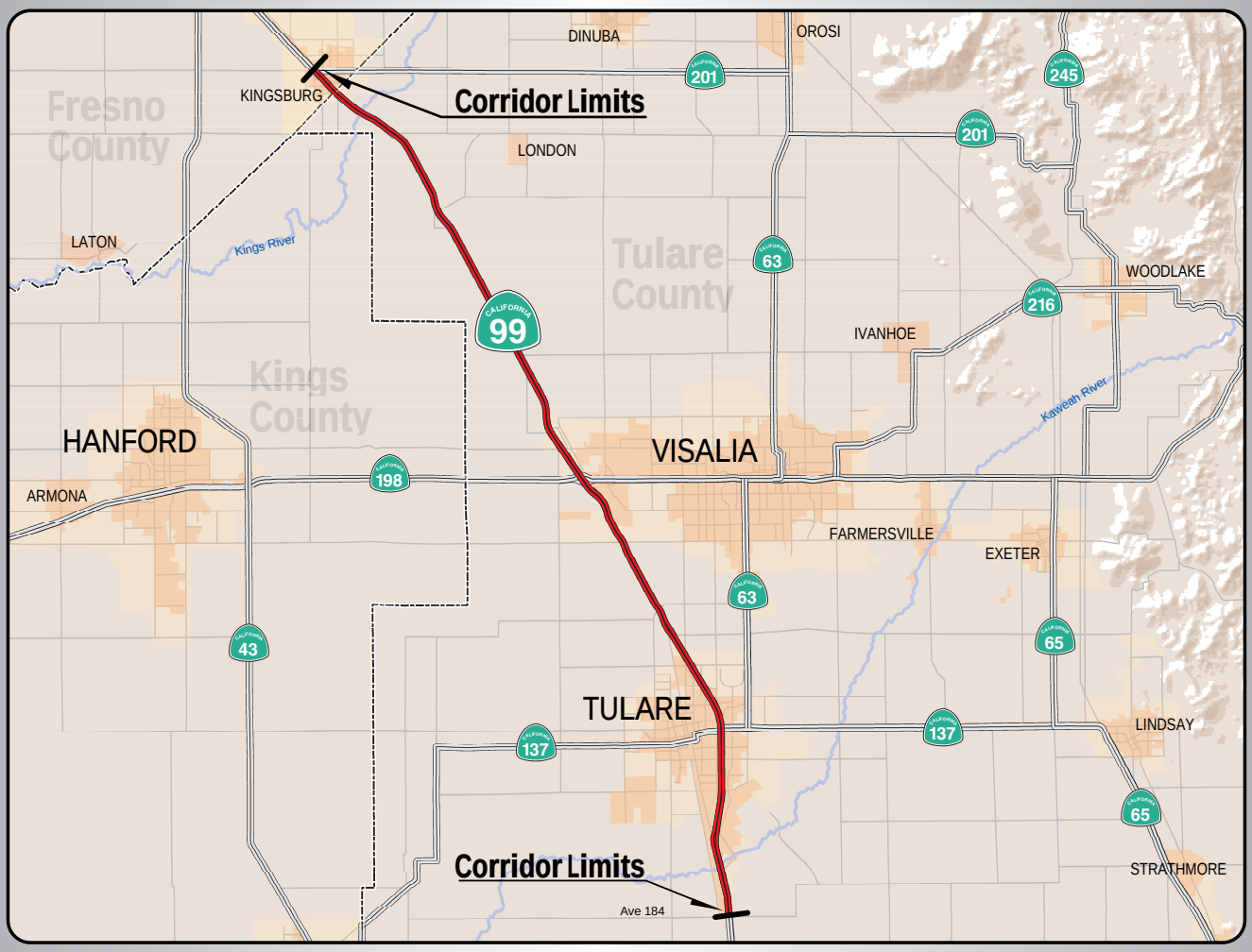
Route 99 Rural

Corridor System Management Plan

Tulare PM 99 23.3/53.9
Fresno PM 99 0.0/1.0



District 6 Central Planning
November 2008

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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TULARE TO FRESNO ROUTE 99 RURAL CORRIDOR SYSTEM MANAGEMENT PLAN

Route 99: Avenue 184 in City of Tulare to Route 201 in the City of Kingsburg
District 6 - TUL 99 - PM 23.32/53.94 to FRE 99 PM 0.0/1.0

I approve this Corridor System Management Plan as the overall Policy Statement and Strategic Plan that will guide transportation decisions and investments for the Route 99 Corridor.

Recommend Approval:

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Caltrans - District 6

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Corridor System Management Plan
State Route 99
November 2008

I. INTRODUCTION

A. Purpose and Need

The preparation of a Corridor System Management Plan (CSMP) is a California Transportation Commission (CTC) requirement for the use of "Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006" funds, approved by the voters as Proposition 1B on November 7, 2006. In requiring CSMPs for Proposition 1B funds, the CTC was expressing its expectation that Caltrans and regional agencies would preserve the mobility gains of urban corridor capacity improvements after those improvements were in place. Proposition 1B funds have been allocated for a project within the corridor encompassed by this CSMP. This project, the "Goshen to Kingsburg 6-Lane" Project, is described on Page 29 of this document.

A transportation corridor is not limited to the highway but encompasses all transportation components, taken as a whole, through a geographical area, on a major travel path. The corridor includes the highway, major local parallel arterials, local road intersections, ramps and ramp meters, signal controls, transit, rail, bikes, and pedestrians. The CSMP provides one unified concept for managing, operating, improving, and preserving the corridor across all modes and jurisdictions for the highest productivity, mobility, reliability, accessibility, safety, and preservation outcomes. The CSMP allows the State, regional agencies, and local jurisdictions to manage and operate the transportation corridor for the highest sustained productivity and reliability based on the assessment and evaluation of performance measures. The strategies for managing the corridor are phased and include both operational and more traditional long-range capital expansion strategies. This represents a shift from the traditional approach of identifying localized freeway problems and finding solutions that are often expensive and focused on capital improvements. The CSMP approach places greater emphasis on performance assessments and operational strategies that yield higher benefit-to-cost results. Management includes a commitment by all partners to apply the principles and practices of system and corridor management and the use of performance measures to provide for sustained corridor performance. The CSMP assesses current performance, identifies causal factors for congestion, and, based on testing of alternative corridor management and improvement scenarios, proposes the best mix of improvements, strategies, and actions to optimize corridor performance.

