



UPDATED

Business Plan

SEPTEMBER 2009

VOLUME I

*"Decision - Makers
Guide to Improving
the Route 99 Corridor"*



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Location Map

This Business Plan update encompasses three separate Volumes as noted below.

- Volume I: Route 99 Updated Business Plan
- Volume II: Updated Route 99 Business Plan - Financial Program
- Volume III: Updated Route 99 Business Plan - Appendices A, B, C, D, E

Volume I is the primary Business Plan document with Volume II and Volume III providing essential supporting information and data.

Route 99 first became a State highway in 1909, designated as Legislative Route Number 4. It was paved in about 1913–1914 and in the 1920’s was redesignated as U.S. 99 and “The Golden State Highway.” Some segments of U.S. 99 were widened to 3 lanes in the 1930’s and to 4 lanes during the 1930’s, 40’s, and 50’s. Since that time, most areas have been upgraded to freeway by closing at-grade intersections, or replacing them with interchanges. The last stoplight on Route 99 in the San Joaquin Valley was eliminated by the Livingston Bypass project in 1996.

The Annual Daily Traffic (ADT) for Route 99 ranges from a current level of 38,000 vehicles near Chowchilla in Madera County to over 100,000 vehicles in Bakersfield, Fresno, Modesto, and Stockton. The projected traffic volume in 2030 is from 84,000 to 217,000 vehicles. Truck traffic accounts for anywhere from 10 percent at Ming Avenue in central Bakersfield to nearly 30 percent in north Bakersfield in Kern County. The statewide average for truck volumes is about 9 percent.

Business Plan Goals

Following is a list of the goals for this Business Plan update:

- Update 2005 Business Plan data and projects to current status.
- Establish a mutually agreed upon Corridor Financial Program for completion of Business Plan project improvements.
 - a) Includes current and future funding sources
 - b) Includes an updated comprehensive list of major project improvements
 - c) Includes joint funding agreements
- Update, enhance and apply corridor performance measures.
- Establish mutually agreed upon Corridor System Management Plan (CSMP) policies that serve as overarching guidance that integrates sub-area CSMPs for the benefit of the corridor.
- Establish strategies that maximize the effectiveness of STIP and SHOPP type projects.
- Support and apply the adopted principles/outcomes of the Regional Blueprint as appropriate.
- Establish a corridor Right of Way preservation strategy that is universally accepted.
- Identify the economic benefit associated with an improved transportation corridor.



Route 99 Projects

Route 99 faces many challenges now, and in the years ahead. The most significant of these include: increases in ADT and truck traffic, encroaching development, and lack of adequate funding.

While the focus of the projects identified in this Business Plan is to increase capacity to meet demand or improve operations, safety is still the single most important consideration for Route 99. Caltrans has and continues to make good progress toward adding median barriers where appropriate to reduce or eliminate cross median accidents. In fact there are only six miles of warranted median barrier remaining along the entire 274 mile corridor. These and other safety projects are typically dealt with through the State Highway Operations and Protection Program (SHOPP). One of the most critical safety issues on the route, however, are at-grade intersections where traffic can enter, exit, or cross the freeway without the benefit of an interchange.

As a result of projects either under construction or now fully funded all existing at grade intersections will be eliminated within the next five years.

While there are many different types of projects developed by Caltrans, MPOs, Local Tax Measure Authorities, and other local agencies for the Route 99 corridor, this Business Plan focuses on major STIP improvement projects in excess of \$8 million. For the purpose of this Business Plan, these projects have been grouped into four Priority Categories. These include:

Priority Category 1—Freeway Conversion

Because all non-freeway sections either have been or will be eliminated within five years this Priority Category is now deemed complete and is only included in this Business Plan update for information purposes.

Priority Category 2—Capacity-Increasing Projects

Priority Category 2 consists of projects that will widen Route 99 to a minimum of 6 lanes throughout the corridor. Projects to widen Route 99 to 8 lanes in some urban areas, where feasible, are also included in this category. While the primary goal of these projects is to increase capacity to meet demand, there are safety benefits as well. Eliminating or reducing the incidences of stop-and-go traffic on the route will reduce the number of congestion-related accidents that currently occur.



Priority Category 3—Major Operational Improvements

This category consists of projects that will improve existing outdated interchanges and construct auxiliary lanes in urban areas. As with Priority Category 2, these projects also have a safety-related benefit.

Priority Category 4—New Interchanges

Priority Category 4 consists of projects that will construct interchanges at new locations on Route 99. The new interchanges are proposed to accommodate growth and development along Route 99.

Summary Status of Priority Categories

With the completion of all Priority Category 1 projects the focus of this Business Plan update turns to Category 2. The goal of Priority Category 2 is to increase capacity and provide a minimum 6-lane roadway. There are 22 Priority Category 2 projects that either have no funding or are partially funded. Twelve of the remaining 20 capacity-increasing candidate projects propose to convert 4-lane segments to 6 lanes. The remaining nine capacity-increasing

After completion of all projects constructed, under construction, and fully funded to widen to 6-lanes 175 miles or 64% of the corridor will have satisfied the 6-lane minimum goal.

projects propose to convert existing 6-lane segments to 8 lanes. Although there is a defined goal of achieving a minimum 6-lane facility, 4- to 6-lane projects may not always take precedence over 8-lane projects because of more pressing safety or congestion issues on a 6- to 8-lane widening segment.

Projects that propose improvements to roadway operations are in Priority Category 3. There are 28 Priority Category 3 projects remaining that either have no funding or are partially funded. Priority Category 3 projects included in this Business Plan consist of major auxiliary lane projects and improvements to existing interchanges. Operational interchange projects will vary in magnitude of scope. A small-scale project might construct additional ramp lanes, signalize ramp intersections, and/or improve ramp geometry. A larger scale project might replace a structure or structures or modify the entire configuration of the interchange. The scope of these projects would be determined based on the project’s stated purpose and need.

New interchange projects, typically prompted by a need to improve local road circulation and access due to ongoing local development, are in Priority Category 4. Three of the four original new interchange projects have no funding while one is fully funded.



There were 67 original projects that were prioritized into the four Priority Categories as a part of the 2005 Business Plan effort. Three of the original 67 projects have been split into two segments each so there are now 70 projects listed. As a result of the recent success to fully fund projects and delivery of projects to construction over the past three years 55 projects are either partially funded or have no committed funding. These projects are the primary focus of this Business Plan update.

The total estimated cost to complete the Business Plan, in 2009 dollars, has been reduced by 25% from \$6.0 billion to \$4.5 billion.

