interim and long-term basis. Implement study findings.
- Upgrade to multi-lane access-controlled facility with improvements to local road network
- Ensure any improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept facility.
- Intersection improvements between Jct. of Hwy. 101 and Jardine Road
- Complete frontage road system and develop parallel arterial system



Caltrans District 5 System Planning

N

Sub-Segment 2A - PM 29.76/32.28

Sub-Segment 2B - PM 32.28/34.64

State Highways

Rail

Post Mile

Urban Area

State Route 46
San Luis Obispo County
Segment 2
PM 29.76/32.28

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	2A

Segment/sub-segment Location

PM start	PM end	Length	Description
29.76	32.28	2.52	North Junction Route 101/46 to Airport Road

Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	2	Shoulder Width	8 to 10 ft.
Bike lanes	Class III	Median Width	15 to 46 ft.

Route Designations

Functional Classification	Urban Other Principal Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	Yes

Operating Characteristics

Traffic Analysis	ADT 2006	ADT 2030	V/C Ratio 2006	V/C Ratio 2030	Peak Hour LOS** 2005	Peak Hour LOS** 2020	Peak Hour LOS** 2030
	25,600	50,979	0.300	0.598	C-F	F	F
	ADT Annual Growth (Vehicles)		1,057				
	Min-Max Peak Hour Volume (2006)		3,375	Directional Split		65%	
	Min-Max Peak Hour Volume (2030)		6,563	Peak Hour Truck		21%	

Intersection Analysis* (x) - Signalized	Location	Peak Hour Delay Time (seconds/vehicle) 2005	Peak Hour Delay Time (seconds/vehicle) 2020	Peak Hour LOS** 2005	Peak Hour LOS** 2020	Peak Hour LOS** 2030
	(x) US 101 SB Ramps/24th. St./SR 46 E	72.4	85.8	E	F	F
	(x) US 101 NB Ramps/24th. St./SR 46 E	81.4	226.6	F	F	F
	(x) Buena Vista Drive/SR 46 E	27.4	131.6	C	F	F
	(x) Golden Hill Road/SR 46 E	more than 300	more than 300	F	F	F
	Union Road/SR 46 E	more than 300	more than 300	F	F	F
	Airport Road/SR 46 E	41.2	more than 300	E	F	F
	Mill Road/SR 46 E	more than 300	more than 300	F	F	F

(Data from the SR 46 East/Airport Rd. PSR Traffic Operations Analysis (Caltrans June 29, 2006))

** Intersection analysis was used to calculate LOS for Segment 2A due to high cross traffic demand at intersections along this urban segment. (see Corridor Analysis Section of text for details)

Collision Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.840	1.330	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.015	0.017	
Fatality & Injury Collision Rate	0.580	0.610	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept (20-Year)	Multi-lane access-controlled facility at Peak Hour LOS C/D cusp or Better*

* Currently conducting a Comprehensive Corridor Study to evaluate alternatives for accommodating traffic with acceptable operations on interim and long-term basis. Implement Study findings.

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	2B

Segment/sub-segment Location

PM start	PM end	Length	Description
32.28	34.64	2.36	Airport Road to Jardine Road

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	8 to 10 ft.
Bike lanes	Class III	Median Width	None

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	Yes

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2006	2030**	2006	2030**	2006	2030**
	16,700 - 25,600	24,529 - 50,979	0.37 - 0.57	0.33 - 0.69	E	A - C
	ADT Annual Growth (Vehicles)		326 - 1,057	Directional Split		65%
	Min-Max Peak Hour Volume (2006)		2,025-3,375	Peak Hour Truck		21%
	Min-Max Peak Hour Volume (2030)**		4,092-6,563			

See Appendix E and Appendix F for LOS Methodology and Detailed Analysis

Intersection Analysis*	Location	Peak Hour Delay Time (seconds/vehicle)		Peak Hour LOS	
		2005	2020	2005	2020
	Jardine Road/SR 46 East	more than 300	more than 300	F	F

* Data from the SR 46 East/Airport Road PSR Traffic Operations Analysis (Caltrans June 29, 2006)

** Segment 2B forecasted as a 4-Lane facility

Collision Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.430	0.600	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.021	0.023	
Fatality & Injury Collision Rate	0.160	0.280	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept (20-Year)	Multi-lane access-controlled facility at LOS C/D cusp or Better*

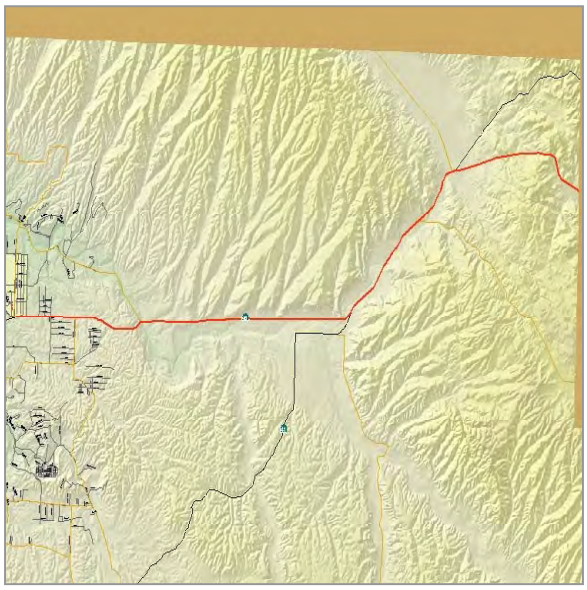
* Currently conducting a Comprehensive Corridor Study to evaluate alternatives for accommodating traffic

STATE ROUTE 46 - SEGMENT 3
SAN LUIS OBISPO COUNTY

SEGMENT SPECIFICATIONS

Segment	Begin	End	Description
3	34.64	60.85	Jardine Road – SLO/Kern County Line

SEGMENT CONCEPT: LOS C



LEVEL OF SERVICE

Present LOS	D
20-Year LOS without Improvements	D - E
20-Year Concept with Improvements	C

SEGMENT FEATURES

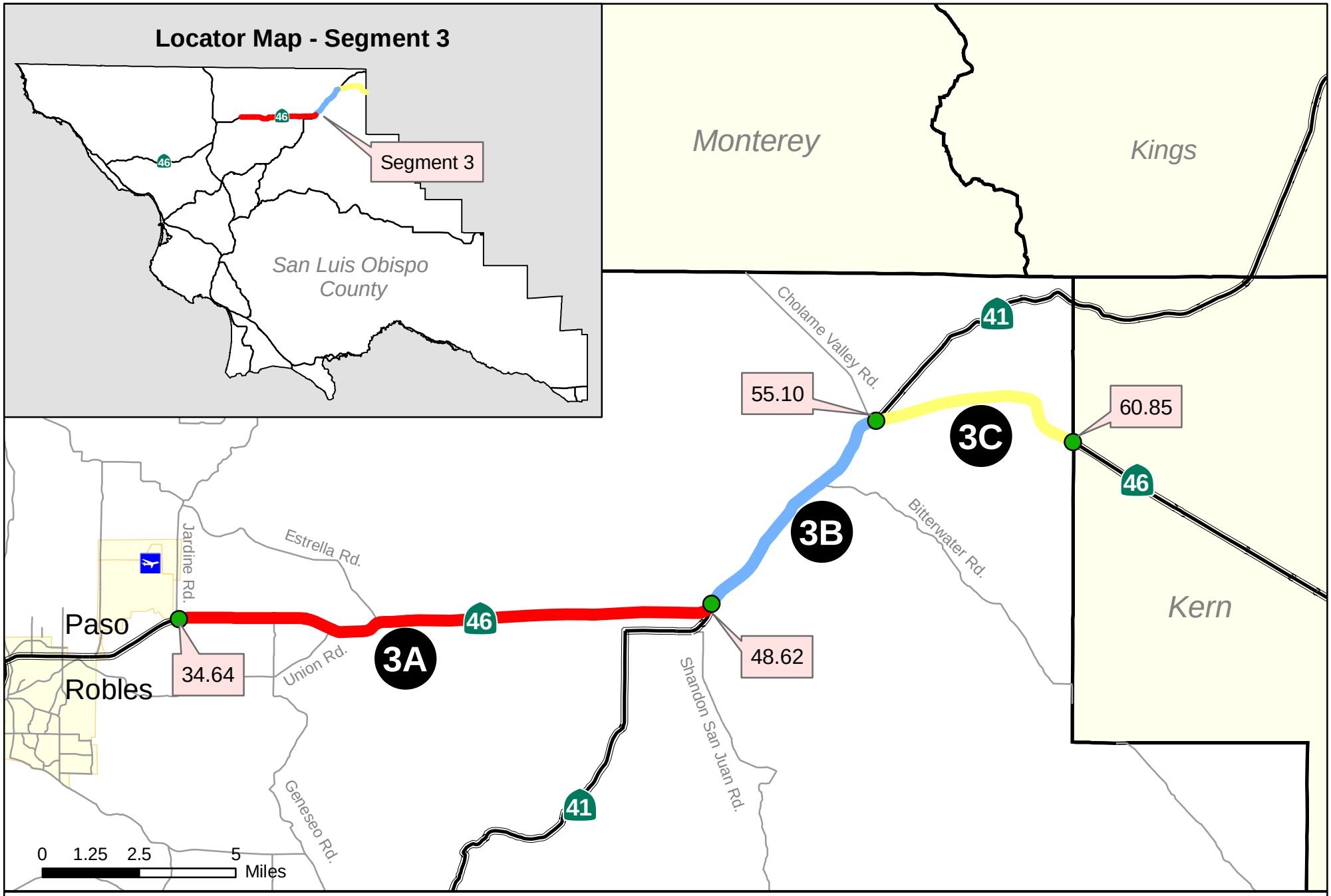
Environmental Constraints:	▪ Prime Agricultural Land ▪ Cultural Resources ▪ Air Quality ▪ Threatened and Endangered Species and Habitat
Land Uses along Corridor:	▪ Agricultural and open space land ▪ Rural residential
Major Traffic Generators:	▪ Interregional traffic between US 101/SR 41 and Interstate 5/San Joaquin Valley ▪ Goods movement traffic between US 101 and Interstate 5

IDENTIFIED DEFICIENCIES – EXISTING AND FUTURE

- Some delay due to insufficient passing opportunities

RECOMMENDED ACTIONS

- Upgrade to 4-Lane Expressway (Route 46 Corridor Improvement Project)
- Ensure any improvements to the facility will accommodate the concept facility
- Support local land use decisions that will accommodate the concept facility
- Upgrade shoulders to standard widths for bicycle and motorist safety



Caltrans District 5 System Planning

N

Sub-Segment 3A - PM 34.64/48.62

Sub-Segment 3B - PM 48.62/55.10

Sub-Segment 3C - PM 55.10/60.85

State Highways

Post Mile

Urban Area

State Route 46
San Luis Obispo County
Segment 3
PM 34.64/60.85

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	3A

Segment/sub-segment Location

PM start	PM end	Length	Description
34.64	48.62	13.98	Jardine Road to West Junction 41/46

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	2 to 10 ft.
Bike lanes	Class III	Median Width	None

Route Designations

Functional Classification	Rural Other Principal Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	Yes

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2006	2030	2006	2030	2006	2030
	13,700 - 16,700	24,529 - 25,628	0.236 - 0.288	0.419 - 0.438	D	D
	ADT Annual Growth (Vehicles)		326 - 497	Directional Split		55%
	Min-Max Peak Hour Volume (2006)		1,800 - 1,850	Peak Hour Truck		20%
	Min-Max Peak Hour Volume (2030)		4,038 - 4,092			

See Appendix E and Appendix F for LOS Methodology and Detailed Analysis

	Location	Delay Time (seconds)		LOS	
Intersection Analysis		2005	2020	2005	2020
	-	~ no data available ~			

Collision Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.350	0.600	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.009	0.023	
Fatality & Injury Collision Rate	0.120	0.280	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	4 - Lane Expressway at LOS C

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	3B

Segment/sub-segment Location

PM start	PM end	Length	Description
48.62	55.10	6.48	West Junction Routes 41/46 to East Junction 41/46

Roadbed Information

Number of lanes	2 to 4	Lane Width	12 to 18ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	0 to 8 ft.
Bike lanes	Class III	Median Width	None

Route Designations

Functional Classification	Rural Other Principal Arterial
Facility Type:	Conventional Highway & Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	Yes

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2006	2030	2006	2030	2006	2030
	13,700	25,603	0.236	0.437	D	D
	ADT Annual Growth (Vehicles)		496	Directional Split		60%
	Min-Max Peak Hour Volume (2006)		1,850	Peak Hour Truck		20%
	Min-Max Peak Hour Volume (2030)		4,067			

See Appendix E and Appendix F for LOS Methodology and Detailed Analysis

Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2005	2020	2005	2020
	-	~ no data ~			

Collision Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.490	0.680	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.000	0.025	
Fatality & Injury Collision Rate	0.150	0.330	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	4 - Lane Expressway at LOS C

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	46	Segment/(Sub-segment)	3C

Segment/sub-segment Location

PM start	PM end	Length	Description
55.10	60.85	5.75	East Junction Routes 41/46 to San Luis Obispo/Kern County Line

Roadbed Information

Number of lanes	2 to 3	Lane Width	12 to 18ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	3 to 10 ft.
Bike lanes	Class III	Median Width	0 to 6 ft.