Implementation of this new approach to corridor management requires a commitment by Caltrans and the local transportation partners. The Tulare County Association of Governments (TCAG) and Caltrans District 6 have signed a Memorandum of Understanding (MOU), a copy of which is included in Appendix A, Pages 36 - 41. This MOU documents the commitment of all parties to manage the corridor through

applying the principles and practices of system and corridor management and performance measurement for sustained corridor performance. The completed CSMP also requires adoption by these same partners. The planned adoption date is the fall of 2008.

B. Route 99 Background

Route 99 began as a California State highway in 1909. It was originally designated as Legislative Route Number 4, linking Sacramento and Los Angeles, passing through Fresno and Bakersfield. In 1913-14, the route was first paved. In the 1920s, the road was designated as "U.S. 99." Some segments of U.S. 99 were widened to three lanes in the 1930's, the middle lane being reserved for passing and turning. U.S. 99 was eventually widened, segment by segment, and often on a new alignment, to a four-lane expressway during the 1930s, 1940s, and 1950s. The last three-lane section of U.S. 99 in the San Joaquin Valley was replaced with a four-lane expressway north of Fresno in 1960. Since then, most segments have been upgraded to freeway status. Many of the at-grade crossings have either been eliminated or replaced with interchanges.

Sections of the old U.S. 99 have been replaced by Interstate 5 (I-5). The current Route 99 begins at I-5, near the base of the Tehachapi Mountains in Kern County, passes through the counties of Tulare, Fresno, Madera, Merced, Stanislaus, San Joaquin, Sacramento, and Sutter counties, and ends at Route 36 near Red Bluff in Tehama County.

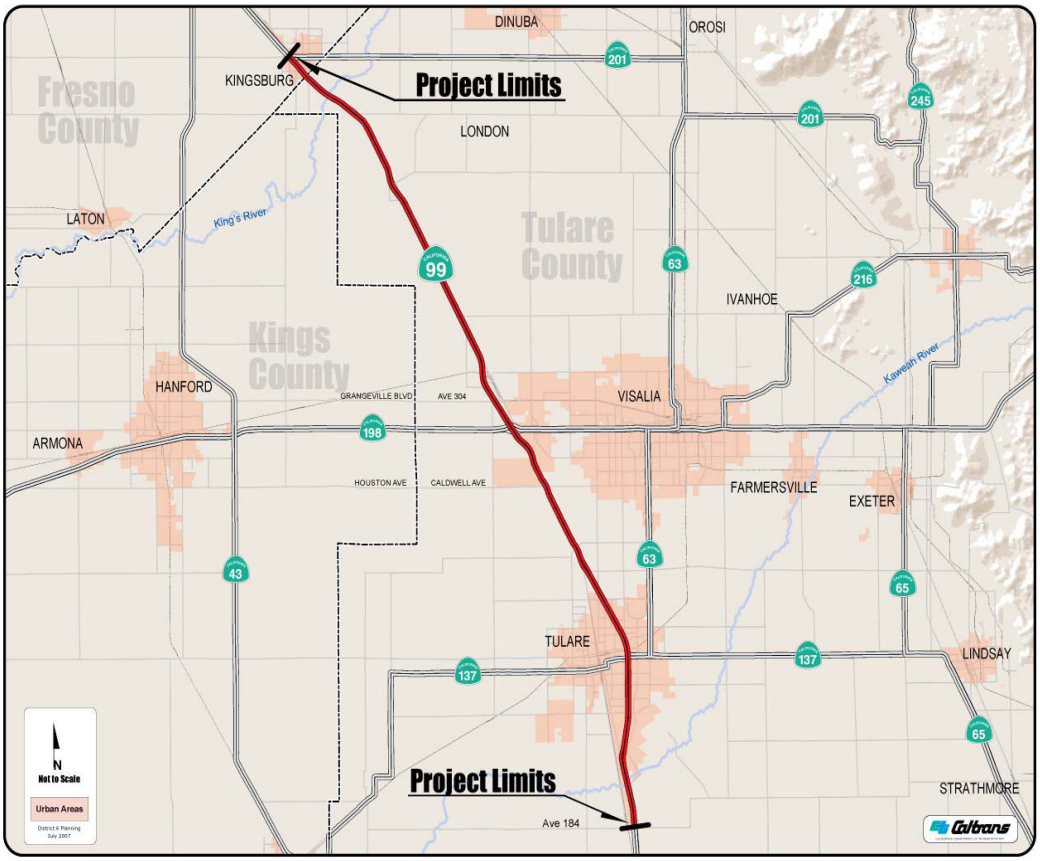
Route 99 serves the primary population centers in the San Joaquin Valley as well as much of the rural agricultural areas. It is the transportation backbone for the movement of agricultural products and other commercial goods, and also serves as a major link for recreation-bound traffic. Route 99 is the primary link that connects the San Joaquin Valley with the Sacramento metropolitan area and, via I-5, with the Los Angeles area. In its capacity as an interregional thoroughfare for the movement of people and goods, it is critical to the economic vitality of the State.

This CSMP identifies the recommended management strategies for the portion of the Route 99 transportation corridor extending from Avenue 184 in the City of Tulare (in Tulare County), to Route 201 in the City of Kingsburg (in Fresno County). Please see Map #1, Page 3. It identifies the transportation-related needs for this specific segment of the corridor for congestion relief, improved goods movement, and the promotion and enhancement of economic development. This CSMP will also help to determine the appropriate phasing for identified improvements, ensuring the most-needed projects are constructed first and that construction proceeds in a logical progression, maximizing the limited transportation funds available.

C. Corridor Team

The preparation and implementation of a CSMP requires coordination with local agencies, Tribal governments, and stakeholders. This coordination has been accomplished through the creation of a Project Development Team (PDT).