Goods Movement

Goods movement in California represents a significant factor in economic growth and job creation. Efficient goods movement in the San Joaquin Valley is essential to the viability of the nation's largest agricultural economy. Goods movement also plays a role in efforts to reduce the region's unemployment rate, one of the highest in the country.

In 2006 *Go California* specifically identified the Central Valley as one of four "Port to Border" regional corridors. Route 99 is identified as a "Major International Trade Highway Route" in the California "Goods Movement Action Plan," dated 2007. A safe and efficient Route 99 transportation corridor is vital to the economic vitality of the San Joaquin Valley. Improved transportation infrastructure will also contribute toward reduced air pollution.

The Route 99 capacity and operational improvements identified in this Business Plan are consistent with the "Goods Movement Action Plan" and represent a key contribution toward improving the efficiency of goods movement. In addition, upgrades of older Route 99 segments and interchanges are essential to meet the truck access standards of the Federal Surface Transportation Assistance Act. This is particularly important as new distribution centers and businesses locate to new or expanding areas.

Just-in-time goods delivery systems and very large regional distribution centers locating in the San Joaquin Valley provide more responsive customer service and reduced inventory storage costs to the business community. However, the result of just-in-time delivery from a roadway perspective has been higher than historical growth in truck volumes on Route 99. Truck volumes on the route vary from 10 to 30 percent, as compared to the statewide average of 9 percent. Truck vehicle miles traveled in the San Joaquin Valley region are projected to increase by 60 percent over the next 20 years. The Business Plan strategies to add capacity, improve operations, use long-life pavement where appropriate, and enlarge and add new Safety Roadside Rest Areas will all contribute to safer and more efficient goods movement.



Interstate Designation

There has been much local interest in the possible benefits of including Route 99 as a part of the Interstate system. Language included as part of the 2005 federal Transportation Act, SAFTEA-LU, designated Route as a “future Interstate route”. This has set in motion activities associated with determining whether California should follow through with applying for full designation. That process is still underway.

Interstate proponents believe that inclusion of the route in the Interstate system would make the region more attractive to new or expanded businesses, resulting in more and better paying jobs for the region. Proponents also believe Interstate designation would increase funding to the route. While Interstate designation might bring additional funds to the San Joaquin Valley it would not increase the amount of federal formula transportation funding available to California.

This Business Plan does not fully analyze the implications of Interstate designation, but it does present a discussion of the potential economic benefits of an Interstate designation scenario and an economic scenario with full implementation of Business Plan improvements. Of course there are a number of issues associated with designation. Foremost is the potential cost of upgrading the route to Interstate standards as a condition of designation. Caltrans has estimated that bringing the route up to meet all Interstate standards would cost an additional \$14 to 19 billion (2005/06 dollars) over the amount associated with the projects include in this Business Plan. However, more recent discussions with FHWA representatives and a more recent updated estimate indicates that the cost to meet “essential safety related” Interstate standards could be as low as \$1 billion.

In a consultant prepared economic analysis study indicated that the full Business Plan implementation scenario would produce an average annual increase of about 27,000 jobs in the eight county San Joaquin Valley region and a 3% increase of \$3.7 billion in Average Annual Gross Regional Product. The Interstate designation scenario could produce up to an additional 3,600 annual jobs and increase the Average Annual Gross Regional Product by 0.3% or about \$400 million.

Funding

The most significant obstacle facing the improvement of the route is the lack of adequate funding. Neither the STIP nor the SHOPP have adequate funding to maintain and improve the route. In order to address this issue, this Business Plan update now includes a corridor “financial program” as a separate document; Volume II: Updated Route 99 Business Plan - Financial Program. The Financial Program investigates the use of road tolls and a corridor development mitigation fees and several other sources as potential new sources of funding to augment traditional STIP and SHOPP funds. The program also identifies a number of innovative funding strategies. Unfortunately, most of these innovative financing methods are methods that only advance future



revenue streams. While these strategies can advance the delivery of improvement projects, most of them do not actually generate additional revenues. All of these will be necessary to achieve the goals identified in this Business Plan.

The 2005 Business Plan laid out a 20-year program to meet the goals. The program was broken down into three phases. The phases generally coincided with the Priority Categories. Phase 1 would complete Priority Category 1, and parts of Priority Categories 2 and 3. Phase 2 would complete Priority Category 2, and Phase 3 will complete Priority Categories 3 and 4. The 20-year schedule provided five years to “ramp up” and deliver all of Priority Category 1 and some of Priority Category 2 projects. Phase 1 is considered to have been accomplished over the past three years since these projects have all been either constructed or have full funding commitments.

While it is difficult to determine how much capacity the construction and engineering industries can deliver each year and how much of the route can practically be under construction simultaneously, about \$333 million appears to be a reasonable target. At \$333 million in projects per year it would take about 15 years to complete Priority Categories 2, 3 and 4. The \$333 million per year is in 2008/09 dollars. However, the effect of inflation must also be considered. The Business Plan assumes a five percent inflation rate. When calculated into this equation, each subsequent year demands additional funds, finally topping out at approximately \$880 million in year 20.

It is estimated that, from a practical standpoint, the engineering and construction industry can deliver about \$333 million/yr. We are not likely to be in jeopardy of this number since the funding stream is far below this figure.

Other 99 Issues

While the focus of the Business Plan is increased corridor capacity, there are other issues that are also discussed. These include:

- Geographic coordination of HOV lanes and ramp metering
- Long-Life Pavement strategy
- Intelligent Transportation Systems
- Landscaping and facility appearance
- Safety Roadside Rest Areas
- Land Use strategies
- Environmental strategies
- Performance monitoring



Implementation

This Business Plan proposes about a 20-year timeframe for implementing these improvements. In discussion with the MPOs, it is clear that the Region does not want to wait 20 years for implementation and there continues to be great pressure within the Region to accelerate this effort. While Caltrans continues to propose a 20-year implementation schedule in this Business Plan update, acceleration of this effort should be aggressively pursued. We have already seen some acceleration due to the influx of over \$800 million for Route 99 due to the voter approved Proposition 1B in 2006. While accelerating this program may present challenges to Caltrans, Metropolitan Planning Organizations and the construction industry, Caltrans is more than willing to accept these challenges.

Implementation of this Business Plan is the key action for success. To assure a continuum to implementation a new companion document has now been added to the Business Plan as Volume II: Financial Program. The focus of the Financial Program is laying out a strategy with follow-up financial “commitments of intent” to fund projects. These represent joint financial understandings among funding decision makers.

A new companion document, Volume II: Financial Program, has been established to assure a continuum to Business Plan implementation. The focus of the Financial Program is a financial strategy with follow-up financial “commitments of intent” to fund projects.