Route Designations

Functional Classification	Rural Other Principal Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	Yes

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2006	2030	2006	2030	2006	2030
	8,000	16,688	0.553	0.982	D	E
	ADT Annual Growth (Vehicles)		362	Directional Split		60%
	Min-Max Peak Hour Volume (2006)		740	Peak Hour Truck		21%
	Min-Max Peak Hour Volume (2030)		1,688			

See Appendix E and Appendix F for LOS Methodology and Detailed Analysis

Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2005	2020	2005	2020
	-	~ no data ~			

Collision Data

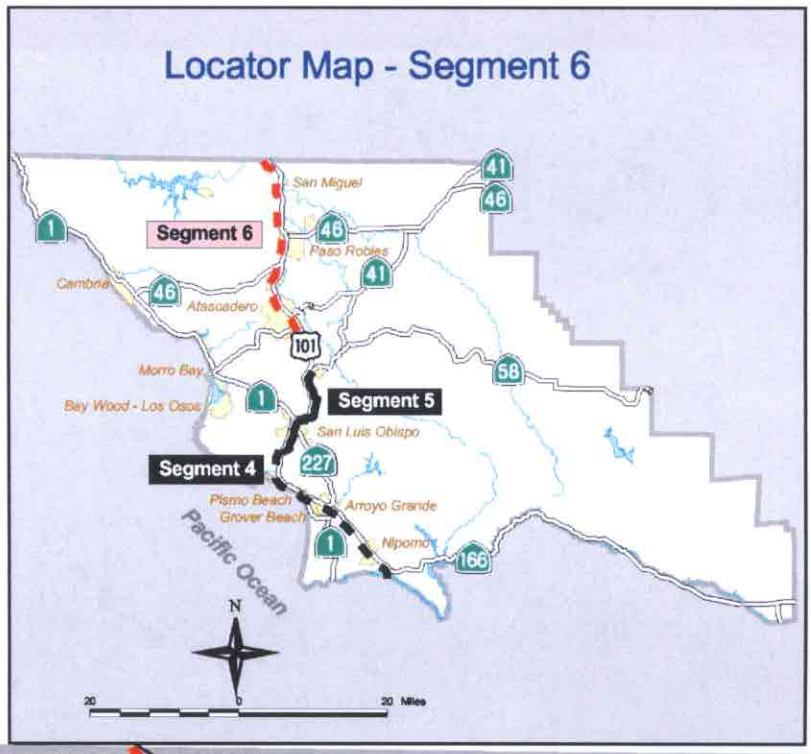
Type	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.480	0.600	Rates are incidents per million vehicle miles for 3-year period from: 7/01/2003 to 6/30/2006
Fatality Collision Rate	0.021	0.023	
Fatality & Injury Collision Rate	0.250	0.280	

* Average collision rates statewide for this type facility

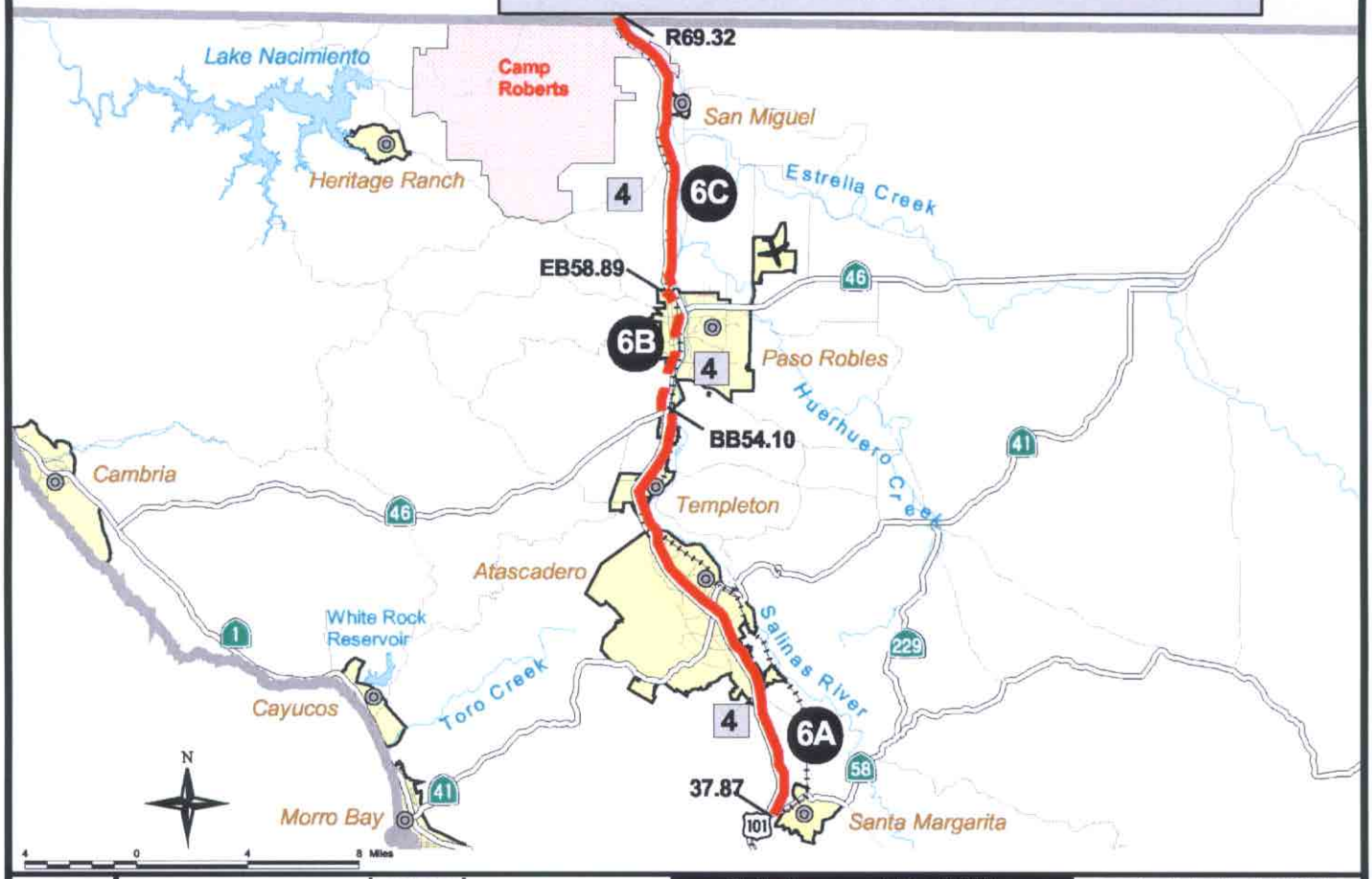
Proposed Concept

Proposed Transportation Concept	4 - Lane Expressway at LOS C

Appendix D: 2001 US 101 Transportation Concept Report Excerpt



Monterey County



Caltrans District 5 Advanced System Planning

Legend

- Urban Boundary
- County Boundary
- State Highway
- Route 101
- Airport
- Number of Lanes
- City or Community

Sub-Segment Post Miles (begin/end)

- 6A - 37.87/BB54.10
- 6B - BB54.10/EB58.89
- 6C - EB58.89/R69.32

Creation Date: March 9, 2001

San Luis Obispo County
Route 101
Segment 6

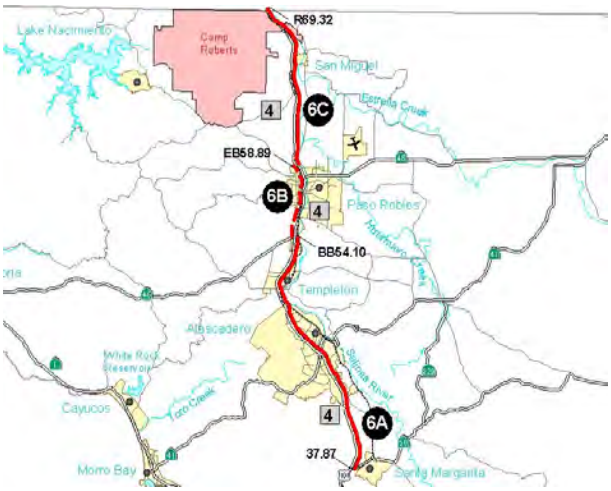
Subsegments
SLO-6-Map

ROUTE 101 - SAN LUIS OBISPO COUNTY – SEGMENT 6

SEGMENT SPECIFICATIONS

Seg-ment	Begin	End	Description
6A	37.87	BB54.10	Junction Route 58/101 Separation to South Junction Rt. 46/101 Separation
6B	BB54.10	EB 58.89	South Junction Rt. 46/101 Separation to North Paso Robles O.H.
6C	EB58.89	R69.32	North Paso Robles O.H. to San Luis Obispo/Monterey County Line

SEGMENT CONCEPT: LOS D & C



SEGMENT FEATURES

Environmental Constraints:	▪ Scenic and historic resources ▪ Special status species/ habitat ▪ Agricultural land ▪ Aesthetics	▪ Sensitive noise receptors ▪ Geologic and seismic ▪ Hazardous waste
Multimodal Facilities:	▪ Paso Robles Train Station ▪ Bicycle and pedestrian facilities ▪ Paso Robles Municipal Airport	
Land Uses along Corridor :	▪ Open space, agricultural, urban development in Atascadero and Paso Robles; scattered low-density commercial, residential and regional shopping centers at outskirts of cities	
Major Traffic Generators:	▪ Outlet shopping in Atascadero and regional shopping at Routes 46 West and 101 ▪ Mid-County Fairgrounds in Paso Robles ▪ Wineries via junctions with Rt. 46 West and 46 East ▪ Access to I-5 and San Joaquin Valley via junction with Route 46 East ▪ San Miguel Mission ▪ Lake Nacimiento ▪ Camp Roberts Military Reservation	

IDENTIFIED DEFICIENCIES – EXISTING AND FUTURE:

- Segment 6 is presently operating at peak/non-peak LOS C/B, C/C, and B/A for Sub-segments 6A, 6B, and 6C, respectively. The three respective sub-segments are projected to reach peak/non-peak LOS E/C, C/B, and A/A in the year 2020.