MAP #1
CSMP AREA



PDT Local Partner Members:

City of Kingsburg: Mayor Leland Bergstrom, Don Pauley; City of Tulare: Mark Kielty, Mike Miller, Darrel Pyle, Ken Ramage; City of Visalia: Andrew Benelli, Doug Damko, Michael Olmos; Council of Fresno County Goverrnments: Tony Boren; County of Tulare: Jean Brou, Britt Fussel, Henry Hash, Scott Cochran; San Joaquin Valley Unified Air Pollution Control District: Tom Jordan; Santa Rosa Tachi Tribe: Lalo Franco; Tulare County Association of Governments: Ben Giuliani, Ted Smalley.

2. PDT Caltrans Members:

Central Region Environmental: Phong Duong, Richard Putler, Sarah Gassner; Graphics: Jeff Fowler; Headquarters Division of Transportation Planning: Al Arana, Kelly Eagan; Maintenance and Traffic Operations: Joel Aguilar, David Arias, Jose DeAlba, David Garza; Diana Gomez, Albert Lee, John Liu, Duc Ken Ly, Bill Moses, Marco Sanchez, Rene Sanchez, Dan Singh, Planning: Amy Barnes, Mac Cavalli, Al

Dias, Sharri Ehlert, Marta Frausto, Paul Marquez, Steven McDonald, Lorena Mendibles, Hector Rangel, Vernie Ratnam, Sandra Scherr; Project Management: Phillip Sanchez, Bob Hull; San Joaquin Valley Coordination: Alan McCuen.

II. CORRIDOR DESCRIPTION

A. Corridor Limits:

This CSMP encompasses the City of Tulare and the agriculture-oriented activities such as dairy farms, poultry processing, grain processing, and farm equipment sales within Tulare County (TUL 99 - PM 23.3/53.94), and terminates in the City of Kingsburg (FRE 99 - PM 0.0/1.0) in Fresno County.

B. Corridor Width:

Route 99 between the Cities of Tulare and Kingsburg is currently a 4-lane facility for most of the CSMP area. A 6.9-mile segment between the North Goshen Overhead (OH) to 0.6 mile south of the Traver Overcrossing (OC) is 5-lanes, with three lanes northbound. The 2030 Concept for this segment of Route 99 is a 6-lane freeway, and the ultimate corridor concept is an 8-lane freeway (Table 1, Page 5).

C. Corridor Function:

1. Description of the Corridor

Route 99 is designated as a State High Emphasis Focus Route on the Interregional Road System (IRRS), recognized as a Transportation Gateway of Major Statewide Significance, and has been identified as a "Priority Global Gateway" for goods movement in the Global Gateways Development Program (January 2002). Under the Federal-aid Surface Transportation Program, Route 99 is part of the National Highway System as a STRAHNET (Strategic Highway Network) route, and is on the National Network for STAA trucks (large trucks). The route has also been identified as an Intermodal Corridor of Economic Significance (ICES).

Route 99 serves an essential connectivity function throughout the San Joaquin Valley. Urban areas tend to be widely separated from one another and Route 99 provides the major means of travel between many of these communities. It is a principal arterial serving interregional traffic, with relatively high traffic volumes and heavy use by both trucks and commuters. In addition, it provides for mobility of goods and services in a north-south direction through the San Joaquin Valley. The San Joaquin Valley is tied to primary agricultural production, and Route 99 serves as a "farm-to-market" transportation route. The highest priority projects for this corridor address areas of safety, connectivity, mobility, and goods movement.