Another key action associated with implementation is the establishment of an annual corridor financial review and **Annual Report**. The Annual Report will present the current status of funding and delivery progress of all Business Plan projects. It also provides the opportunity for Caltrans Districts 6 and 10 and the eight San Joaquin Valley MPOs to update financial understandings to current conditions.

Recommended Financial Approach: Several project funding approaches are described in the Financial Program. It has been determined that a variation of the initially described Full Corridor Approach is the recommended financial approach. An Example is shown in Table ES.1. In essence the recommended approach establishes an ongoing dedication of IIP and RIP shares as the base funding source with balances of project funding coming from several other fund sources. Under the approach agreed upon between Caltrans and MPOs in the San Joaquin Valley 10% of each MPO RIP share, or an equivalent other fund source, for each STIP cycle will be contributed to a Route 99 Corridor Fund. This will be matched by Caltrans IIP funds. Under this scheme it will take 12 STIP cycles (24 years) to fund the projects shown in Table ES.1. However, actual project list and the decision of which projects to fund first is yet to be determined. It is expected that those decisions will be made in conjunction with the 2010 STIP programming cycle.



Table ES.1 Example of Recommended Funding Approach

Co	Limits	Proj. Desc.	Fund Sources (\$1,000s)					Tot. Cost (\$1,000s)	
			³ IIP	² MPO RIP	Co. Meas	Dev. Fees	¹¹ Vehicle License Fees		Other
Ker	SR 119 to Wilson Rd.	Widen 6F to 8F	\$14,500	\$14,500		⁴ \$14,500	\$14,500		\$58,000
Tul	Prosperity Ave to Goshen	Widen 4F to 6F	\$51,000	\$51,000			\$51,000	² \$51,000	\$204,000
Fre	Central Ave to Jensen Ave	Widen 6F to 8F	\$11,750	\$11,750		⁶ \$11,750	\$11,750		\$47,000
Mad	Ave 7 to Ave 12	Widen 4F to 6F	\$13,600	\$13,600		⁷ \$13,600	\$13,600	⁸ \$13,600	\$68,000
Mer	Hammett Ave to S. Turlock OC	Widen 4F to 6F	\$20,000	\$20,000		⁹ \$20,000	\$20,000		\$80,000
Sta	Carpenter Rd to SJ CL	Widen 6F to 8F	\$18,250	\$18,250		⁶ \$18,250	\$18,250		\$73,000
SJ	Harney Rd to Sacto CL	Widen 4F to 6F	\$36,000	\$36,000	¹⁰ \$36,000		\$36,000	⁸ \$36,000	\$180,000
Multi-STIP Cycle Totals			\$165,100	\$165,100	\$36,000	\$78,100	\$165,100	\$100,600	\$710,000
<p>Notes:</p> <ol style="list-style-type: none"> This project list is established jointly by Caltrans and the San Joaquin Valley MPOs. Decisions of which project(s) and how much to contribute are to be jointly determined as part of each STIP programming cycle. The seven (eight?) MPOs participate in the RIP fund share by contributing 10% of its RIP (or alternate source) share allocation from each STIP programming cycle into a fund that is used to participate in the joint funding of agreed upon projects. For example, based on the RIP shares for each MPO in the 2008 STIP cycle, each share would be: <ul style="list-style-type: none"> Kern: \$5.9M Merced: \$1.1M Tulare: \$2.2M Stanislaus: \$2.1M Fresno: \$4.4M San Joaquin: \$2.7M Madera: \$0.6M IIP funds match MPO RIP funds. 25% of total cost funded by Bakersfield Metro Area Development Impact Fee Program. 25% of total cost funded by Federal Transportation Act special earmark funds. 25% of total cost funded by development mitigation fees. 25% of total cost funded by development impact fees. 20% of total cost funded by federal Transportation Act special earmark funds. 20% of total cost funded by development impact fees. 20% of total cost funded by County Measure Program. Revenue generated by \$4 Vehicle License Fee surcharge for vehicles registered within each county. 									



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Document Volumes List

- Volume I: Updated Route 99 Business Plan
- Volume II: Updated Route 99 Business Plan - Financial Program (*Separate document*)
- Volume III: Updated Route 99 Business Plan - Appendices A, B, C, D, E (*Separate document*)



Chapter 1 Introduction

1.1 Overview and Mission Statement of Business Plan

Various efforts have been undertaken to develop guidance and planning documents for the improvement of the Route 99 corridor through the San Joaquin Valley. The California Department of Transportation (Caltrans) District 6 and 10, the eight Metropolitan Planning Organizations (MPOs) in the San Joaquin Valley and the Great Valley Center (GVC) have been key leaders and participants in these efforts. Caltrans completed the *Route 99 Master Plan* that includes a *Business Plan Element* and an *Enhancement Plan Element* dated December 7, 2005 for the 274-mile segment of Route 99 from its junction with Interstate 5 in Kern County, to the northern limits of San Joaquin County. This Master Plan focused on enhancing the appearance and driving experience and those major improvements necessary to improve route safety, capacity, operations, and road conditions. The original Master Plan was developed in conjunction with the GVC and the eight Metropolitan Planning Organizations in the San Joaquin Valley.

This updated Business Plan Element was written with the focus toward providing decision-makers with both a status update to the 2005 Plan and an implementation strategy to achieve the goals that remain to be addressed.

The mission of this Business Plan is to:

- 1) Update goals, objectives and the Plan to current conditions.***
- 2) Chart a course toward completing the implementation of project improvements not yet constructed with focus toward attainment of the main goal of a minimum six lane freeway throughout the corridor.***

This Business Plan is a “nuts and bolts” approach to achieving the functional goals laid out in the statewide Interregional Transportation System Plan (ITSP), the Route 99 Transportation Corridor Report (TCR), and the Route 99 Enhancement Master Plan Element. By clearly identifying long-term goals for the corridor—and a corresponding list of prioritized projects to achieve those goals—the ability to make funding decisions regarding the corridor as a whole will be much easier. In addition to the extensive list of prioritized projects, this document will recommend strategies that could enhance the continuity of the corridor, while reducing overall costs and time in the project development process.

The focus of this Business Plan is on major facility improvements that would typically be funded through the State Transportation Improvement Program (STIP) or similar programs. While the



Business Plan will touch on some projects that could be funded by the State Highway Operations and Protection Program (SHOPP), that is not its primary focus. In general terms, the STIP provides for capacity-increasing projects while the SHOPP is focused primarily on maintaining and operating the existing State highway system. These programs are both discussed in further detail later in this report.