RECOMMENDED ACTIONS:

- Implement Intelligent Transportation System components from Central Coast Deployment Plan
- Reduce demand by encouraging and improving alternative modes such as transit, vanpools and ridesharing
- Consider Express Bus Stops per Highway Design Manual procedures.
- Facilitate goods movement with projects identified in the California Statewide Goods Movement Strategy
- Construct system-wide operational improvements
- Ensure any improvements to the facility will accommodate a future 6-lane facility
- Enhance intermodal facilities and services to improve interconnectivity
- Convert expressway portion of Sub-segment 6C to freeway

DISTRICT 5 SEGMENTATION DATA SHEET

COUNTY: San Luis Obispo ROUTE: 101 SUB-SEGMENT: 6 B

SUB-SEGMENT LOCATION

PM Begin	PM End	Length (miles)*	Description
BB 54.10	EB 58.89	4.79	South Junction Rt. 46/101 Separation to North Paso Robles O.H.

*Length reflects actual distance which may differ from the difference between PM End and PM Begin

EXISTING ROADBED INFORMATION

Lane Width:	12 ft.	**Number of Lanes:**	Four
ROW Width:	200 ft.	**Terrain:**	Rolling
Shoulder Width:	8 to 10 ft.	**Signalzd.Intersections:**	None
Median Width:	46 to 50 ft.		

EXISTING ROUTE DESIGNATIONS

Functional Classification:	Urban Principal Arterial				
Facility Type:	Urban Freeway				
Trucking Designations:	Nat'l Truck Network, State Hwy Extra Legal Load				
National Highway System:	Yes	**Interregional Road System:**	Yes	**Focus Route:**	Yes

OPERATING CHARACTERISTICS

Year	ADT	Non-Peak V/C Ratio	Peak V/C Ratio	Non-Peak LOS	Peak LOS
1998	32,900	0.45	0.59	C	C
2020*	33,500	0.46	0.60	B	C

Peak Hour Volume (1998 est):	2,202	**Directional Split:**	57%
Peak Hour Truck:	9%		

*Entries for 2020 reflect different counties' regional transportation model capabilities as well as different analysis assumptions and input, including older traffic counts. As a result, 2020 ADTs may be low and LOSs high. Updates are anticipated in the 2002 timeframe.

ACCIDENT DATA

	Sub-segment	Statewide*	3-Year Period
Total Collision Rate:	0.64	0.66	Rates are incidents per million vehicle miles for the 3 year period 6/1/97 to 5/31/00
Fatality Collision Rate:	0.000	0.008	
Fatality + Injury Collision Rate:	0.24	0.24	

*Statewide is the statewide average collision rate for that type of facility

PROPOSED CONCEPT

Concept Peak LOS:	D

Appendix E: Level of Service Calculation Methodology

Appendix E

LEVEL OF SERVICE CALCULATION METHODOLOGY

Level of Service (LOS) was used in this report to evaluate and characterize the operational efficiency of the highway and intersections. LOS is a description of the traffic operating conditions of a roadway segment or an intersection, ranging from LOS A, (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The current policy used by Caltrans for State highways is to maintain a service level of LOS C or better. In urban settings, LOS C/D cusp is acceptable. Procedures used to calculate LOS are from the Transportation Research Board's 2000 Highway Capacity Manual.

Intersections- At signalized intersections, the LOS rating is based on the weighted average control delay (in seconds per vehicle) of all movements measured.

At side-street stop-controlled intersections, the LOS rating is based on the control delay (in seconds per vehicle) for each minor movement.

Table A summarizes the relationship between the average control delay in seconds per vehicle and LOS for signalized and unsignalized intersections.

Table A
Level of Service Thresholds for Intersections

Level of Service	Average Control Delay for Signalized Intersections (seconds per vehicle)	Average Control Delay for Unsignalized Intersections (seconds per vehicle)	General Description
A	0 to 10.0	0 to 10.0	Little or no congestion or delays.
B	10.1 to 20.0	10.1 to 15.0	Limited congestion, short delays.
C	20.1 to 35.0	15.1 to 25.0	Some congestion with average delays. Individual cycle failures begin to appear.
D	35.1 to 55.0	25.1 to 35.0	Significant congestion and delays. Many vehicles stop and individual cycle

Level of Service	Average Control Delay for Signalized Intersections (seconds per vehicle)	Average Control Delay for Unsignalized Intersections (seconds per vehicle)	General Description
			failures are noticeable.
E	55.1 to 80.0	35.1 to 50.0	Severe congestion and delays. Individual cycle failures are frequent occurrences.
F	> 80.0	> 50.0	Total breakdown with extreme delays unacceptable to most drivers.

SOURCE: TRANSPORTATION RESEARCH BOARD, HIGHWAY CAPACITY MANUAL, 2000

Note: Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.

Highways- The relationship between LOS and operations on multi-lane highways is summarized in Table B.

Table B

Level of Service Thresholds for Mainlines

Level of Service	For Multi-lane Highway Passenger cars per mile, per lane	General Description
A	≤ 11	Free flow with low volumes and high speeds. Traffic density is low, with speed controlled by driver desires, speed limits, and physical roadway conditions
B	≤ 18	Level allows stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
C	≤ 26	This level still allows stable flow, but the higher volumes more closely control speeds and maneuverability. Most drivers are somewhat restricted in their freedom to select their own speed, change lanes, or pass.
D	≤ 35	This level approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by

Level of Service	For Multi-lane Highway Passenger cars per mile, per lane	General Description
		changes in operating conditions. Fluctuation in volumes and temporary restriction to flow may cause substantial drops in operating speeds.
E	≤ 45	This level cannot be described by speed alone, but represents operation at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages for brief periods of time.
F	> 45	Forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or log periods of time because of the downstream congestion, In the extreme, both speed and volume can drop to zero.

SOURCE: TRANSPORTATION RESEARCH BOARD, HIGHWAY CAPACITY MANUAL, 2000

TWO-WAY SEGMENTS

The two-way segment methodology estimates measures of traffic operation along a section of highway, based on terrain, geometric design, and traffic conditions. Terrain is classified as level or rolling, as described below. Mountainous terrain is addressed in the operational analysis of specific upgrades and downgrades, presented below. This methodology typically is applied to highway sections of at least 2.0 mi.

Traffic data needed to apply the two-way segment methodology include the two-way hourly volume, a peak-hour factor (PHF), and the directional distribution of traffic flow. The PHF may be computed from field data, or appropriate default values may be selected from the tabulated values presented in Chapter 12. Traffic data also include the proportion of trucks and recreational vehicles (RVs) in the traffic stream. The operational analysis of extended two-way segments for a two-lane highway involves several steps, described in the following sections.

EXHIBIT 20-2. LOS CRITERIA FOR TWO-LANE HIGHWAYS IN CLASS I

LOS	Percent Time-Spent-Following	Average Travel Speed (mi/h)
A	≤ 35	> 55
B	> 35–50	> 50–55
C	> 50–65	> 45–50
D	> 65–80	> 40–45
E	> 80	≤ 40

Note:
LOS F applies whenever the flow rate exceeds the segment capacity.

EXHIBIT 20-3. LOS CRITERIA (GRAPHICAL) FOR TWO-LANE HIGHWAYS IN CLASS I

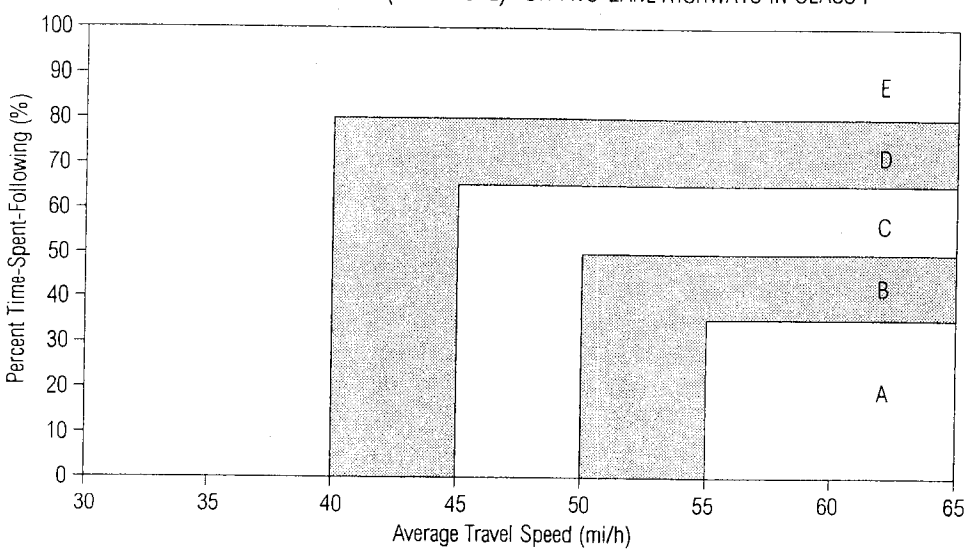


EXHIBIT 20-4. LOS CRITERIA FOR TWO-LANE HIGHWAYS IN CLASS II

LOS	Percent Time-Spent-Following
A	≤ 40
B	> 40–55
C	> 55–70
D	> 70–85
E	> 85

Note:
LOS F applies whenever the flow rate exceeds the segment capacity.

Appendix F: Level of Service Detailed Analysis

2006 SR-46
LOS Detailed Analysis
pm0.146 - pm11.969

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	5.00	84.79166667	69.375	2006

Pk-Hour Flow
154.1666667

Begin Post	End Post	Passing Lane
0.146	11.969	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	B
w/ Passing Lane	B
Percent Time Spent Following	49.5 %
Average Travel Speed	54.2 mi/hr
Volume to Capacity Ratio	0.115

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	11.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	84.79166667
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8 ft
Percent of Grade	7.00%
Length of Grade	0.9 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	3.21 /mi
% No Passing Zones	82%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
6.01	325.48	1002.491875

Optional User Input

Shoulder width	ft	8 ft
Lane Width	ft	12 ft
Segment length	mi	11.8 mi
Terrain		Specific
Percent Trucks Crawling	100	No Data
Truck Crawl Speed Difference	15 mi/h	No Data
Percent Of Grade		7.00%
Length Of Grade	mi	0.9 mi
Directional split	/100	55/45
Peak-Hour Factor, PHF		0.77
Trucks and buses		3.00%
Recreational Vehicles		4.00%
Percent No-Passing Zones		82%
Access Points	/mile	3.21 /mi
Class of Highway (1or 2)		1
How is Free Flow Speed Collected?		Estimated
Estimated Base Free Flow Speed	mi/hr	60 mi/hr
Measured Free Flow Speed	mi/hr	
Observed Flow Rate	veh/hr	

Values from Data

2004 Pk Hr	451
2004 AADT	4065
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

2030 SR-46
LOS Detailed Analysis
pm0.146 - pm11.969

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	5.00	212.1625	173.5875	2030

Pk-Hour Flow
385.75

Begin Post	End Post	Passing Lane
0.146	11.969	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	D
w/ Passing Lane	C
Percent Time Spent Following	78.7 %
Average Travel Speed	49.8 mi/hr
Volume to Capacity Ratio	0.289

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	11.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	212.1625
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8 ft
Percent of Grade	7.00%
Length of Grade	0.9 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	3.21 /mi
% No Passing Zones	82%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
16.35	814.41	2508.397238