TABLE 1

SUMMARY CHART

TULARE TO FRESNO ROUTE 99 RURAL CORRIDOR SYSTEM MANAGEMENT PLAN

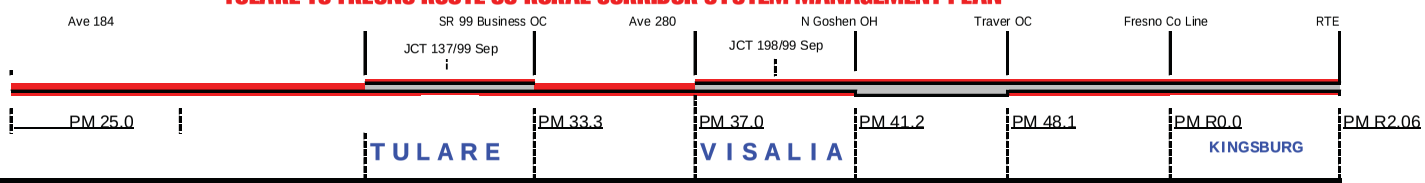
LEGEND

Planned or Programmed by 2030

Through Lanes: Expressway, Freeway

Auxiliary Lanes

Number of Lanes: 4, 6



SEGMENT	1	2	3	4	5	6	7	8
County / Route	TULARE / 99	TULARE / 99	TULARE / 99	TULARE / 99	TULARE / 99	TULARE / 99	TULARE / 99	FRESNO / 99
Description Begin	0.325 MI S OF AVE 184	BARDSLEY OC	PROSPERITY OC	0.1 MI N OF RTE 99 BUSINESS OC	0.6 MI N OF AVE 280	N GOSHEN OH	0.6 MI S OF TRAVER OC	FRESNO CO LINE
Description End	BARDSLEY OC	PROSPERITY OC	0.1 MI N OF RTE 99 BUSINESS OC	0.6 MI N OF AVE 280	N GOSHEN OH	0.6 MI S OF TRAVER OC	FRESNO CO LINE	BETHEL AVE OC
Postmile Limits Begin/End (PM)	23.0 / 28.6	28.6 / 30.6	30.6 / 33.3	33.3 / 37.0	37.0 / 41.2	41.2 / 48.1	48.1 / R53.9	R0.0 / R2.06
Length (MI)	5.6	2.6	2.7	3.7	4.2	6.9	5.8	2.1
Rural / Urban	Urban	Urban	Urban	Rural	Urban	Rural	Rural	Urban
Facility: Existing	4F	4F	4F	4F	4F	5F***	4F	4F
2030 Concept	6F + AUX	6F + AUX	6F + AUX	6F	6F	6F	6F	6F + AUX
UTC	8F	8F	8F	8F	8F	8F	8F	8F
LOS: 2005	C	D	D	D	D	D	D	D
LOS: 2020	D	D	D	D	D	D	D	D
LOS: 2030	E	F	F	F	E	E	E	E
LOS: Concept 2030	D	D	D	D	D	D	C	D
Deficiency/Year Deficient	2030	2030	2030	2030	2030	2030	2030	2030
Project in STIP/RTP (Y/N)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LOS W/ Concept Improvement	C	D	C	C	C	C	C	D
Directional Split* (Peak Hour)	52/48	52/48	52/48	53/47	51/49	52/48	52/48	52/48
AADT: 2005	46,000	53,000	53,000	54,000	54,000	52,000	51,000	55,000
AADT: 2020	72,726	83,793	83,793	85,374	78,192	75,296	73,848	79,640
AADT: 2030	96,600	111,300	111,300	113,400	97,200	93,600	91,800	99,000
Peak Hour: 2005	5,100	5,800	5,200	5,300	4,850	4,650	4,600	4,950
Peak Hour: 2020	8,063	9,170	8,221	8,379	7,023	6,733	6,661	7,168
Peak Hour: 2030	10,710	12,180	10,920	11,130	8,730	8,370	8,280	8,910
Truck %	28	28	28	28	28	28	28	27
Truck AADT 5+Axle: 2008	9,090	9,090	9,090	10,670	10,670	15,400	10,153	10,153
Truck AADT 5+Axle: 2020	12,970	12,970	12,970	15,230	15,230	20,130	12,880	14,920
Truck AADT 5+Axle: 2030	26,460	26,460	26,460	21,770	21,450	25,870	16,450	22,130

***Direction Split:** Denotes the split in the peak hour traffic flow on a directional basis (NB)/SB or WB/EB) in either the morning or evening

a) Interstate Status

In August 2005, legislation was enacted that designated the section of Route 99 from Bakersfield to Sacramento as a future interstate. The statutory language was contained in Section 1304 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Proponents believe that inclusion of Route 99 in the Interstate system will make the area more attractive to new employers, resulting in more and better jobs for the region and that funding for Route 99 will increase. While Interstate designation would allow Route 99 to be eligible for funding from additional programs, it would not increase the total federal transportation dollars to the State.

There is a significant cost associated with upgrading the route to Interstate standards, a condition of the change in designation, as high as $14 to $19 billion (2005/06 fiscal year dollars). In the City of Tulare, closure of local road interchanges due to non-standard spacing would require the construction of a local frontage road system to accommodate the change in local circulation. This would also represent a significant cost. The statutory language does not require meeting Interstate standards within any set time period, and waivers to these standards may be possible. An economic study to evaluate the benefits of Interstate designation is underway.

2. Population Characteristics

Communities in California and the San Joaquin Valley are growing rapidly, and Tulare and Fresno Counties are no exception. The anticipated growth necessitates a new approach to managing the corridor. In 2005, Tulare County had a population of 390,950, with the City of Tulare's population at 51,196, the City of Visalia at 107,802, and the City of Porterville at 44,496. Tulare County's population is expected to reach 635,706 by the year 2030, with much of this increase being accommodated by the Cities of Visalia (182,073), Porterville (89,950) and Tulare (74,891). The population increases in the Cities of Tulare and Visalia will impact the Route 99 corridor in Tulare County. In addition, Fresno County to the north is projected to have a population of 1,429,228 and Kern County to the south a population of 1,352,627 by the year 2030. The trend toward increases in population is anticipated to continue throughout the foreseeable future. Increases in population are due in large part to the availability of land, the proximity of the urban centers in neighboring growth areas to the north, south, east and west, and the relatively low cost of land in the San Joaquin Valley.

3. Goods Movement

Various modes are used in California to move goods, including seaports, airports, railways, dedicated truck lanes, logistics centers, and border crossings. The California economy relies heavily on the efficient and safe delivery of goods to and from our ports and borders, as well as distribution within the State. This includes the

movement of raw materials to manufacturing and processing plants, as well as the movement of finished products to market.

The San Joaquin Valley region is one of the four major international trade regions in California, designated in the 2002 Global Gateways Development Program. The San Joaquin Valley Goods Movement Study, prepared for Caltrans and the eight counties of the San Joaquin Valley (Kern, Fresno, Tulare, Kings, Madera, San Joaquin, Stanislaus, and Merced), determined that trucking is the dominant mode for moving freight (see truck percentages, Table 1, Page 5). Rail only accounted for approximately 11% of the total tonnage. The increase in freight movement by trucks on State highways is growing faster than can be accommodated by the existing capacity. Route 99 truck traffic constitutes up to 30% of the AADT in some sections, compared with the State average of only 9%.

Goods Movement is critical to the economy and represents an increasingly important employment sector for Californians. It is vital to our quality of life and to our economy to improve the essential infrastructure needed to enhance the transport of goods. Improving the goods movement infrastructure, and thereby providing alternatives to the reliance on trucking, will also aid in relieving congestion on freeways and will increase mobility for everyone in California.

4. Alternative Modes of Transportation

a) Freight Rail

The Union Pacific Railroad (UP) runs north-to-south along the eastern side of Route 99 from Route 201 in Fresno County to Route 198 in Tulare County. Then Route 99 jogs to the east of Route 99, with the railroad then running parallel through the remainder of this CSMP corridor.

The use of rail for goods movement is growing as the number of small rail operators improves efficiency and supply. The San Joaquin Valley Railroad (SJVR) is one rail operator that serves short-line rail transport needs of the region. SJVR carries a diversified range of goods including citrus, recycled glass, fertilizer, paper products, lumber, and many other products. This service benefits the region by reducing congestion, helping to reduce air pollution and making safe, efficient use of transportation corridors.

b) Passenger Rail

In most states, inter-city passenger train service is provided solely by Amtrak, with no assistance of any sort from state or local governments. California, through Caltrans, is one state that has been assisting Amtrak in order to allow Amtrak to provide more than just the basic service. Capital grants and support for station and track improvements (including signaling), locomotives and cars, and connecting Amtrak bus service have been provided. The *Pacific Surfliner*, *San Joaquins*, and *Capitol Corridor* Amtrak lines are funded primarily by the State of

California, with Amtrak and Caltrans operating as partners, helping to reduce ticket fares. These trains operate in addition to Amtrak's own interstate trains: the *Coast Starlight,* the *California Zephyr*, the *Southwest Chief*, and the *Sunset Limited.* These lines provide a passenger rail connection for California to the rest of the country.