While the focus of the projects identified in this Business Plan is those is to increase capacity or improve operations, safety is still the single most important consideration for Route 99. Safety projects are typically funded and delivered through the SHOPP; however, it should be recognized that capacity-increasing projects and operational improvement projects typically provide safety features as well. These features may vary from the installation of median barriers, to the closing of at-grade intersections, to the installation of signal lights at ramp intersections. In reality, some of the more serious safety issues on the route, specifically the at-grade intersections, are beyond the ability of the SHOPP to remedy and must be built as a part of the STIP.

1.2 Business Plan Goals

The overall purpose of the Business Plan is to provide local and regional transportation decision-makers, Caltrans, and Metropolitan Planning Organizations with a universally accepted guide they can use when making ongoing funding and policy decisions along the Route 99 corridor in the San Joaquin Valley.

Following is a list of the goals for this 2009 Business Plan update:

- Update 2005 Business Plan data and projects to current status.
- Establish a mutually agreed upon corridor Financial Program for completion of Business Plan project improvements.
 - a) Includes current and future funding sources.
 - b) Includes an updated comprehensive list of major project improvements.
 - c) Includes joint financial understandings.
- Update, enhance and apply corridor performance measures.
- Establish mutually agreed upon Corridor System Management Plan (CSMP) policies that serve as overarching guidance that integrates sub-area CSMPs for the benefit of the corridor.
- Establish strategies that maximize the effectiveness of STIP and SHOPP type projects.
- Support and apply, as appropriate, the adopted principles/outcomes of the Regional Blueprint.
- Establish a corridor Right of Way preservation strategy that is universally accepted.
- Identify the economic benefit associated with an improved transportation corridor.



1.3 Challenges

Route 99 is an integral part of the State highway system and crosses many diverse areas. The effort to produce an updated Route 99 Corridor Business Plan required input and consensus between Caltrans and local partners. At a minimum, San Joaquin Valley leaders face the following challenges:

- **Reaching consensus:** The San Joaquin Valley is a large geographic area with eight counties, 59 cities, two Caltrans Districts and many diverse organizations. Reaching consensus among important and sometimes competing issues pose a significant challenge.
- **Finding funds to the complete remaining unfunded Business Plan projects:** Probably the biggest challenge, from a transportation perspective, facing the San Joaquin Valley is finding sufficient funding to complete remaining Business Plan projects. The inclusion of Volume II: Financial Program as part of this Business Plan is a major tool toward addressing this issue.
- **Gaining timely resource agency approvals in advance of construction:** Obtaining approval of environmental documents, as well as obtaining permits from various resource agencies, is typically the controlling operation for the first five years of a project's schedule. Because of the potential magnitude of the investment considered in this report, there may be significant opportunity to obtain early consensus from resource agencies through advance mitigation for groupings of projects. Although this potential exists, it has not yet been successfully accomplished in the State. Advance mitigation for large sections of freeway will require close cooperation with multiple federal and State agencies.

1.4 Local and Regional Cooperation

In an effort to gain the cooperation and consensus necessary to accomplish such a large task, multiple meetings have been held with Caltrans' local partners. The following is a list of the agencies and groups that have been involved in development of this plan:

- Kern Council of Governments
- Kings County Association of Governments
- Tulare County Association of Governments
- Council of Fresno County Governments
- Madera County Transportation Commission
- Merced County Association of Governments
- Stanislaus Council of Governments
- San Joaquin Council of Governments
- Great Valley Center
- Highway 99 Task Force (as part of original 2005 Business Plan)
- Caltrans, Districts 6 (Fresno) and 10 (Stockton)



Chapter 2 Existing Facility

2.1 Route 99 Background

Route 99 first became a State highway in 1909, designated as Legislative Route Number 4. It was paved in about 1913-1914 and in the 1920's was redesignated as U.S. 99 and "The Golden State Highway." Some segments of U.S. 99 were widened to 3 lanes in the 1930's. This led to head-on collisions in the middle lane, which was intended for passing and turning. U.S. 99 was gradually widened to a 4-lane expressway during the 1930's, 40's, and 50's. The widening was often done on new alignments, frequently bypassing towns. The last 3-lane section of U.S. 99 became a 4-lane expressway in May 1960.

During the 1960's, the black and white U.S. 99 shields gave way to the familiar green CA-99 signs shaped like miners' spades. Since that time, most areas have been upgraded to freeway by closing at-grade intersections, or replacing them with interchanges. The last stoplight on Route 99 in the San Joaquin Valley was eliminated by the Livingston Bypass project in 1996.

With completion of about 26 miles of projects either fully funded or currently under construction in Madera and Merced counties all of the "freeway gaps" identified in the 2005 Business Plan will have been eliminated. Therefore, by 2012, 100% of the 274 mile corridor will attain the objective of "full freeway status". Also, with these projects and others already constructed the other half of the primary corridor objective "to have a minimum of 6 lanes" will be 64% complete. Completing the remaining 36% of the corridor to 6 lanes now becomes the focus of this Business Plan update.

"Completing the remaining 36% of the corridor to 6 lanes now becomes the focus of this Business Plan update."

Since the 1910's, when Route 99 was first developing as a State highway, agricultural improvements—especially irrigation—have led to significantly greater crop yields. Transporting these valued commodities to market has made Route 99 an even more vital economic link. Changes to business practices that depend upon "on-time delivery" of goods to supplant on-site storage have led to higher truck volumes on the route. Rapid population growth over several decades has also led to more traffic and a greater dependence on Route 99 as the north-south backbone of the San Joaquin Valley.

The Annual Daily Traffic (ADT) ranges from a current level of 38,000 vehicles near Chowchilla in Madera County to over 100,000 vehicles in Bakersfield, Fresno, Modesto, and Stockton. The projected traffic volume in 2030 is from 84,000 to 217,000 vehicles. Truck traffic accounts for anywhere from 10 percent at the junction of Route 58 in central Bakersfield to nearly 30 percent



in north Bakersfield in Kern County. The statewide average for truck volumes by segment is about 9 percent.

Urbanized versus Rural Areas

Urbanized areas are defined as a population of 50,000 or greater and urban areas have a population of 5,000 to 50,000 as determined by the U.S. Census Bureau. Currently, eleven urbanized areas are located along this stretch of Route 99, including: Bakersfield, Delano, Tulare, Visalia, Fresno/Clovis, Merced, Turlock, Modesto, Manteca, Stockton, and Lodi. Other cities will likely become urbanized and may be treated as urbanized rather than rural for some projects.