Optional User Input

Shoulder width	ft	8 ft
Lane Width	ft	12 ft
Segment length	mi	11.8 mi
Terrain		Specific
Percent Trucks Crawling	100	No Data
Truck Crawl Speed Difference	15 mi/h	No Data
Percent Of Grade		7.00%
Length Of Grade	mi	0.9 mi
Directional split	/100	55/45
Peak-Hour Factor, PHF		0.77
Trucks and buses		3.00%
Recreational Vehicles		4.00%
Percent No-Passing Zones		82%
Access Points	/mile	3.21 /mi
Class of Highway (1or 2)		1
How is Free Flow Speed Collected?		Estimated
Estimated Base Free Flow Speed	mi/hr	60 mi/hr
Measured Free Flow Speed	mi/hr	
Observed Flow Rate	veh/hr	

Values from Data

2004 Pk Hr	451
2004 AADT	4065
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

2006 SR-46
LOS Detailed Analysis
pm0.146 - pm11.969

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	5.00	93.95833333	76.875	2006

Pk-Hour Flow
170.8333333

Begin Post	End Post	Passing Lane
0.146	11.969	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	C
w/ Passing Lane	B
Percent Time Spent Following	51.4 %
Average Travel Speed	53.8 mi/hr
Volume to Capacity Ratio	0.128

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Optional User Input

Shoulder width	ft
Lane Width	ft
Segment length	mi
Terrain	
Percent Trucks Crawling	100
Truck Crawl Speed Difference	15 mi/h
Percent Of Grade	
Length Of Grade	mi
Directional split	/100
Peak-Hour Factor, PHF	
Trucks and buses	
Recreational Vehicles	
Percent No-Passing Zones	
Access Points	/mile
Class of Highway (1or 2)	
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	veh/hr

Values from Data

	8 ft
	12 ft
	11.8 mi
	Specific
	No Data
	No Data
	7.00%
	0.9 mi
	55/45
	0.77
	3.00%
	4.00%
	82%
	3.21 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	451
2004 AADT	4065
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

Variables Used for Analysis

Segment Length (Miles)	11.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	93.95833333
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8 ft
Percent of Grade	7.00%
Length of Grade	0.9 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	3.21 /mi
% No Passing Zones	82%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
6.70	360.67	1110.869375

2030 SR-46
LOS Detailed Analysis
pm0.146 - pm11.969

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	5.00	262.83125	215.04375	2030

Pk-Hour Flow
477.875

Begin Post	End Post	Passing Lane
0.146	11.969	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	E
w/ Passing Lane	D
Percent Time Spent Following	84.9 %
Average Travel Speed	49.9 mi/hr
Volume to Capacity Ratio	0.281

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	11.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	262.83125
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8 ft
Percent of Grade	7.00%
Length of Grade	0.9 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	3.21 /mi
% No Passing Zones	82%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
20.23	1008.91	3107.453869

Optional User Input

Shoulder width	ft
Lane Width	ft
Segment length	mi
Terrain	
Percent Trucks Crawling	100
Truck Crawl Speed Difference	15 mi/h
Percent Of Grade	
Length Of Grade	mi
Directional split	/100
Peak-Hour Factor, PHF	
Trucks and buses	
Recreational Vehicles	
Percent No-Passing Zones	
Access Points	/mile
Class of Highway (1or 2)	
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	veh/hr

Values from Data

	8 ft
	12 ft
	11.8 mi
	Specific
	No Data
	No Data
	7.00%
	0.9 mi
	55/45
	0.77
	3.00%
	4.00%
	82%
	3.21 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	451
2004 AADT	4065
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

2006 SR-46
LOS Detailed Analysis
pm11.969 - pm15.537

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	13.00	84.79166667	69.375	2006

Pk-Hour Flow
154.1666667

Begin Post	End Post	Passing Lane
11.969	15.537	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	C
w/ Passing Lane	B
Percent Time Spent Following	54.6 %
Average Travel Speed	52.2 mi/hr
Volume to Capacity Ratio	0.071

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	3.6 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	84.79166667
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.16 ft
Percent of Grade	-7.00%
Length of Grade	1.1 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	4.2 /mi
% No Passing Zones	98%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
1.88	98.23	302.5366667

Optional User Input

Shoulder width	ft	8.16 ft
Lane Width	ft	12 ft
Segment length	mi	3.6 mi
Terrain		Specific
Percent Trucks Crawling	100	No Data
Truck Crawl Speed Difference	15 mi/h	No Data
Percent Of Grade		-7.00%
Length Of Grade	mi	1.1 mi
Directional split	/100	55/45
Peak-Hour Factor, PHF		0.77
Trucks and buses		3.00%
Recreational Vehicles		4.00%
Percent No-Passing Zones		98%
Access Points	/mile	4.2 /mi
Class of Highway (1or 2)		1
How is Free Flow Speed Collected?		Estimated
Estimated Base Free Flow Speed	mi/hr	60 mi/hr
Measured Free Flow Speed	mi/hr	
Observed Flow Rate	veh/hr	

Values from Data

2004 Pk Hr	490
2004 AADT	3800
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

2030 SR-46
LOS Detailed Analysis
pm11.969 - pm15.537

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	13.00	212.1625	173.5875	2030

Pk-Hour Flow
385.75

Begin Post	End Post	Passing Lane
11.969	15.537	No

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	E
w/ Passing Lane	C
Percent Time Spent Following	80.5 %
Average Travel Speed	50.7 mi/hr
Volume to Capacity Ratio	0.171

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	3.6 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	212.1625
Directional Split	55/45
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.16 ft
Percent of Grade	-7.00%
Length of Grade	1.1 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	3%
% Recreational Vehicles	4%
Access Points per mile	4.2 /mi
% No Passing Zones	98%
Peak Hour Factor	0.77
Passing Lane for Analysis?	No
Length of Passing Lane	
Direction of Passing Lane	
Post Miles of Passing Lane	

Additional Performance Measures

TT15	VmiT15	VmiT60
4.85	245.78	756.9958

Optional User Input

Shoulder width	ft	
Lane Width	ft	
Segment length	mi	
Terrain		
Percent Trucks Crawling	100	
Truck Crawl Speed Difference	15 mi/h	
Percent Of Grade		
Length Of Grade	mi	
Directional split	/100	
Peak-Hour Factor, PHF		
Trucks and buses		
Recreational Vehicles		
Percent No-Passing Zones		
Access Points	/mile	
Class of Highway (1or 2)		
How is Free Flow Speed Collected?		
Estimated Base Free Flow Speed	mi/hr	
Measured Free Flow Speed	mi/hr	
Observed Flow Rate	veh/hr	

Values from Data

	8.16 ft
	12 ft
	3.6 mi
	Specific
	No Data
	No Data
	-7.00%
	1.1 mi
	55/45
	0.77
	3.00%
	4.00%
	98%
	4.2 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	490
2004 AADT	3800
Passing Lane	No
Length of Passing Lane	0.00
Direction of Passing Lane	
Post Miles of Passing Lane	

2006 SR-46
LOS Detailed Analysis
pm 15.537 - 21.83

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	20.00	154	2006

Begin Postmile	End Postmile
15.54	21.83

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	C
Average Travel Speed	49.20
Percent Time Spent Following	39.07%
volume to capacity ratio, v/c	0.067

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input / Values From Data

	Optional User Input	Values From Data
Shoulder width	5.0 ft	6.93 ft.
Lane Width	12.0 ft	12.00 ft.
Segment length (Miles)	2.0 mi	6.29 mi.
Terrain (L=level, R=rolling)	Level	Level
Directional split	60 /40	55/45
Peak-Hour Factor, PHF	0.77	77%
Percent of Trucks and buses	10%	4%
Percent of Recreational Vehicles	10%	4%
Percent No-Passing Zones	70%	81%
Access Points	1.0 /mi	5.2 /mi.
Grade	1.0	0.00
Class of Highway (1 or 2)	1	1
How is Free Flow Speed Collected?	Estimated	Estimated
Estimated Base Free Flow Speed	55 mi/hr	60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume 712 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT 6356.7138 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	154.1666667
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
2.03	100.11	308.3333333

2030 SR-46
LOS Detailed Analysis
pm 15.537 - 21.83

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	17.00	386	2030

Begin Postmile	End Postmile
15.54	21.83

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	C
Average Travel Speed	45.93
Percent Time Spent Following	56.07%
volume to capacity ratio, v/c	0.168

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		6.93 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		6.29 mi.
Terrain (L=level, R=rolling)	Level		Level
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		4%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		81%
Access Points	1.0 /mi		5.2 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	712 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	6356.7138 Vehicles

Values From Data

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	385.75
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
5.45	250.49	771.5

2006 SR-46
LOS Detailed Analysis
pm 15.537 - 21.83

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	20.00	288	2006

Begin Postmile	End Postmile
15.54	21.83

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	C
Average Travel Speed	46.65
Percent Time Spent Following	49.51%
volume to capacity ratio, v/c	0.125

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		6.93 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		6.29 mi.
Terrain (L=level, R=rolling)	Level		Level
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		4%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		81%
Access Points	1.0 /mi		5.2 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	712 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	6356.7138 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	287.5
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
4.00	186.69	575

2030 SR-46
LOS Detailed Analysis
pm 15.537 - 21.83

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	17.00	713	2030

Begin Postmile	End Postmile
15.54	21.83

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	43.89
Percent Time Spent Following	68.05%
volume to capacity ratio, v/c	0.295

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		6.93 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		6.29 mi.
Terrain (L=level, R=rolling)	Level		Level
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		4%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		81%
Access Points	1.0 /mi		5.2 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	712 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	6356.7138 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	713.25
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
10.55	463.15	1426.5

2006 SR-46
LOS Detailed Analysis
pm32.28 - pm40.009

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	35.00	452.2916667	243.5416667	2006

Pk-Hour Flow
695.8333333

Begin Post	End Post	Passing Lane
32.28	40.009	Yes

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	E
w/ Passing Lane	D
Percent Time Spent Following	96 %
Average Travel Speed	45.9 mi/hr
Volume to Capacity Ratio	0.370

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	7.7 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	452.2916667
Directional Split	65/35
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.48 ft
Percent of Grade	-7.00%
Length of Grade	0.8 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	18%
% Recreational Vehicles	4%
Access Points per mile	3.88 /mi
% No Passing Zones	81%
Peak Hour Factor	0.77
Passing Lane for Analysis?	Yes
Length of Passing Lane	0.80
Direction of Passing Lane	West
Post Miles of Passing Lane	49.05-39.85

Additional Performance Measures

TT15	VmiT15	VmiT60
24.71	1134.99	3495.762292

Optional User Input

Shoulder width	ft
Lane Width	ft
Segment length	mi
Terrain	
Percent Trucks Crawling	100
Truck Crawl Speed Difference	15 mi/h
Percent Of Grade	
Length Of Grade	mi
Directional split	/100
Peak-Hour Factor, PHF	
Trucks and buses	
Recreational Vehicles	
Percent No-Passing Zones	
Access Points	/mile
Class of Highway (1or 2)	
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	veh/hr

Values from Data

	8.48 ft
	12 ft
	7.7 mi
	Specific
	No Data
	No Data
	-7.00%
	0.8 mi
	65/35
	0.77
	18.00%
	4.00%
	81%
	3.88 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	1975
2004 AADT	16500
Passing Lane	Yes
Length of Passing Lane	0.80
Direction of Passing Lane	West
Post Miles of Passing Lane	49.05-39.85

2030 SR- 46
LOS Detailed Analysis
pm 32.28 - pm 40.009

Multilane Highway L.O.S. Analysis

County	Route	Focus Pt	Volume	What is input volume based on?
SLO	46	35	1,022	Both Directions

Analysis Year	2030

Begin Post	End Post
32.28	40.01

volume to capacity:	0.332
Level of Service:	A
Suggested Analysis Method for Segment	Directional Analysis