Amtrak provides accessible Thruway Motorcoach (bus) service on some routes. Portions of the trip may be by bus, depending on the line. Amtrak Motorcoaches also extend Amtrak's services, providing connectivity to other areas not served by passenger rail. When disruptions to train service occur, arrangements may be made to provide an alternative via motorcoach or other means of transportation.

Amtrak service runs on the Burlington Northern Santa Fe (BNSF) rail line. The only access that Tulare County has to inter-city passenger rail service is through the Amtrak bus connecting the Visalia Transit Center to the Hanford Amtrak Station. The Amtrak line known as the "San Joaquins" runs north-south, linking Bakersfield and the Bay Area with stops in the Valley including Corcoran, Hanford, Fresno, Stockton and Sacramento. The San Joaquins operate six times daily. At the present time, four daily round trips operate between the Bay Area and Bakersfield, and two round trips operate directly between Sacramento (no bus to Stockton) and Bakersfield. Some portions of the trip may be by Amtrak Motorcoach. Ridership for fiscal year 2003 – 2004 was 750,000. The most recent figures indicate that the 2007 numbers have increased to nearly 805,000. The addition of trains to the existing San Joaquins line will be considered as demand warrants.

The UP line does not currently carry passenger rail service. Expansion of Amtrak passenger rail service to the UP line is being considered. This would allow the passenger line to serve more population centers and could benefit traffic on Route 99. However, in the Kingsburg area at the overcrossing at Mendocino Avenue and Route 99, there are safety problems and blockage for a second main track.

In November 2006, Proposition 1B, the "Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006" was passed by voters and will provide up to $400 million dollars in new funds to expand passenger services. These funds are to provide all passenger and freight services the ability to operate more efficiently by improving capacities, sidings, and track signals.

c) High-Speed Rail

The California High Speed Rail Authority (HSRA) has developed a plan to build a high-speed rail line, capable of reaching speeds of 220 miles per hour, that would service the major metropolitan centers of California. The rail line would eventually run from San Diego to as far north as Sacramento, with several proposed stations in the San Joaquin Valley. It is projected that 32 million inter-city passengers and another 10 million commuters would use the system per year. Traveling through Kings and Tulare Counties, the HSRA is considering two

alternative routes. The UP rail line/Route 99 traveling through Tulare and Visalia is one route, and the BNSF rail line traveling through Hanford (Kings County) is the other route. Both routes would tie into the Fresno Station (Fresno County). Potential station sites within the San Joaquin Valley include areas near the Route 43/198 separation and the Route 99/198 separation. It is anticipated that the high-speed route through the fast-growing San Joaquin Valley would produce the highest ridership and revenue. However, its impact on traffic on Route 99 will not be known until some time in the future. A bond measure to fund at least a portion of the High-Speed Rail will be on the November 2008 ballot. Total cost of the high-speed rail is estimated to be $40 billion. The bond measure will authorize $9.95 billion in spending for high-speed rail improvements and other rail services. With passage of the bond, construction could begin as early as 2011.

d) Transit

Currently, Greyhound operates service 7 days a week, seven times a day round trip between the City of Tulare and northbound locations along the Route 99 corridor. Orange Belt Stages provides transportation to communities throughout the San Joaquin Valley and the State, and to Las Vegas, Nevada. Orange Belt operates seven days a week, 365 days a year. One of the three bus depots in Tulare County is the Greyhound Goshen Depot, in the community of Goshen. Some of the buses are ADA equipped.

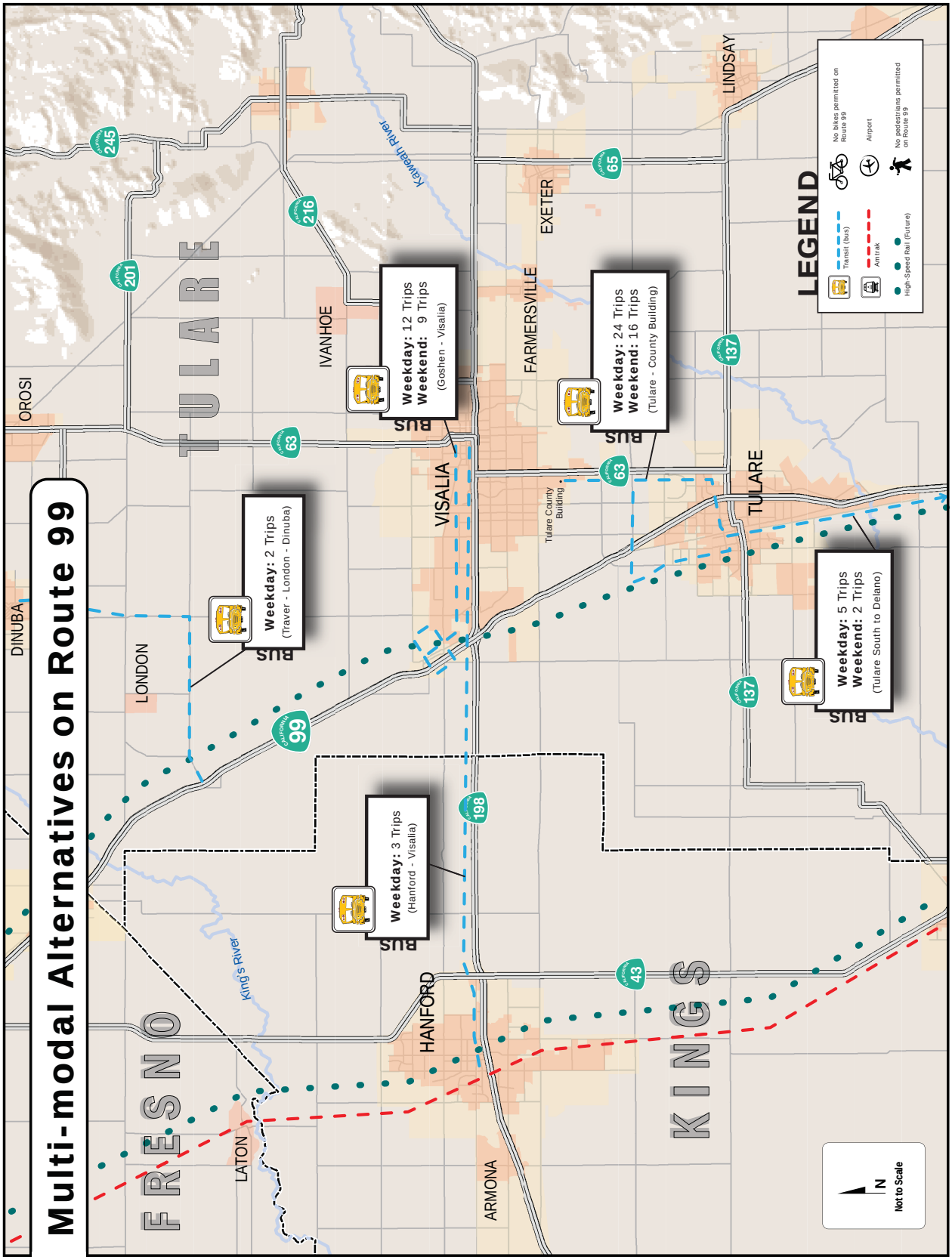
At the local level, there is no continuous bus service that extends along the entire length of the CSMP corridor. However, there is bus service provided by Tulare County and the Cities of Visalia and Tulare on portions of the Route 99 Corridor (see Map #2, Multi-modal Alternatives, Page 10).