This is an important element to consider because different roadway standards and treatments apply to urban and rural areas. Urban areas may typically have:

- Interchanges spaced closer together.
- More lanes to handle greater traffic volume and auxiliary lanes to help local and regional traffic merge on and off the freeway.
- More enhancements, such as soundwalls, fencing, and irrigated landscaping.
- A depressed or elevated roadbed.
- More storage for storm water runoff.
- Greater emphasis on cross street sidewalks and lighting.
- Intelligent Transportation Systems such as ramp meters and changeable message signs.

As project features are considered in later sections of this Business Plan, it is important that these distinctions be kept in mind.

2.2 Physical Characteristics and Issues

2.2.1 Highway Safety

Safety is the top priority of Caltrans and local governments and has been a major focus for the corridor. An essential part of this effort has been the elimination of at grade intersections by means of constructing new interchanges and the addition of median barriers to prevent cross median accidents.

With the recent construction of new interchanges and the fact that all remaining non-freeway segments are fully funded the at grade cross-median intersection safety issue has been addressed.

Caltrans has a number of criteria to determine the appropriate location and type of median barriers. The primary criteria include accident history, median width, and traffic volumes.



Because of the recent concerted effort of District 6 and 10 only 6 miles of the 274 mile corridor are now without median barriers where they are warranted.

Standard types of median barriers for new installation are concrete safety-shaped barriers and metal thrie-beam barriers. Temporary concrete barriers may be used under certain conditions.

Caltrans attempts to preserve the median oleander shrubs when barriers are installed. When this is not feasible, Caltrans provides mitigation in the form of adjacent landscaping; however, once the facility is upgraded to 6 lanes, preservation of the oleanders generally becomes impractical.

Removing or modifying fixed objects along the sides of the highway has increased safety significantly. This includes removing large metal signposts, installing lighting and signs on bases that break away when they are hit, and removing other unyielding objects or adding barriers to absorb the energy of a collision. Removing roadside objects creates a clear recovery zone, which gives drivers who run off the road an opportunity to recover. Barriers, guardrails, and yielding roadside features reduce the severity of run-off-the-road accidents.

Safety Roadside Rest Areas

Providing safety roadside rest areas for fatigued drivers is an important part of Caltrans' safety efforts. Tired drivers and unsafe roadside parking are significant problems that can be reduced with adequate rest areas that include parking areas, drinking water, toilets, tables, benches, telephones, and information boards.

Today, there are three rest areas along this segment of Route 99. The Philip S. Raine and Chester H. Warlow rest areas are in Tulare County and the Enoch Christoffersen rest area is in Stanislaus County. According to the Rest Area Program guidelines, there should be no more than 60 miles between rest areas. With the exception of the distance between the Phillip S. Raine and Chester H. Warlow rest areas, the gap is much greater than this.

Existing rest areas are also severely under capacity, especially for trucks; this means that truck drivers may keep driving or park illegally along highway ramps.

2.2.2 Highway Capacity Needs

Reduced speeds and bottlenecks along the Route 99 corridor are indications that the current capacity of Route 99 is not adequate to meet demand, especially during commute hours in urbanized areas. Some additional lanes have been added to Route 99 in recent years, but congestion persists due to increases in ADT, increases in traffic merging on and off the freeway, and a large percentage of truck traffic.



Capacity is affected by the number and width of lanes; the location, spacing, and type of interchanges; the width of shoulders; the condition of the pavement; and gaps in the freeway system. Over the next 20 years, there will be a significant need to add lanes to Route 99. However, the ability to widen the route, particularly in urbanized areas, is hampered by currently available right-of-way and ongoing encroachment into future right of way needs by adjacent development.

2.2.3 Operational and Structural Needs

Interchanges

Interchanges have a greater effect on the urban corridor than any other single feature. An interchange allows high volumes of traffic to enter and exit the highway via ramps, and provides a grade separation between the highway and cross street. Many of the interchanges on Route 99 were built in the 1950's and 60's, and were designed for significantly lower volumes than those encountered today. Inadequate geometrics, as well as limited storage and merge distance all contribute to congestion on the ramps, local roads, and the highway itself. There is a need to modify or replace these interchanges to improve the safety and operation of the route; however, even minor modifications to interchanges on Route 99 may be limited by the State right-of-way and adjacent local development.

Inadequate spacing between interchanges can also affect the flow of traffic, especially during commute hours in urbanized areas. This leads to insufficient distances for vehicles to safely and efficiently merge on and off the highway, which in turn leads to congestion and increased accidents. Where substandard spacing exists, interchange spacing should be increased or other operational features, such as auxiliary lanes, constructed to decrease the merging conflicts and improve operations. This may result in closing some interchanges.

Pavement

Much of the pavement on Route 99 is 30 to 50 years old, and has already exceeded its design life, warranting reconstruction. While the statewide average for truck traffic is about 9 percent, trucks make up as much as 25 to 30 percent of the traffic on Route 99 at several locations. This extra stress on aged pavement, along with the lack of adequate funding to reconstruct the pavement, is the single most significant factor contributing to the current poor pavement conditions. Complete pavement reconstruction is the best long-term solution; however, the length of time it takes for reconstruction, consequent traffic delays, and the high cost make this strategy problematic.

2.2.4 Highway Appearance

The somewhat negative appearance of some segments of Route 99 affects the quality of life for Valley residents and the perceptions of travelers, which can have an impact on the local economy. A visually appealing transportation corridor should either blend into or complement the



landscape. The companion document to this Business Plan Element, the *Route 99 Corridor Enhancement Master Plan Element*, describes this connection between corridor appearance and quality of life in detail, so it will not be repeated here. A few key highlights are worth noting, however.

Highway Structural Themes

Over the years, incremental improvements to Route 99 have resulted in a mix of old and modern bridges, sign panels, landscape types, fences, and lighting fixtures. The lack of unified features has left the corridor with a diminished appearance and no community identity.

Soundwalls have also been added along the corridor to reduce noise, but many of them did not have screening vegetation planted and they have become a magnet for graffiti. Others need to be repaired or replaced.

Outside of Caltrans' right-of-way, abandoned buildings, billboards, junkyards, microwave towers, and trash create unsightly views for travelers. Communities can use tools such as zoning laws and other ordinances to help clean up these eyesores. At the same time, they can preserve old structures such as water towers and barns to create a more interesting view shed.

Because Route 99 is the gateway to urbanized communities along the corridor, improving the appearance can help reinforce a community's identity and give travelers a good impression of the community, which in turn should improve local economies.

Planting Types

The roadsides along Route 99 include two types of planting—"Functional Planting" and "Highway Planting."