Legend

Critical Cells for Calculating LOS		Optional Fields	
Contain Calculated Values		Stored Data	
Missing information needed	◄----------	Performance Measures	

Variables Used for Analysis

Segment Length	7.7 mi
Terrain	Rolling
Class of Highway	1
Analysis Hourly Volume	664
Directional Split	65/35
# of Lanes in Analysis Direction	2
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.48 ft
Percent of Grade	-7.00%
Length of Grade	0.8 miles

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	18%
% Recreational Vehicles	4%
Access Points per mile	3.88
Peak Hour Factor	0.77

Optional User Input

Lane Width	ft
# of total lanes on Freeway	
Median Type	
Access Points/mile	/mile
Terrain Type	
Percent of Grade	
Length of Grade	mile
Directional Split	/100
Percent of Trucks	
Percent of RVs	
Peak Hour Factor	
Speed Limit	mi/hr
Median Clearance	ft
Shoulder Clearance	ft
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	Veh/hr

Variables From Data

Lane Width	12 ft
# of Lanes of Freeway	4
Median Type	Undivided
Access Points/mile	3.88
Terrain Type	Rolling
Percent of Grade	-7.00%
Length of Grade	0.8 miles
Directional Split	65/35
Percent of Trucks	18.00%
Percent of RVs	4.00%
Peak Hour Factor	0.77
Speed Limit	55 mi/hr
Median Clearance	0 ft
Shoulder Clearance	8.48 ft
How is Free Flow Speed Collected?	Estimated
Speed	60 mi/hr
2004 Pk Hr	1975
2004 AADT	16500

Additional Performance Measures

Density	Free Flow Speed	Passenger Car Volume
9.8 hi/hr	57.4 mi/hr	565 pc/hr/ln

2006 SR-46
LOS Detailed Analysis
pm32.28 - pm40.009

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	35.00	693.3333333	373.3333333	2006

Pk-Hour Flow
1066.666667

Begin Post	End Post	Passing Lane
32.28	40.009	Yes

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	E
w/ Passing Lane	E
Percent Time Spent Following	95.1 %
Average Travel Speed	40 mi/hr
Volume to Capacity Ratio	0.568

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	7.7 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	693.3333333
Directional Split	65/35
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.48 ft
Percent of Grade	-7.00%
Length of Grade	0.8 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	18%
% Recreational Vehicles	4%
Access Points per mile	3.88 /mi
% No Passing Zones	81%
Peak Hour Factor	0.77
Passing Lane for Analysis?	Yes
Length of Passing Lane	0.80
Direction of Passing Lane	West
Post Miles of Passing Lane	49.05-39.85

Additional Performance Measures

TT15	VmiT15	VmiT60
43.54	1739.86	5358.773333

Optional User Input

Shoulder width	ft
Lane Width	ft
Segment length	mi
Terrain	
Percent Trucks Crawling	100
Truck Crawl Speed Difference	15 mi/h
Percent Of Grade	
Length Of Grade	mi
Directional split	/100
Peak-Hour Factor, PHF	
Trucks and buses	
Recreational Vehicles	
Percent No-Passing Zones	
Access Points	/mile
Class of Highway (1or 2)	
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	veh/hr

Values from Data

	8.48 ft
	12 ft
	7.7 mi
	Specific
	No Data
	No Data
	-7.00%
	0.8 mi
	65/35
	0.77
	18.00%
	4.00%
	81%
	3.88 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	1975
2004 AADT	16500
Passing Lane	Yes
Length of Passing Lane	0.80
Direction of Passing Lane	West
Post Miles of Passing Lane	49.05-39.85

2030 SR- 46
LOS Detailed Analysis
pm 32.28 - pm 40.009

Multilane Highway L.O.S. Analysis

County	Route	Focus Pt	Volume	What is input volume based on?
SLO	46	35	2,124	Both Directions

Analysis Year	2030

Begin Post	End Post
32.28	40.01

volume to capacity:	0.691
Suggested Analysis Method for Segment	Directional Analysis
Level of Service:	C

Legend

Critical Cells for Calculating LOS		Optional Fields	
Contain Calculated Values		Stored Data	
Missing information needed	◄----------	Performance Measures	

Variables Used for Analysis

Segment Length	7.7 mi
Terrain	Rolling
Class of Highway	1
Analysis Hourly Volume	1381
Directional Split	65/35
# of Lanes in Analysis Direction	2
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	8.48 ft
Percent of Grade	-7.00%
Length of Grade	0.8 miles

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	18%
% Recreational Vehicles	4%
Access Points per mile	3.88
Peak Hour Factor	0.77

Optional User Input

Lane Width	ft
# of total lanes on Freeway	
Median Type	
Access Points/mile	/mile
Terrain Type	
Percent of Grade	
Length of Grade	mile
Directional Split	/100
Percent of Trucks	
Percent of RVs	
Peak Hour Factor	
Speed Limit	mi/hr
Median Clearance	ft
Shoulder Clearance	ft
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	Veh/hr

Variables From Data

Lane Width	12 ft
# of Lanes of Freeway	4
Median Type	Undivided
Access Points/mile	3.88
Terrain Type	Rolling
Percent of Grade	-7.00%
Length of Grade	0.8 miles
Directional Split	65/35
Percent of Trucks	18.00%
Percent of RVs	4.00%
Peak Hour Factor	0.77
Speed Limit	55 mi/hr
Median Clearance	0 ft
Shoulder Clearance	8.48 ft
How is Free Flow Speed Collected?	Estimated
Speed	60 mi/hr
2004 Pk Hr	1975
2004 AADT	16500

Additional Performance Measures

Density	Free Flow Speed	Passenger Car Volume
20.5 hi/hr	57.4 mi/hr	1174 pc/hr/ln

2006 SR-46
LOS Detailed Analysis
pm 40.009 - 45.45

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	43.00	696	2006

Begin Postmile	End Postmile
40.01	45.45

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	44.02
Percent Time Spent Following	67.39%
volume to capacity ratio, v/c	0.288

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		7.34 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		5.44 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		19%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		66%
Access Points	1.0 /mi		2.9 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1975 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	16500 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	695.8333333
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
10.26	451.84	1391.666667

2030 SR-46
LOS Detailed Analysis
pm 40.009 - 45.45

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	43.00	1,022	2030

Begin Postmile	End Postmile
40.01	45.45

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	41.61
Percent Time Spent Following	76.94%
volume to capacity ratio, v/c	0.419

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		7.34 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		5.44 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		19%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		66%
Access Points	1.0 /mi		2.9 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1975 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	16500 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	1022.041667
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
15.95	663.66	2044.083333

2006 SR-46
LOS Detailed Analysis
pm 45.45 - 48.625

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	47.00	571	2006

Begin Postmile	End Postmile
45.45	48.63

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	44.89
Percent Time Spent Following	63.11%
volume to capacity ratio, v/c	0.236

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		7.34 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		3.18 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		19%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		80%
Access Points	1.0 /mi		1.6 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1700 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	13000 Vehicles

Values From Data

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	570.8333333
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
8.26	370.67	1141.666667

2030 SR-46
LOS Detailed Analysis
pm 45.45 - 48.625

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	47.00	1,068	2030

Begin Postmile	End Postmile
45.45	48.63

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	41.28
Percent Time Spent Following	77.93%
volume to capacity ratio, v/c	0.438

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		7.34 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		3.18 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		55/45
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		19%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		80%
Access Points	1.0 /mi		1.6 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1700 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	13000 Vehicles

Values From Data

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	1067.833333
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
16.80	693.40	2135.666667

2006 SR-46
LOS Detailed Analysis
pm 48.625 - 55.03

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	51.00	571	2006

Begin Postmile	End Postmile
48.63	55.03

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	44.89
Percent Time Spent Following	63.11%
volume to capacity ratio, v/c	0.236

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Optional User Input

Shoulder width	5.0 ft		6.03 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		6.41 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		60/40
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		21%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		87%
Access Points	1.0 /mi		2.7 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1750 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	13000 Vehicles

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	570.8333333
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Additional Performance Measures

TT15	VmiT15	VmiT60
8.26	370.67	1141.666667

2030 SR-46
LOS Detailed Analysis
pm 48.625 - 55.03

Two-lane (two-way) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Volume	Analysis Year
SLO	46	50.00	1,067	2030

Begin Postmile	End Postmile
48.63	55.03

Suggested Analysis Method for Particular Segment	Two_Way Analysis

Level of Service	D
Average Travel Speed	41.29
Percent Time Spent Following	77.91%
volume to capacity ratio, v/c	0.437

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄-----	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	2 mi
Terrain	Level
Class of Highway (1 or 2)	1
Two Way Hourly Volume	1066.791667
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	5 ft

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	55 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	10%
% Recreational Vehicles	10%
Access Points per mile	1 /mi
% No Passing Zones	70%
Peak Hour Factor	0.77

Optional User Input / Values From Data

Shoulder width	5.0 ft		6.03 ft.
Lane Width	12.0 ft		12.00 ft.
Segment length (Miles)	2.0 mi		6.41 mi.
Terrain (L=level, R=rolling)	Level		Rolling
Directional split	60 /40		60/40
Peak-Hour Factor, PHF	0.77		77%
Percent of Trucks and buses	10%		21%
Percent of Recreational Vehicles	10%		4%
Percent No-Passing Zones	70%		87%
Access Points	1.0 /mi		2.7 /mi.
Grade	1.0		0.00
Class of Highway (1 or 2)	1		1
How is Free Flow Speed Collected?	Estimated		Estimated
Estimated Base Free Flow Speed	55 mi/hr		60 mi/hr
Measured Free Flow Speed	mi/hr	2004 Pk hr Volume	1750 Pc/Hr
Observed Flow Rate	Veh/hr	2004 AADT	13000 Vehicles

Additional Performance Measures

TT15	VmiT15	VmiT60
16.78	692.72	2133.583333

2006 SR-46
LOS Detailed Analysis
pm55.03 - pm60.849

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	58.00	200	133.3333333	2006

Pk-Hour Flow
333.3333333

Begin Post	End Post	Passing Lane
55.03	60.849	Yes

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	D
w/ Passing Lane	D
Percent Time Spent Following	76 %
Average Travel Speed	47.3 mi/hr
Volume to Capacity Ratio	0.553

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Optional User Input

Shoulder width	ft	7.74 ft
Lane Width	ft	12 ft
Segment length	mi	5.8 mi
Terrain		Specific
Percent Trucks Crawling	100	No Data
Truck Crawl Speed Difference	15 mi/h	No Data
Percent Of Grade		5.00%
Length Of Grade	mi	1.7 mi
Directional split	/100	60/40
Peak-Hour Factor, PHF		0.77
Trucks and buses		21.00%
Recreational Vehicles		4.00%
Percent No-Passing Zones		51%
Access Points	/mile	0.86 /mi
Class of Highway (1or 2)		1
How is Free Flow Speed Collected?		Estimated
Estimated Base Free Flow Speed	mi/hr	60 mi/hr
Measured Free Flow Speed	mi/hr	
Observed Flow Rate	veh/hr	

Values from Data

2004 Pk Hr	700
2004 AADT	7600
Passing Lane	Yes
Length of Passing Lane	0.35
Direction of Passing Lane	East
Post Miles of Passing Lane	58.75-59.1

Variables Used for Analysis

Segment Length (Miles)	5.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	200
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	7.74 ft
Percent of Grade	5.00%
Length of Grade	1.7 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	21%
% Recreational Vehicles	4%
Access Points per mile	0.86 /mi
% No Passing Zones	51%
Peak Hour Factor	0.77
Passing Lane for Analysis?	Yes
Length of Passing Lane	0.35
Direction of Passing Lane	East
Post Miles of Passing Lane	58.75-59.1