The Tulare County Area Transit (TCaT) provides public transit service between cities and in-city transit services for many small communities throughout Tulare County. Fixed route and demand-response Dial-A-Ride services are offered Monday through Friday. Tulare County has yet to receive a request for service from the City of Tulare northward through the communities of Goshen and Traver and into the City of Kingsburg. The community of Goshen has a population of approximately 2,400 and the community of Traver approximately 730 people. The distance between the City of Tulare and Kingsburg is about 35 miles.

Within the CSMP study area, the only direct service to Route 99 is between Traver and the City of Dinuba. There are two round trips between Traver, London, and the City of Dinuba. Just south of the study boundary, the TCaT provides five roundtrips on the weekdays and two on weekends along Route 99 from the City of Tulare Transit Center to the City of Delano in Kern County.

Visalia City Coach (VCC) provides 12 roundtrips on weekdays and 9 on weekends from the City of Visalia to the community of Goshen along Route 99 and Route 198.

MAP #2


Multi-modal Alternatives on Route 99
FRESNO
TULARE
KINGS
DINUBA
OROSI
LONDON
LATON
HANFORD
ARMONA
VISALIA
IVANHOE
FARMERSVILLE
EXETER
TULARE
LINDSAY
Kaweah River
King's River
Tulare County Building
99
245
201
216
63
65
137
43
198
BUS
Weekday: 2 Trips
(Traver - London - Dinuba)
Weekday: 3 Trips
(Hanford - Visalia)
Weekday: 12 Trips
Weekend: 9 Trips
(Goshen - Visalia)
Weekday: 24 Trips
Weekend: 16 Trips
(Tulare - County Building)
Weekday: 5 Trips
Weekend: 2 Trips
(Tulare South to Delano)
LEGEND
Transit (bus)
Amtrak
High-Speed Rail (Future)
No bikes permitted on Route 99
Airport
No pedestrians permitted on Route 99
N
Not to Scale

Tulare Transit Express (TTE) provides bus service within the City of Tulare. This includes a route between the City of Tulare to the Tulare County Government Plaza Building in the City of Visalia, with 24 weekday roundtrips and 16 weekend roundtrips. There are free transfers every one-half hour between TTE and VCC systems at the Government Plaza building.

The Fresno County Regional Transit Agency (FCRTA) offers both fixed route and demand responsive services to the rural areas of Fresno County, beyond the Fresno-Clovis Metropolitan Area, including the thirteen rural incorporated Cities of Coalinga, Firebaugh, Fowler, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, Sanger, San Joaquin, and Selma. There is limited service to neighboring counties including: Granville, Hardwick, and Hanford in Kings County; Dinuba in Tulare County; Madera and Children's Hospital - Central Valley in Madera County; and Dos Palos in Merced County.

i. Transit Studies

The Merced County Association of Governments, MCAG, is the administrative lead for the "San Joaquin Valley Express Transit Study." The study is under the guidance of the San Joaquin Policy Council, with the San Joaquin Unified Air Pollution Control District (SJUAPCD) and Caltrans as partners. The eight counties of the San Joaquin Valley (San Joaquin,

Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern) currently do not have transit services or a transit operator that focuses on providing commuter service inter-regionally or to neighboring regions. The lack of these services leaves commuters with no alternative other than the automobile. The study's purpose is to identify markets that can support inter-county transit service within the San Joaquin Valley region, and between this region and its neighbors. A new transit services operating plan will be prepared and an institutional and financial structure defined for the new service.

e) Bicycles

Bicycles are normally permitted on all conventional state highways and many state expressways and freeways. However, due to controlled access that occurs along all portions of this highway within Tulare and Fresno counties, neither bicycles nor pedestrians are permitted.

Within Fresno County, the Golden State Corridor will have completed bicycle lanes from Kingsburg northward to the City of Fowler in 2009.

f) Aviation

Within this Route 99 CSMP area, there are two general aviation airports. The Visalia Municipal Airport is located at the southeast quadrant of the Route 99 and

Route 198 Interchange. The Visalia Municipal Airport provides one commercial carrier, and services include charters, fixed base operations, avionics, package distribution, and general avionics. In addition, this airport is accessible by transit on the Visalia City Coach and Visalia Dial-A-Ride. Mefford Field in the City of Tulare is located at the northeast quadrant of Route 99 and Avenue 200. Mefford Field serves general aviation and five fixed base operators including avionics, crop-dusting charters, and flight lessons. Mefford Field is within the Dial-A-Ride Tulare service area. Ground access to these airports is currently by automobile. The volume of commodity movement by air in Tulare County is insignificant compared to trucks or trains.