"Functional Planting" is used in the rural segments of Route 99 and is made up mostly of the original planting along the corridor. The original plantings were composed of eucalyptus trees to frame the highway and oleander shrubs planted in the median to block the glare of oncoming headlights. Groundcover, planted as erosion control in rural areas, is mostly non-native grasses.

In recent years, many oleander plants, which came to symbolize Route 99, have been removed due to space constraints to make way for median barriers or additional traffic lanes. Many of the eucalyptus trees were also removed for similar reasons, or due to decay or safety issues.

"Highway Planting" is used in urban and urbanized areas and goes beyond function to improve aesthetics. Highway planting includes trees, shrubs, and groundcovers watered by automatic irrigation systems. This landscaping also helps control dust, erosion, fire, and weeds. In addition,



highway planting can help delineate the route, provide headlight screening, conceal eyesores next to Route 99, or conceal the roadway from the community.

Unfortunately, both of these landscape types may suffer from a lack of adequate maintenance due to funding constraints. Further, many of the areas with “Highway Planting” are old, antiquated, and difficult to maintain. Maintenance of the roadside is discussed later in this chapter.

2.3 Truck Traffic

Route 99 is a critical artery for goods movement in the State of California and the San Joaquin Valley, and it is important for the overall economic vitality of the State. It is known as a “Priority Global Gateway” for goods movement in the Global Gateways Development Program. Accordingly, truck traffic is playing an increasingly larger role in the transportation fabric of the valley.

As previously mentioned, truck volumes on Route 99 in the San Joaquin Valley vary from a low of 10 percent to a high of 30 percent. This is compared to the statewide average of about 9 percent. Some examples of truck traffic impacts are:

- Lower capacity of the highway, contributing to congestion.
- Increased conflicts between slower-moving trucks and fast-moving cars.
- Distressed pavement conditions from the extra stress of the truck weight and numbers.
- More parking to accommodate the roadside rest requirements of trucks.
 - Interchange upgrades to accommodate modern truck access.

According to a 2001 survey called the “California Heavy Duty Truck Travel Survey,” 24 percent of truck trips are regional in nature or may stay in the county area, and 76 percent of truck trips are interregional or outside the county area. While this was a statewide study, it has direct application to the Route 99 corridor.

2.4 Maintenance of Route 99

Over the last five years, maintenance costs for highway elements including roadsides, pavement, bridges, guardrail, median barrier, signs, and delineation, have increased an average of 4 percent per year, while staffing resources have been reduced by 10 percent for the same time period. Along with an increase in inventory on Route 99 and other State routes, maintaining adequate appearance and condition ratings for the roadway is becoming increasingly difficult. Routine maintenance costs by State forces and highway maintenance contracts on Route 99 are projected to be \$300 million over the next 10 years. The 10-year Constrained SHOPP indicates contracts



expected to total nearly \$80 million with the focus of the projects being split between rehabilitation and roadway preservation projects. This investment is expected to provide highway appearance and condition ratings similar to current conditions, which are less than Caltrans performance targets and desires of the communities.

At a time when the inventory of highway pavement and roadside landscape miles are increasing, maintenance resources are decreasing. Maintenance efforts for safety and preservation items must take priority over maintenance efforts for appearance items. Keeping up the appearance and condition of aging highways and roadside facilities are becoming more difficult.

Roadbed Maintenance

Maintaining the integrity and serviceability of the pavement on Route 99 requires a continuous effort by maintenance forces. As rigid Portland cement concrete slabs become broken from truck traffic, they are patched temporarily until a Major Maintenance or SHOPP project can be designed and contracted to replace them. As flexible asphalt concrete (AC) pavement becomes distressed and deteriorates due to traffic, age, or storm damage; pothole filling, thin overlays, and other strategies are used as interim repairs until repaving or rehabilitation projects can begin.

Bridge Structure Maintenance

Bridge maintenance crews respond to a variety of bridge damage incidents on a weekly basis. Over-height loads and accidents on the mainline cause damage, as well as accidents on the bridge decks themselves. In some extreme cases, bridges have been closed and traffic detoured for long periods because of structural damage from accidents or deterioration of reinforced steel and other structural elements. Routine maintenance on bridges includes replacement of expansion joint material, repairing rails and fences, and patching spalled concrete.

Traffic Control Elements

Traffic control elements including lighting, striping, signs, median barriers, guardrail, and fencing are maintained continuously on a routine basis and in response to incidents. Signs, light poles, and median barriers damaged by accidents are repaired as quickly as materials are available and resources allow. Maintenance of these elements requires specialized equipment and expertise.

Storm Maintenance

Route 99 storm-related maintenance activities involve drain cleaning and monitoring, patching quickly forming potholes in the distressed AC pavement sections, and grading shoulders to limit drop-offs between the pavement and the dirt shoulders. Maintenance patrol during storms is a routine practice.



Litter Collection

Roadside litter is a growing problem that significantly detracts from the appearance of the transportation facility. Caltrans uses a number of innovative programs to supplement its litter removal effort including:

- Adopt-A-Highway program, which uses volunteers to clean up litter. The program is in place along Route 99, but there are some gaps.
- Low-risk inmate and probationary crews supervised by law enforcement personnel to assist in litter and weed removal.
- California Conservation Corps crews, hired through intergovernmental contracts, to assist in litter and weed removal.

Graffiti Control

Reducing graffiti takes a quick response by maintenance staff, but in many areas, Caltrans and local agencies appear to be losing the battle. The only real solution is to provide planting in front of flat surfaces to deter graffiti.

Adopt-A-Soundwall is part of the Adopt-A-Highway program that provides volunteer labor to clean up graffiti. Currently, one soundwall in Stanislaus County has been adopted into this program.

Roadside Vegetation Management (Weed Control)

Vegetation along rural roadsides usually includes grasses and broad-leaved, non-woody plants used for erosion control following road construction. This vegetation is non-irrigated, but must be maintained to improve the appearance of the roadside, reduce fire risk, and maintain sight distances.

Caltrans primarily uses mowing and chemicals to control this vegetation. Since 1992, however, Caltrans has been reducing the use of chemicals. In 2000, a 50 percent reduction was met and by 2012, the goal is to reduce chemical use by 80 percent. Since mowing is much more labor intensive than spraying, it will become increasingly difficult to adequately control weeds in the rural areas.

Maintenance of Highway Planting

Fully planted and irrigated urban landscaping along Route 99 requires ongoing, intensive maintenance. Landscape rehabilitation projects are developed to replace dead and dying landscapes and to make aging roadsides easier to maintain. These projects, however, must compete with pavement, operations, and safety projects, and due to funding limitations are currently not being constructed.