Additional Performance Measures

TT15	VmiT15	VmiT60
7.98	377.86	1163.8

2030 SR-46
LOS Detailed Analysis
pm55.03 - pm60.849

Directional (steep grade) LOS Analysis

Based On Estimated Free Flow Speed

County	Route	Focus Pt	Analysis Volume	Opposing Volume	Analysis Year
SLO	46	57.00	417.2	278.1333333	2030

Pk-Hour Flow
695.3333333

Begin Post	End Post	Passing Lane
55.03	60.849	Yes

Suggested Analysis Method for Particular Segment	Directional Analysis

Level of Service	E
w/ Passing Lane	D
Percent Time Spent Following	84.7 %
Average Travel Speed	41.1 mi/hr
Volume to Capacity Ratio	0.982

Legend

Critical Cells		Optional Fields	
Calculated Values		Stored Data	
Missing information needed	◄------	Performance Measures	

Variables Used for Analysis

Segment Length (Miles)	5.8 mi
Terrain	Specific
Class of Highway	1
Analysis Hourly Volume	417.2
Directional Split	60/40
Lane Width (Ft.)	12 ft
Shoulder Width (Ft.)	7.74 ft
Percent of Grade	5.00%
Length of Grade	1.7 mi

How is Free Flow Speed Collected?	Estimated
Estimated Free Flow Speed	60 mi/hr
Observed Flow Rate	Not Applicable
% Trucks and Buses	21%
% Recreational Vehicles	4%
Access Points per mile	0.86 /mi
% No Passing Zones	51%
Peak Hour Factor	0.77
Passing Lane for Analysis?	Yes
Length of Passing Lane	0.35
Direction of Passing Lane	East
Post Miles of Passing Lane	58.75-59.1

Additional Performance Measures

TT15	VmiT15	VmiT60
19.20	788.21	2427.6868

Optional User Input

Shoulder width	ft
Lane Width	ft
Segment length	mi
Terrain	
Percent Trucks Crawling	100
Truck Crawl Speed Difference	15 mi/h
Percent Of Grade	
Length Of Grade	mi
Directional split	/100
Peak-Hour Factor, PHF	
Trucks and buses	
Recreational Vehicles	
Percent No-Passing Zones	
Access Points	/mile
Class of Highway (1or 2)	
How is Free Flow Speed Collected?	
Estimated Base Free Flow Speed	mi/hr
Measured Free Flow Speed	mi/hr
Observed Flow Rate	veh/hr

Values from Data

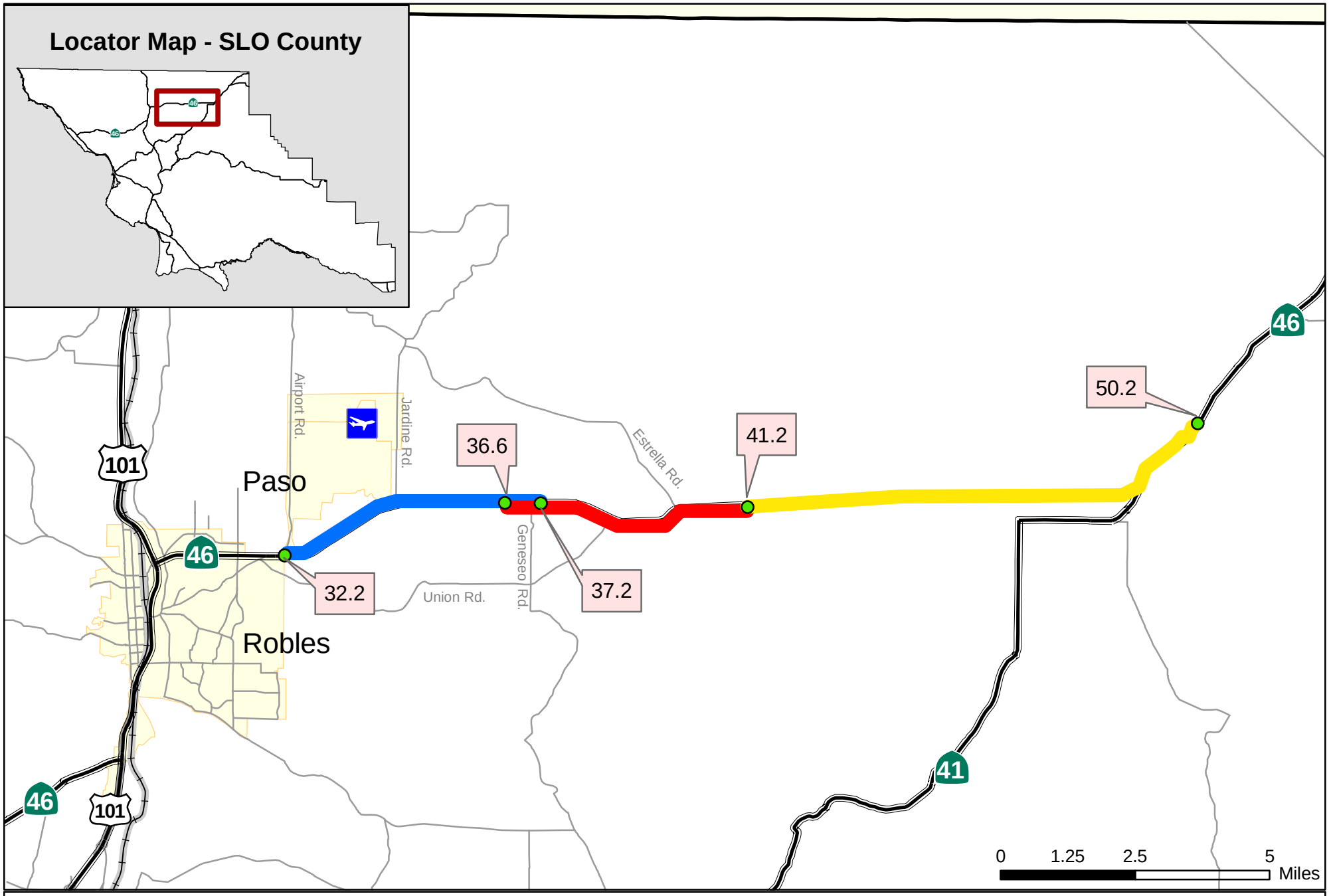
	7.74 ft
	12 ft
	5.8 mi
	Specific
	No Data
	No Data
	5.00%
	1.7 mi
	60/40
	0.77
	21.00%
	4.00%
	51%
	0.86 /mi
	1
	Estimated
	60 mi/hr
2004 Pk Hr	700
2004 AADT	7600
Passing Lane	Yes
Length of Passing Lane	0.35
Direction of Passing Lane	East
Post Miles of Passing Lane	58.75-59.1

Appendix G: Programmed STIP Projects

MAJOR PROJECTS FOR STATE ROUTE 46

(STIP/SHOPP Projects, Local Projects, and Additional Constrained and Unconstrained Projects Shown in RTPs)

County	Location (Postmiles)	EA	Projects
Programmed STIP Projects			
SLO	32.2/37.2	33071	Convert 2-lane highway to 4-lane expressway (SR 46 Corridor Union)
SLO	36.6/41.2	33072	Convert to 4-lane expressway (SR 46 Corridor imp. Whitley 1)
SLO	41.2/50.2	33073	Convert 2-lane highway to 4-lane expressway (SR 46 Corridor imp. Whitley 2)
Programmed SHOPP Projects			
For an updated list of **SHOPP/STIP** projects along SR 46, please visit Caltrans District 5 *Status of Projects* website at: http://www.dot.ca.gov/dist05/projects/pdf/d5sop.pdf			
Major Local Projects - Candidate Phase, Not Yet Programmed			
SLO	32.1	0L950	*Airport Rd./SR 46 Intersection/Interchange* - Improve intersection for future traffic volumes (Local funds - Implementing agency is City of Paso Robles)
Additional Financially Constrained Projects (shown in SLOCOG RTP)			
SLO	Rural North County		Widen to 4-lane expressway - Airport Rd. to Whitley Gardens (Phase I & II) - *Caltrans, sponsor*
SLO	Rural North County		Widen to 4-lane expressway - Whitley Gardens to Shandon Reststop (Ph. III) - *Caltrans, sponsor*
SLO	Paso Robles		46 West/US 101 Interchange Reconstruction - *Caltrans, sponsor*
SLO	Paso Robles		46 East/US 101 Interchange Improvements - *City of Paso Robles, sponsor*
SLO	Rural North County		46 E. - Widen to 4-lane expressway (Ph. IV) - Shandon Reststop to 46/41E. Jct. - *Caltrans, sponsor*
SLO	Paso Robles		46 East/Airport Rd. Interchange - construct new interchange - *Paso Robles, sponsor*
SLO	Rural North County		46 West Operational Improvements throughout corridor - *SLO County Public Works, sponsor*



Caltrans District 5 System Planning

N

Convert 2-lane highway to 4-lane expressway (PM 32.2/37.2)

Convert to 4-lane expressway (PM 36.6/41.2)

Convert 2-lane highway to 4-lane expressway (PM 41.2/50.2)

Highways

Urban Area

Rail

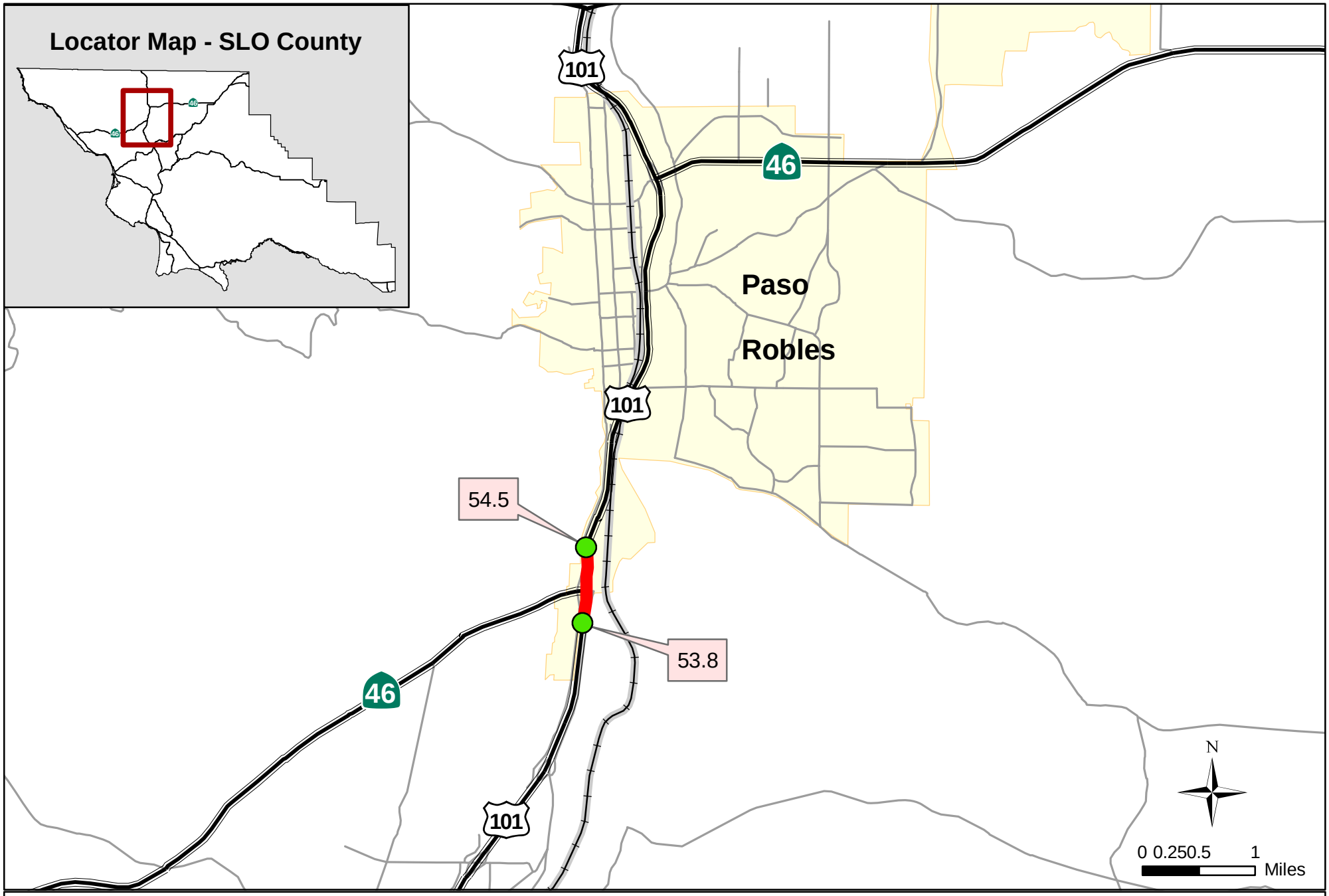
Post Mile

Programmed STIP Projects

MAJOR PROJECTS FOR ROUTE 101/46 BETWEEN 46WEST AND 46EAST

(STIP/SHOPP Projects, Local Projects, and Additional Constrained and Unconstrained Projects Shown in RTPs)