D. Corridor Inventory:

1. Traffic Volumes and Type

Current AADT, Level of Service, % Trucks, Peak-Hour AADT, 10 and 20-year AADT forecasts, by segment of the Route 99 Corridor, are in Table 1, Page 5.

The high rate of growth in the San Joaquin Valley is quickly using and exceeding the capacity of the Route 99 corridor. In the next 20 years, Goods Movement is expected to increase, creating even greater pressure on this primary north-south route. The existing facility does not have the capacity to accommodate the growth in population or the increase in goods movement. To maintain the corridor's ability to support ongoing development, facilitate efficient goods movement, and improve the quality of life, a substantial investment is needed to maintain and improve the corridor. Creative solutions to deal with this impact will be needed, solutions beyond simply increasing capacity. This CSMP is the first step in this process.

Route 99, as a regional facility, is impacted by special events, especially the Tulare Farm Show/World Ag Expo. Other events that may have an impact on this segment of Route 99 include:

- Buck Owens' Crystal Palace in Bakersfield, and
- "El Protector" events (CHP sponsored).

While many of these events require the use of another State facility, or even local roads, Route 99 is the major north-south route, and would be used by many people coming from out of the area. Such events require coordination with the CHP and the Traffic Management Center to keep traffic flowing and reduce both delay and accidents.

2. Geometrics

Route 99 is a 4-lane freeway from the southern termini of this CSMP area, Avenue 184 in the City of Tulare, to the North Goshen Overhead (OH). From this point, the 6.9-mile segment between the North Goshen OH to 0.6 mile south of the Traver Overcrossing (OC) is a 5-lane freeway (3 lanes northbound and 2 lanes southbound).

Then from this point to the end of the CSMP corridor at Route 201 in the City of Kingsburg (Fresno County), Route 99 is a 4-lane freeway. The width of the median ranges from 34 to 46 feet, the width of the paved shoulders varies from 2 to 16 feet, and the lane width is 12 feet.

The corridor includes freeway-to-freeway connections at Routes 137, 198 and 201. Many of the ramps and bridges do not meet current freeway standards.

The UP railroad tracks parallel Route 99 on the east side between Route 201 in the City of Kingsburg (Fresno County) to the Visalia Municipal Airport (Tulare County), just south of Route 198 (PM 39.3). Route 99 jogs to the east, then remains parallel to the railroad. Currently, the width of most of the State Highway right-of-way is approximately 250 feet. Due to the proximity of Route 99 to the UP Railroad, there could be constraints to expanding the facility, including the interchanges. There could also be obstacles encountered if there is a need to widen the river crossing along the Kings River.

The ultimate corridor concept for this segment of Route 99 is a continuous 8-Lane Freeway (Table 1, Page 5). Identification of the Ultimate Transportation Corridor (UTC) and subsequent preservation of the right-of-way will ensure adequate right-of-way (ROW) will be available to accommodate facility improvement projects beyond 2030. This will also ensure that facility improvement projects can be implemented with a minimum cost to taxpayers and minimal impact to the community.

Extensive development has occurred that will impact expansion of the freeway as developed land increases both the cost of ROW acquisition and the impact on those businesses and residences that must be relocated. Caltrans and local agencies should work together to establish conceptual plan lines and interchange "footprints," and to have these plan lines adopted into the local agencies' General Plan circulation element so that local agencies can use their land-use authority to preserve the necessary ROW for the corridor. This will also accelerate the necessary environmental clearances, and reduces the costs associated with ROW acquisition when freeway expansion occurs. This approach has been implemented within the City of Tulare, which has included the conceptual plan lines in the update of their Circulation Element.

3. Characteristics

a) Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS) consists of the electronics, communications, or information technology processing that communicates information to the traveler, improving safety and efficiency. ITS elements include detection, traffic control, incident management, advanced traveler information systems, and transportation management centers. ITS can take the form of traffic signals, closed-circuit televisions, changeable message signs, ramp meters, weigh-in-motion devices, roadway service patrols, weather stations, and

highway advisory radio stations. Also included is the centralization of controls for many of these components at traffic or transit management centers. Traveler information broadcast systems, traffic signal priority for emergency or transit vehicles, ITS data archive management, and vehicle safety warning systems are all a part of ITS. These elements are further explained in detail in Appendix B, Pages 42 - 45.

Transmitting ITS data requires an integrated fiber optic network planned along Route 99 and other corridors in the urbanized area. With such a fiber optic network in place, the Caltrans Central Valley Traffic Management Center (TMC) at the District Office in Fresno would be able to relay this data, monitor conditions and provide for rapid response when conditions deteriorate.

Deployment of ITS technology will enhance traveler information services, as well as the operational and safety efficiency of the Route by informing motorists of traffic congestion, inclement weather such as fog, dust, highway construction and/or closings. System monitoring and evaluation are the foundations for sound management of the corridor. Monitoring and evaluation will help to identify the optimum strategies to improve the transportation corridor. Strategies range from maintenance and preservation to system expansion, but will focus on optimization of the existing system by fully incorporating operational strategies into the management plan. Implementation of ITS strategies will complement other improvements, including those improvements that may be implemented by our partner agencies such as transit, light rail, and improvements on the local road system. The goal is that the transportation system, as a whole, including highways, local roads, and alternative modes of transportation, operate as one seamless network.

Currently, there are no ITS elements within the boundaries of this CSMP. The Prop 1B project, the Goshen to Kingsburg 6-Lane, within the limits of this CSMP includes adding a number of ITS elements. These are presented in Table 2, Page 15. Additionally, there are a number of planned ITS projects, including traffic monitoring stations, changeable message signs, highway advisory radios and remote weather information systems planned for this section of Route 99 (See Map #3, Page 16, and Table 5, Page 30, Ten-Year Improvement Program).

b) Parallel Roadways

The corridor within this CSMP includes a number of local roads that may function as parallel roadways to Route 99. Please see Map #4, Page 17, for the location of these potential parallel roadways.