Each Landscape Maintenance worker should not be responsible for maintaining the landscape and controlling litter, weeds, and graffiti for more than 15 to 20 acres. The statewide average responsibility, however, is about 40 acres per worker. The staffing levels for landscape workers assigned to Route 99 are at the statewide average.

Annual Maintenance Costs

Appendix E contains a projection of the 10-year maintenance costs for the Route 99 corridor in Districts 6 and 10. These costs assume a rate of inflation of 3 to 5 percent per year. The tables show maintenance costs are significantly higher on the segments of the route in the urbanized areas. This is due to a number of factors, but the most critical are additional lanes, higher traffic volumes, and more landscaped acres. The projected costs assume that the route remains in its current configuration, that no new lanes or landscaping are added. In reality, as the projects presented in this document are built, these costs will increase. While some of the maintenance categories such as “Roadbed” may actually decrease due to new and rehabilitated pavements, this will be more than offset by increases in the other categories.

2.5 Environmental Resources

The San Joaquin Valley is rich in diverse natural habitats, cultural and historical resources, and fertile farmland. Improving Route 99 must be done in a way that protects these irreplaceable resources, as well as water and air quality. Noise is another environmental concern as urban areas along this route continue to grow and more housing is built close to Route 99.

Biological Resources

The valley grasslands, oak savannas, riverbanks, and freshwater marshes that travelers enjoy along Route 99 also provide habitat for wildlife. To survive, animal species such as the San Joaquin kit fox must be able to travel between these areas to find food, escape predators, and migrate with the seasons. Because of intense development, waterways are now the primary link between habitats. Since Route 99 crosses every major river between Bakersfield and Stockton, as well as many seasonal streams, it is vital that improvements to Route 99 also maintain or re-establish these links. This can be done by restoring riparian (riverbank) vegetation, stabilizing stream banks, eliminating exotic plants, and restoring stream habitats for aquatic species and migrating birds. Wildlife crossings are another important tool for the recovery of Valley species.

Cultural Resources

Before western settlement of California, the Valley was primarily inhabited by Native Americans known as Yokuts. While agriculture and the damming of rivers have altered the landscape, archaeological remains of Yokut villages may still lie intact near Route 99.



More recently, Route 99 and the history of the San Joaquin Valley parallel the railroad tracks laid through the Valley in the 1870's. The railroad gave Valley farmers an efficient means to transport their goods to Los Angeles, San Francisco, and Sacramento. Cities such as Modesto and Fresno followed the arrival of the railroad, becoming the Valley's major population centers of the railroad era. Smaller towns also sprung up at railroad stops along the line. Today, signs of the area's history are apparent in the aging farmhouses and barns visible from Route 99. Even remnants of advertisements painted on barns during the early 1900's still exist to give us a glimpse into the past.

This historic landscape is threatened by development and advertising that may hide or even remove elements of the Valley's history. Preserving both archaeological and historic sites should be considered when planning any projects to improve Route 99.

Farmland

Fast-flowing water from the Sierra Nevada Mountains deposited mud, sand, and gravel when it reached the flatter lands of the San Joaquin Valley, providing some of the most productive soil in the world. This fertile soil, along with a long growing season and a complex irrigation system, yields a diversity of crops that include: fruits, nuts, berries, cotton, and vegetables. Cattle, poultry, and dairy products are also produced in significant quantity.

Federally funded projects affecting prime and unique farmland are generally subject to the provisions of the Farmland Protection Policy Act.

Air Quality, Water Quality, and Noise

The San Joaquin Valley Air Basin, which is approximately 250 miles long and averages 35 miles wide, is the second largest air basin in the State. It is defined by the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. The bowl shape of the San Joaquin Valley contributes to its air pollution problem.

The main pollutants of concern are carbon monoxide, nitrogen dioxide, ozone, and particulate matter that are 2.5 and 10 microns in diameter PM2.5 and PM10, respectively. If a project is located in an area that has exceeded State or federal standards for these pollutants, additional air quality analysis and reduction measures for that pollutant are required. This is most frequently done for carbon monoxide and particulate matter.

Potential impacts to water quality are associated with the discharge of pollutants in storm water runoff from the highway. Pollutants commonly associated with highways are litter, heavy metals, petroleum hydrocarbons, brake materials, oil and grease, sediment, suspended solids, and pesticides and herbicides. Water Quality Assessments identify potential impacts on surface water



and groundwater resources resulting from proposed projects and describe project design, procedures, and practices that would minimize these impacts.

Potential noise impacts from transportation projects are identified during the planning and design phase. A noise impact occurs when the projected noise levels, after a project is completed, result in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the projected noise level with the project approaches or exceeds the noise abatement criteria. If it is determined that the project would have noise impacts, then potential abatement measures, such as soundwalls, must be considered.



Chapter 3 Route 99 Projects

3.1 Long-Range Plans for Route 99

Route 99 has been the subject of many planning studies and documents. The most important of these completed to date include:

- The 1998 Interregional Transportation Strategic Plan
- Transportation Concept Reports for Route 99 (District 6 and District 10)
- 2005 Business Plan
- Proposition 1B Corridor System Management Plans in both District 6 and District 10.

According to the **1998 Interregional Transportation Strategic Plan (ITSP)**, the Route 99 vision for the year 2020 ranges from a 4- to 8-lane freeway. This vision applies from south of Bakersfield to the Route 99 junction with Route 70 in Sutter County. The Strategic Plan recognizes the important role of Route 99 and seeks to:

- Clear all remaining non - freeway gaps south of the Route 99/70 junction.
- Add freeway lane capacity to handle increased interregional travel demand for goods movement and major commute volumes. This represented the first coordinated multi-Caltrans District effort to work toward a 4- to 8-lane freeway for the entire length.

The **Transportation Concept Reports** for Route 99 in both Districts 6 and 10 support the ITSP objectives. The Transportation Concept Reports are long-range documents that establish a planning concept for the Route 99 corridor through the year 2030. They define the appropriate level of service (LOS) target, as well as facility roadway types needed to accomplish this target (i.e., 6- to 8-lane freeway).

In addition, there are proposed improvements to an 8-lane freeway in the urbanized areas of Bakersfield, Fresno, Modesto, and Stockton. The estimated cost to accomplish the 2030 Concept Facility throughout the corridor is about \$6 billion in 2005 dollars.