County	Location (Route - Postmiles)	EA	Projects
Programmed STIP/SHOPP Projects			
For an updated list of **SHOPP/STIP** projects along SR 46/101, please visit Caltrans District 5 *Status of Projects* website at: http://www.dot.ca.gov/dist05/projects/pdf/d5sop.pdf			
Major Local Projects			
SLO	Route 101 - PM 53.8/54.5	45130	Reconstruct the Route 101/46 West Interchange in and near the City of Paso Robles Implementing Agency - City of Paso Robles
Additional Financially Constrained Projects (shown in SLOCOG RTP)			
SLO	Paso Robles		46 East/101 Interchange Improvements - Construct improvements to address current and future LOS.



Caltrans
District 5
System
Planning

Reconstruct Route 101/46W. IC (PM 53.8/54.5)

Urban Area

Highways

Post Mile

Rail

Route 101 Between SR 46West and 46East Programmed Projects

Appendix H: 1998 Interregional Transportation Strategic Plan Excerpt

Appendix H: Excerpt from 1998 Interregional Transportation Strategic Plan

STATE ROUTE 46 CONCEPT

INTERREGIONAL MOBILITY GOAL – State Route 46 is an East-West interregional, primarily rural facility, providing a moderate level of service for truck, agricultural, passenger, and recreational travel, from the Central Coast and U.S. 101 at Palo Robles, to I-5 at Lost Hills, with links to other regions via I-5.

FACILITY STANDARD TO MEET CONCEPT

- 4-lane freeway from U.S. 101 at Paso Robles to the future intersection of Dry Creek Road.

- 4-lane expressway from the future intersection of Dry Creek Road east of Paso Robles to I-5 in Kern County.

STRATEGY TO MEET CONCEPT

- Cooperatively identify and plan capacity improvement strategies to ensure that the state's interregional needs, including lifeline and recreational requirements, are comprehensively considered with regional needs.

- Manage future travel demand to maximize capacity for interregional and regional trip volumes by supporting wise local land use decisions and provision of alternative transportation infrastructure for regional trips.

- Encourage local agencies to share funding responsibilities where regional growth is a factor, to ensure timely construction and minimize travel delay, especially in the fast growing Paso Robles area.

- Expand existing 2 lane expressway segments in San Luis Obispo County to a continuous 4-lane freeway/expressway from Paso Robles to the junction of SR 41 (east). This will improve safety and facilitate both goods movement and recreational travel.

- As near-term strategy, construct passing and truck climbing lanes between SR 41 and I-5 until a 4-lane expressway is built. Passing lanes will improve safety and facilitate goods movement and recreational travel. As long –term strategy, convert the existing 2 lane conventional roadway to 4-lane expressway from SR 41 to I-5 in Kern County.

(Page 39)

Appendix I: 1964 State Route 46 Freeway Agreement

Dist. Co. Rte. PM
V SLO 46 29.8-32.0

FREEWAY AGREEMENT

THIS AGREEMENT, made and entered into, in duplicate, this 17 day of August, 19 64, by and between the STATE OF CALIFORNIA, acting by and through the Department of Public Works, hereinafter referred to as "the State," and the COUNTY OF SAN LUIS OBISPO, hereinafter referred to as "the County,"

W I T N E S S E T H:

WHEREAS, the California Highway Commission on July 17, 1947, adopted a resolution declaring that portion of State Highway Route 33 (New State Highway Route 46) in the County of San Luis Obispo between State Highway Route 2 (New State Highway Route 101) in the City of Paso Robles and 1 mile east of Estrella River to be a freeway; and

WHEREAS, State and County have heretofore entered into a Freeway Agreement dated June 14, 1948, relating to that portion of State Highway Route 33 (New State Highway Route 46) in the County of San Luis Obispo, between Paso Robles and 1 mile east Estrella River; and

WHEREAS, subsequent to entering into said Freeway Agreement the State has prepared a new plan map for the portion of said freeway on State Highway Route 46 between the east city limit of Paso Robles and Huer Huero Creek, including provisions for closing County roads, for carrying County roads over or under or to a connection with such freeway, for relocation of County roads, and for construction of frontage roads and other local roads,

NOW, THEREFORE, it is agreed:

1. This agreement supersedes the Freeway Agreement dated June 14, 1948, with respect to the portion of said freeway on State Highway Route 46 between the east city limit of Paso Robles and Huer Huero Creek.

2. The County agrees and consents to the closing of County roads, relocation of County roads, construction of frontage roads and other local roads, and other construction affecting County roads all as shown on the plan map dated July 1964, attached hereto and marked Exhibit "A", between the east city limit of Paso Robles and Huer Huero Creek and made a part hereof by this reference.

3. The State, in the construction of said freeway will, at State's expense, make such changes affecting County roads in accordance with the said plan attached hereto or as the same may hereafter be modified by subsequent agreement between the parties hereto.

4. The County will accept control and maintenance over each of the relocated or reconstructed County roads and the frontage roads and other State constructed local roads on notice to the County Road Commissioner from the State that the work thereon has been completed, except as to any portion thereof which is adopted by the State as a part of the freeway proper. The County will also accept title to the portion of such roads lying outside the freeway limits, upon relinquishment by the State.

5. This agreement may be modified at any time by the mutual written consent of the parties hereto, as may become necessary for the best accomplishment through State and County cooperation of the whole freeway project for the benefit of the people of the State and of the County.

IN WITNESS WHEREOF, the parties hereunto have set their hands and seals the day first above written.

State of California
Department of Public Works

JOHN ERRECA
Director of Public Works

By (seal)

By /s/ T. F. Bagshaw
T. Fred Bagshaw
Assistant Director

NOV 5 1964

APPROVED:

/s/ J. C. Womack
State Highway Engineer

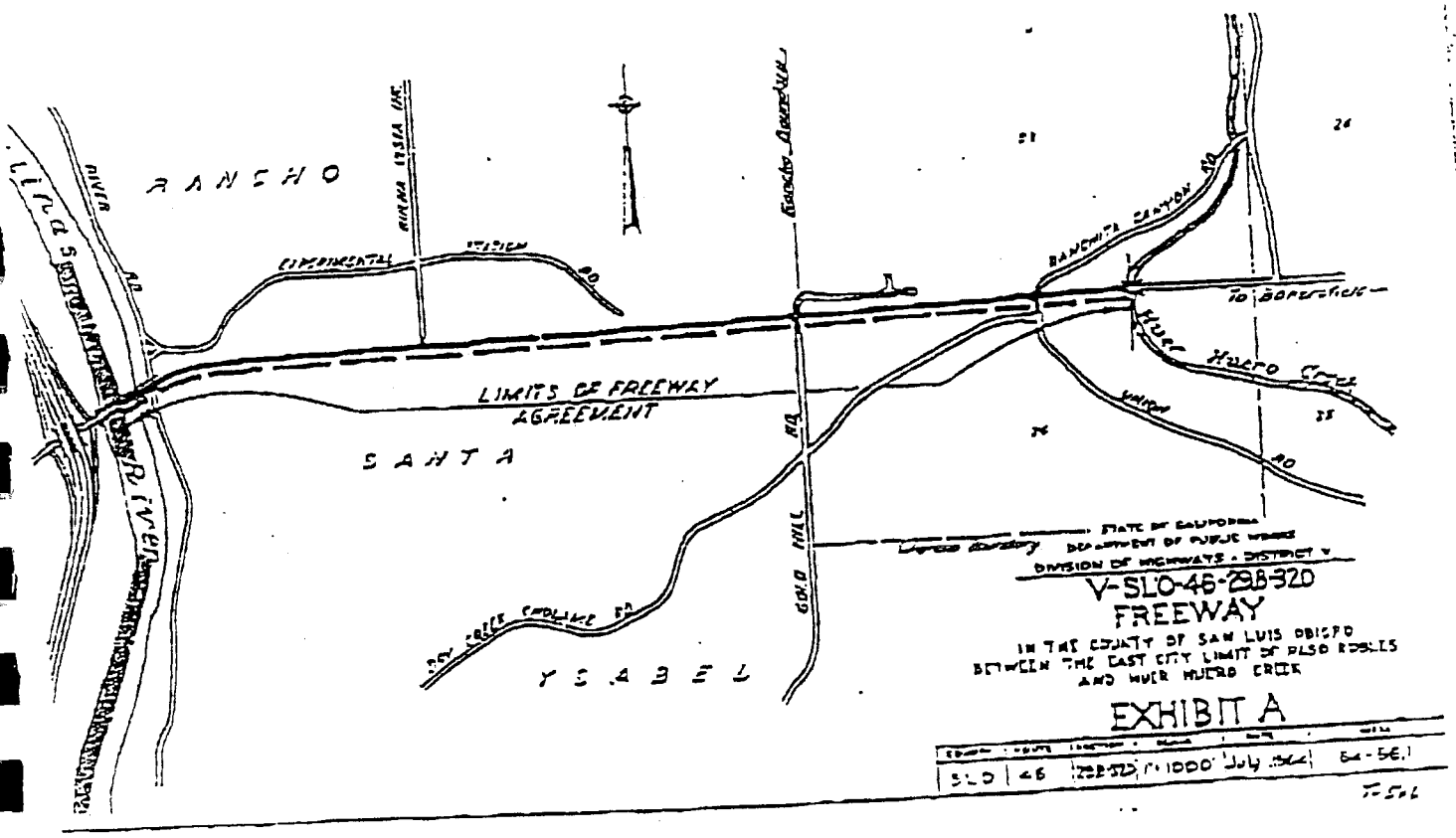
APPROVED AS TO FORM:

/s/ Richard C. East
Attorney (State)

COUNTY OF SAN LUIS OBISPO

By /s/ M. Roland Gates
Chairman, Board of Supervisors,
County of San Luis Obispo,
State of California

6058-289


RANCHO
SANTA
YSABEL
LIMITS OF FREEWAY AGREEMENT
RIVERA LASIA LINE
GOLD HILL RD
BANCHITA CANYON RD
TO BORREGO
HUERO CREEK
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS - DISTRICT V
V-SLO-46-298-320
FREEWAY
IN THE COUNTY OF SAN LUIS OBISPO
BETWEEN THE EAST CITY LIMIT OF PASO ROBLES
AND NOER HUERO CREEK
EXHIBIT A
SLO 46 298-320 1:1000 July 1964 54-56.1

Appendix J: 2003 Paso Robles General Plan Circulation Element Excerpt

- Preliminary cost estimates
- Recommended circulation changes to the Circulation Element Map

Deficient Circulation Corridors

Using the 2025 travel forecasts, Levels of Service, based on thresholds in Table CE-2, have been identified for all major arterials and collectors within Paso Robles, as summarized in Table CE-3. Shown in Table CE-4 are the projected circulation improvement requirements through buildout of the General Plan. Also indicated on this table is the estimated time of need of these improvements at a LOS "D" threshold and their estimated opinions of cost. It is important to note that the LOS projections are based on the assumption that all planned mitigation measures are implemented (Example: all street widenings occur by 2025).