The **2005 Route 99 Business Plan** provided the first comprehensive corridor management document with consensus agreement between all eight MPOs and Caltrans Districts 6 and 10. It laid out all project improvements necessary to attain the primary corridor objective of a minimum 6-lane freeway for the entire corridor in the San Joaquin Valley. Project improvements were grouped into four priority categories in readiness for future funding. That future funding came shortly thereafter in 2006 with the voter approved \$19.9 billion Proposition 1B.



The best example of the value of the 2005 Business Plan is the fact that Route 99 received a direct allocation of \$1 billion from Proposition 1B

Another useful planning document, **Corridor System Management Plan (CSMP)**, was created as part of California Transportation Commission requirements placed as a pre-requisite for use of Proposition 1B funds. To assure that transportation benefits resulting from the investment of Proposition 1B funds are not lost over time a CSMP is required that covers both the Proposition 1B funded project segment and related adjoining segments. These CSMPs provide one unified concept for managing, operating, improving, and preserving this sub-corridor. They integrate all modes, management strategies, and improvements in concert with adjoining jurisdictions.

3.2 Projected Operations on Route 99

The Transportation Concept Reports described in the previous section indicate the appropriate level of service (LOS) target or Concept LOS, and roadway types for the route. LOS describes operating conditions on a roadway. Like a report card, the LOS is defined in categories ranging from A-F, with A representing the best traffic flow and F representing the worst congestion. As a general rule, the Concept LOS for Route 99 is D in urban areas and C in rural areas. LOS C or D are the targets because they provide the highest traffic throughput with the least traveler disruption.

Figure 3.1 shows the current (2007) LOS along the Route 99 corridor, which ranges from LOS B to LOS F. Current Annual Daily Traffic (ADT) volumes range from 38,000 to over 100,000, but are projected to be 84,000 to over 217,000 by 2030. Without any project improvements, the LOS would deteriorate to predominately LOS E or F by the year 2030. With the project improvements described in this Business Plan, which largely comprise the 2030 Concept Facility, some segments in the urbanized areas along the route will still be at LOS E or F, but most segments will be at LOS D or better. LOS F in the urbanized areas will typically result in speeds of 25 miles per hour or less during commute periods. Please refer to Figure 3.2 for the 2030 Concept Facility. Those segments where we cannot attain LOS better than E or F with highway improvements will have to depend upon other mode or parallel corridor enhancements to improve mainline LOS. The role of Corridor System Management Plans, previously mentioned, will be to help address these other opportunities.

Additional information for each project is listed in Appendix B of *Volume III: Updated Route 99 Business Plan - Appendices A, B, C, D, E*. Within Appendix B, Figures B.1 and B.2,



provides performance measure data for the Route 99 projects. This includes data on 5-axle trucks, peak hour and ADT volumes, level of service, and more.



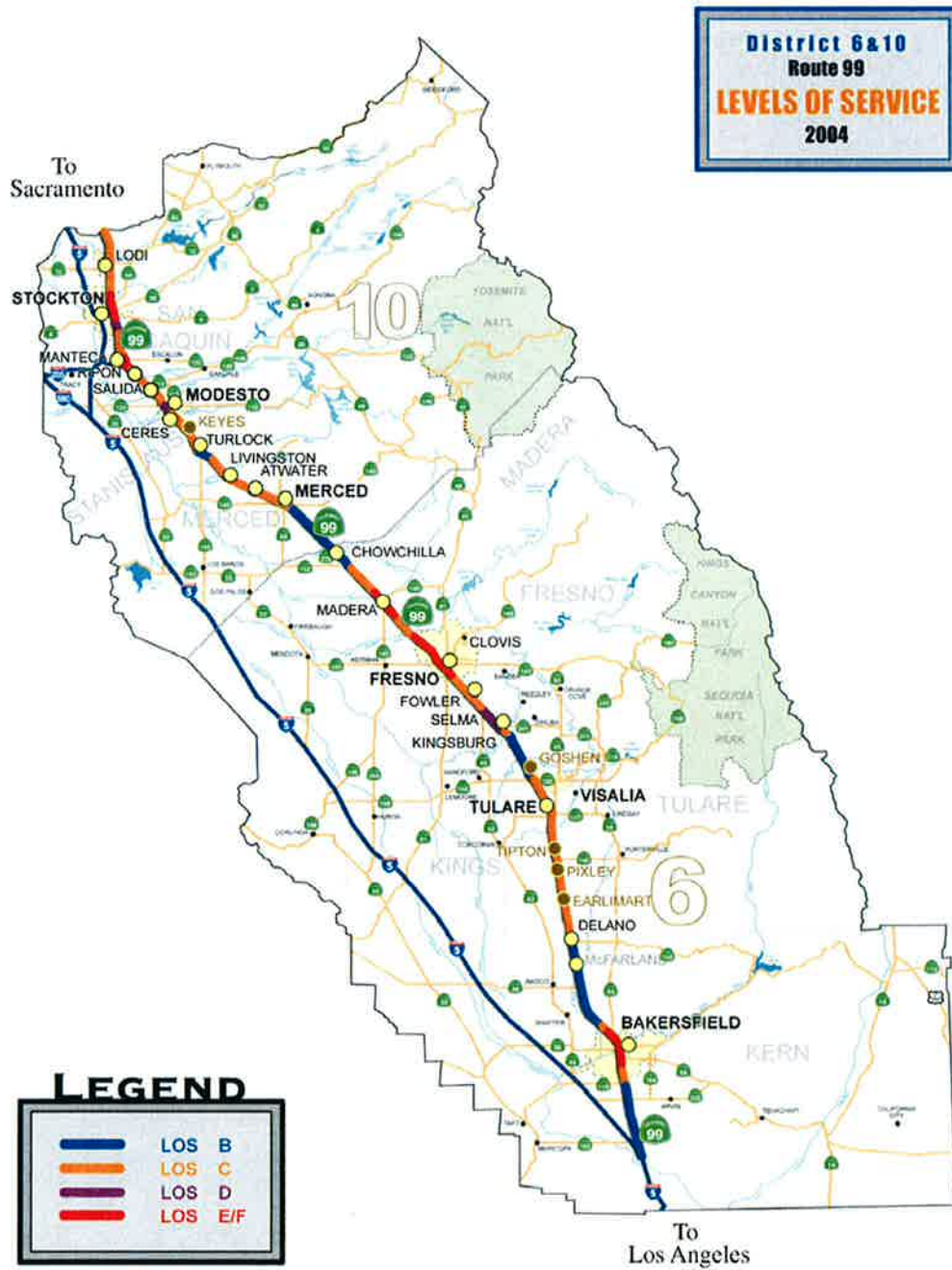


Figure 3.1 Current Route 99 Levels of Service