Table CE-2.
Level of Service Threshold Volumes for Urban/Suburban Roadway Types

Roadway Type	Total Daily Vehicles in Both Directions (ADT)				
	Level of Service A	Level of Service B	Level of Service C	Level of Service D	Level of Service E
4-Lane Divided Freeway	28,000	43,200	61,600	74,400	80,000
6-Lane Divided Arterial (with left-turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Divided Arterial (with left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Collector (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Collector (no left-turn lane)	8,000	9,500	10,500	12,000	13,500

ADT = Average Daily Traffic

Note: 1. Based on "Highway Capacity Manual", Transportation Research Board, 1997.

2. All volumes are approximate and assume ideal roadway characteristics. Actual threshold volumes for each Level of Service listed above may vary depending on a number of factors including curvature and grade, intersection or interchange spacing, percentage of trucks and other heavy vehicles, lane widths, signal timing, on-street parking, amount of cross traffic and pedestrians, driveway spacing, etc.

Table CE-3
Year 2025 Average Daily Traffic Forecasts and Levels of Service on Roadway Segments

Roadway Segment	From	To	Planned No. of Lanes	Approved General Plan ADT	Approved General Plan LOS
U.S. 101	South City Limits	S.R. 46 West	4	70,700	D*
U.S. 101	S.R. 46 West	Spring Street South	4	61,800	D*
U.S. 101	Spring Street South	13th Street	4	38,000	B
U.S. 101	13th Street	S.R. 46 East	4	46,900	C
U.S. 101	S.R. 46 East	Spring Street North	4	34,700	B
U.S. 101	Spring Street North	North City Limits	4	32,400	B
S.R. 46 East	U.S. 101	Union Road	6	35,100	B
S.R. 46 East	Union Road	Airport Road	4	33,200	B
S.R. 46 East	Airport Road	Dry Creek Rd / Jardine Rd	4	23,500	B
24th Street	Spring Street	U.S. 101	4	17,300	A
Airport Road	S.R. 46 East	Dry Creek Road	2	9,700	A
Airport Road	Union Road	S.R. 46 East	4	27,900	C
Airport Road	Linne Road	Union Road	4	19,700	A
Charolais Road	South River Road	Rambouillet Road	2	6,900	A
Charolais Road	Rambouillet Road	Creston Road	2	3,500	A
13th Street	Spring Street	Riverside Ave.	4	22,000	A
13th Street	Riverside Ave.	South River Road	2***	27,400	C
Creston Road	South River Road	Golden Hill Road	4	15,100	A
Creston Road	Golden Hill Road	Niblick Road	4	22,600	B
Creston Road	Niblick Road	Charolais Road	4	9,300	A
Creston Road	Charolais	East City Limits	2	5,000	A
Gilead Lane**	Golden Hill Road	Airport Road	2	3,400	A
Golden Hill Road	Creston Road	Rolling Hills Road	4	6,400	A
Golden Hill Road	Rolling Hills Road	Union Road	4	6,400	A
Golden Hill Road	Union Road	S.R. 46 East	4	9,700	A
Linne Road	Fontana Road	East City Limits	2	500	A
Nacimiento Lake Drive	West City Limits	24th Street	2	11,000	A
Niblick Road	Spring Street	South River Road	4	25,300	C
Niblick Road	South River Road	Rambouillet Road	4	27,400	C
Niblick Road	Rambouillet Road	Creston Road	4	26,800	C
North River Road	Union Road	S.R. 46 East	2	2,800	A
North River Road	S.R. 46 East	North City Limits	2	1,000	A
Rolling Hills Road	Creston Road	Golden Hill Road	2	2,700	A
Sherwood Road	Creston Road	Fontana Road	4	20,300	A
Sherwood Road**	Fontana Road	Linne Road	2	7,900	A
South River Road	South City Limits	Charolais Road	4	4,900	A
South River Road	Charolais Road	Niblick Road	4	18,400	A
South River Road	Niblick Road	Navajo Road	4	10,000	A
Spring Street	1st Street	13th Street	2***	16,900	A

Table CE-3
Year 2025 Average Daily Traffic Forecasts and Levels of Service on Roadway Segments

Roadway Segment	From	To	Planned No. of Lanes	Approved General Plan ADT	Approved General Plan LOS
Spring Street	13th Street	24th Street	2***	23,000	B
Spring Street	24th Street	36th Street	2	14,100	C
Union Road	North River Road	Walnut Drive	2	4,800	A
Union Road	Walnut Drive	Golden Hill Road	2	3,000	A
Union Road	Golden Hill Rd	S.R. 46 East	2	3,700	A
Union Road	S.R. 46 East	East City Limits	2	5,700	A
Buena Vista Drive	S.R. 46 East	Experimental Station Road	2	14,100	C
Buena Vista Drive	Experimental Station Road	North City Limits	4	8,800	B
Dry Creek Road	Airport Road	S.R. 46 East	2	3,700	A
Nickerson Drive	Niblick Road	Creston Road	2	1,800	A
Ramada Drive North	S.R. 46 West	Calle Propano	2	4,100	A
Ramada Drive South	S.R. 46 West	South City Limits	2	2,800	A
Rambouillet Road	Charolais Road	Niblick Road	2	1,900	A
South River Road	Navajo Road	Creston Road	2	8,400	A
Theater Drive	S.R. 46 West	South City Limits	2	1,500	A
Vine Street	S.R. 46 West	1st Street	2	2,100	A
Vine Street	1st Street	24th Street	2	3,000	A
Vine Street	24th Street	36th Street	2	2,200	A

Notes: 1. Bold text indicates roadway segment forecasted to operate at LOS "D" or worse conditions.

*2. * LOS D is acceptable within Caltrans' right of way ** These roadways are not included in the current General Plan*

*3. *** Assumes implementation of the downtown circulation plan*

Table CE-4.
Traffic Volume Thresholds for Roadway Improvements

Roadway Segment	Limits	Roadway Improvement	Approximate Year of Needed Improvement	Preliminary cost estimate
			LOS D	
	U.S 101/S.R. 46	Interchange Modification	2000	*
S.R. 46	From U.S. 101 to Union Road	Six-Lane Arterial or Four-Lane Freeway (Corridor Study)	2021	*
S.R. 46	From Airport Road to Dry Creek Road/Jardine Road	Six-Lane Arterial or Four-Lane Freeway (Corridor Study)	2005	*
24 Street	From Spring Street to U.S. 101	Two Lane to Four Lane Road Widening	2017	$5 - 8 M
13th Street	From Riverside Avenue to South River Road	Two Lane to Four Lane Road Widening	2003	$6.5 - 7.5 M
Creston Road	From South River Road to Golden Hill Road	Two Lane to Four Lane Road Widening	2015	$20 - 25 M
Creston Road	From Golden Hill Road to Niblick Road	Two Lane to Four Lane Road Widening	2004	$ 3 - 5 M
Niblick Road	From South River Road to Melody Dr.	Two Lane to Four Lane Road Widening	2003	$0.5 - 1.0 M
Niblick Road	From Melody Dr. to Creston Road	Two Lane to Four Lane Road Widening	2003	$0.25 - 0.5 M
Sherwood Road	From Creston Road to Fontana Road	Two Lane to Four Lane Road Widening	2016	$0.25 - 1.0 M
4th Street	Spring Street to Riverside Avenue	Two-lane to Three-lane Road. Widening	2003	$5.0 - $6.0 M**
Union Road	From Golden Hill Road to N. River Road	Two-lane road to Two-lane Collector	2003	$0.5 - $1.0 M
Buena Vista Drive	From Experimental Station Road to Dallons Drive	Two Lane Arterial to Four-lane Arterial Widening	2025	$0.25 - 0.5 M
Charolais Road	From South River Road to U.S. 101	New Four Lane Roadway and Bridge Over the Salinas River	2025	$35 - 45 M**

** Preliminary cost estimate dependent on outcome of corridor study*
*** Preliminary cost estimate dependent on outcome of project study report*

As shown on Figure CE-3, circulation corridor improvements to both State Route 46 and the City street system will be required to obtain and then maintain acceptable Level of Service "D" travel conditions within and through the City of Paso Robles. The street corridors requiring circulation improvements between 2000 and 2025 include the following:

- State Route 46 from US 101 (including its interchange) to Jardine Road
- 4th Street from Spring Street to Riverside Avenue, including realignment and new railroad under-crossing
- 13th Street / Creston Road from Riverside Avenue to Stoney Creek Drive
- 24th Street from Spring Street to US 101

The following briefly describes the corridor deficiency and potential mitigation based on the LOS "D" standard.

U.S. 101 / S. R. 46 East / 24th Street Interchange - As a part of the SR 46 East Corridor Study, alternative corridor improvements are being considered, including, but not limited to, improving the existing highway to a full freeway standard or creating a freeway bypass with a new freeway to freeway interchange with US 101 to the north. If such a freeway bypass is not constructed, improvements to the existing US 101/SR 46 East/24th Street interchange is likely needed. Currently, traffic congestion occurs during the peak hours, particularly on Friday afternoons, when there is an influx of tourist travel from the Central Valley to the Central Coast area. Alternative interchange modification designs are being explored as a part of the SR 46 East Corridor Study. However, a concept has not yet been put forth as the preferred alternative. Any improvement to this interchange however, will likely be costly due the existing surrounding development to the west and Salinas River to the east.

State Route 46 from US 101 to Jardine Road - Through the year 2025, the current two (2) to four (4) lane segments of State Route 46 within Paso Robles will need to be upgraded. Specifically, as feasible, the four lane segment from US 101 to Golden Hill Road would need to be expanded to six (6) lanes and the two lane segment from Airport Road to Jardine Road, upgraded to four (4) lanes, or to a 4-lane freeway or a combination of these alternatives. Although with sufficient right of way such widening seems cost effective and logical, the lack of interchange capacity and flexibility to expand at US 101/State Route 46 dictates the need to consider potential alternative solutions.

A concurrent study, entitled, S.R. 46 East Corridor Study, is being performed under the direction of the San Luis Obispo Council of Governments (SLOCOG) that is currently evaluating alternative State Route 46 corridor improvements. This study is exploring both the future status (highway, expressway or freeway) as well alternative parallel facilities. As alternative access is provided there is anticipated to be a limitation or elimination of access to Highway 46 East at Union Road and potentially uncontrolled intersections.

Spring Street from 1st Street / Niblick Road to 4th Street - Spring Street, with the removal of on-street parking, is of sufficient width to accommodate four through lanes of travel and left turn channelization to the 4th Street intersection, where the outside northbound lane will be designated as a mandatory right-turn to 4th Street. By redirecting travel to an improved connection to Riverside Avenue, Spring Street north of 4th Street will reduce in projected traffic volume to approximately 14,000 ADT and can be preserved as a two-lane collector road,