The State highway functions primarily to move interregional traffic between regions. For example, Route 99 moves traffic in a north-south direction through the San Joaquin Valley. State highways also provide access to population centers for employment and distribution of goods to local markets. The local and regional road system (including arterial and collector roads) functions to move

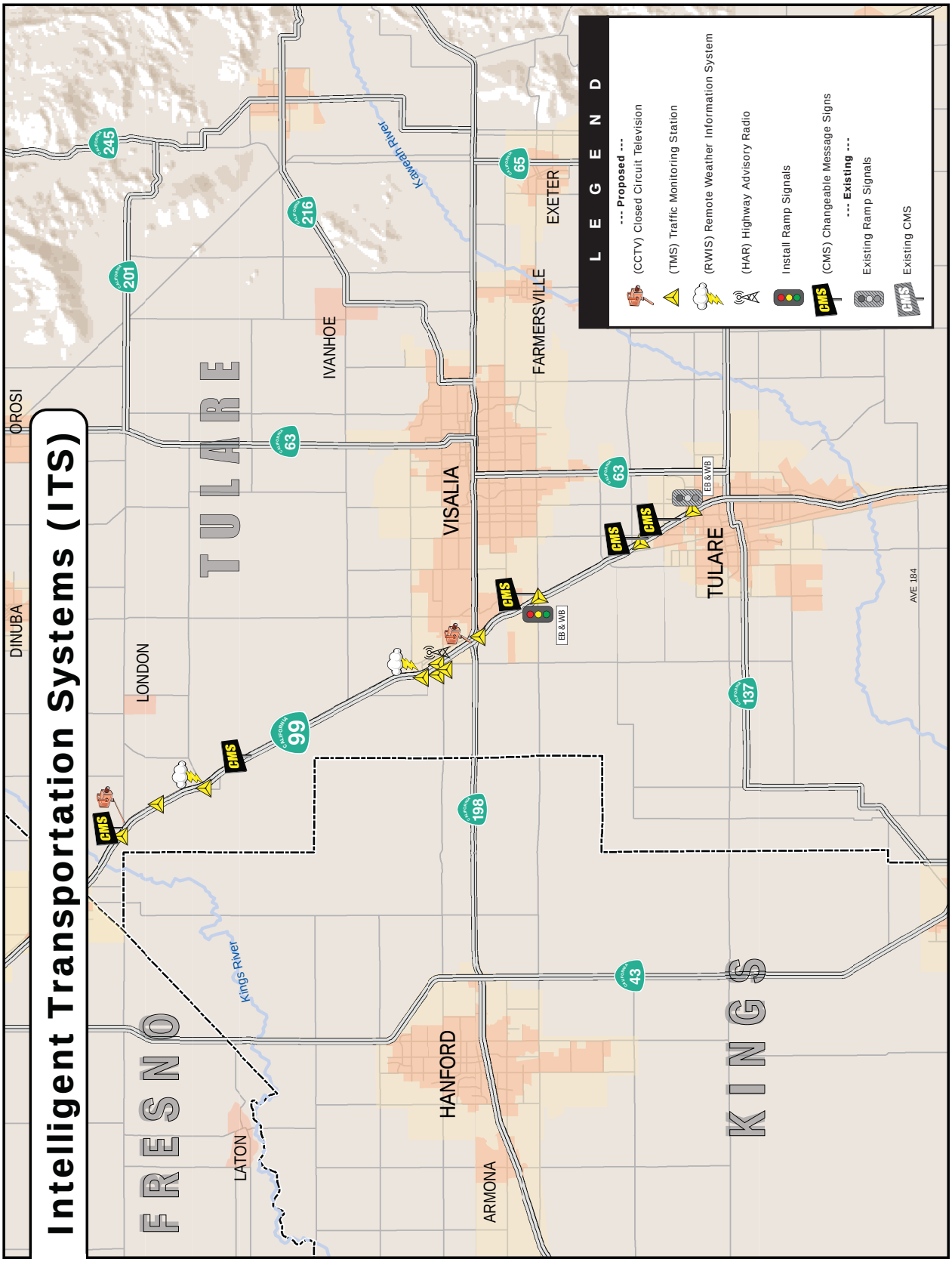
people and goods between neighboring communities or within a community. To insure a seamless transportation system, it is important to assess the entire transportation system, how traffic moves and how it transitions from origin to destination. The local parallel road to a State highway is an essential component of the transportation network. With growth in population and traffic, it is inherent that traffic would increase. The increase in traffic along with occasional traffic incidents would slow traffic on the existing State highway. This, in turn, causes the need for alternative routes to move people and goods through the communities and the region.

TABLE 2
ITS ELEMENTS INCLUDED WITH THE GOSHEN TO KINGSBURG 6-LANE PROPOSITION 1B PROJECT

TUL 99	LOCATION	ITS ELEMENT	2008 EST. COST
PM 42.3	South of Ave 328 OC	TMS	$30,000
PM 42.3	South of Ave 328 OC	RWIS	$60,000
PM 46.9	South of NB off to Traver	CMS	$60,000
PM 48.6	South of Traver OC	TMS	$30,000
PM 48.7	Traver OC	RWIS	$60,000
PM 48.7	Traver OC	CCTV	$45,000
PM 49.0	South of Traver Canal	TMS	$30,000
PM 50.3	South of NB off to Dodge	TMS	$30,000
PM 51.4	South of NB off to Dodge	CMS	$60,000
PM 51.8	Dodge OC	CCTV	$45,000
PM 51.8	Dodge OC	TMS	$30,000
PM 52.4	South of Kings River Bridge	TMS	$30,000
PM 52.6	South of Kings River Bridge\	RWIS	$60,000
FRE 99			
PM 0.0	Fresno County Line	TMS	$30,000
PM 0.9	Route 201	TMS	$30,000

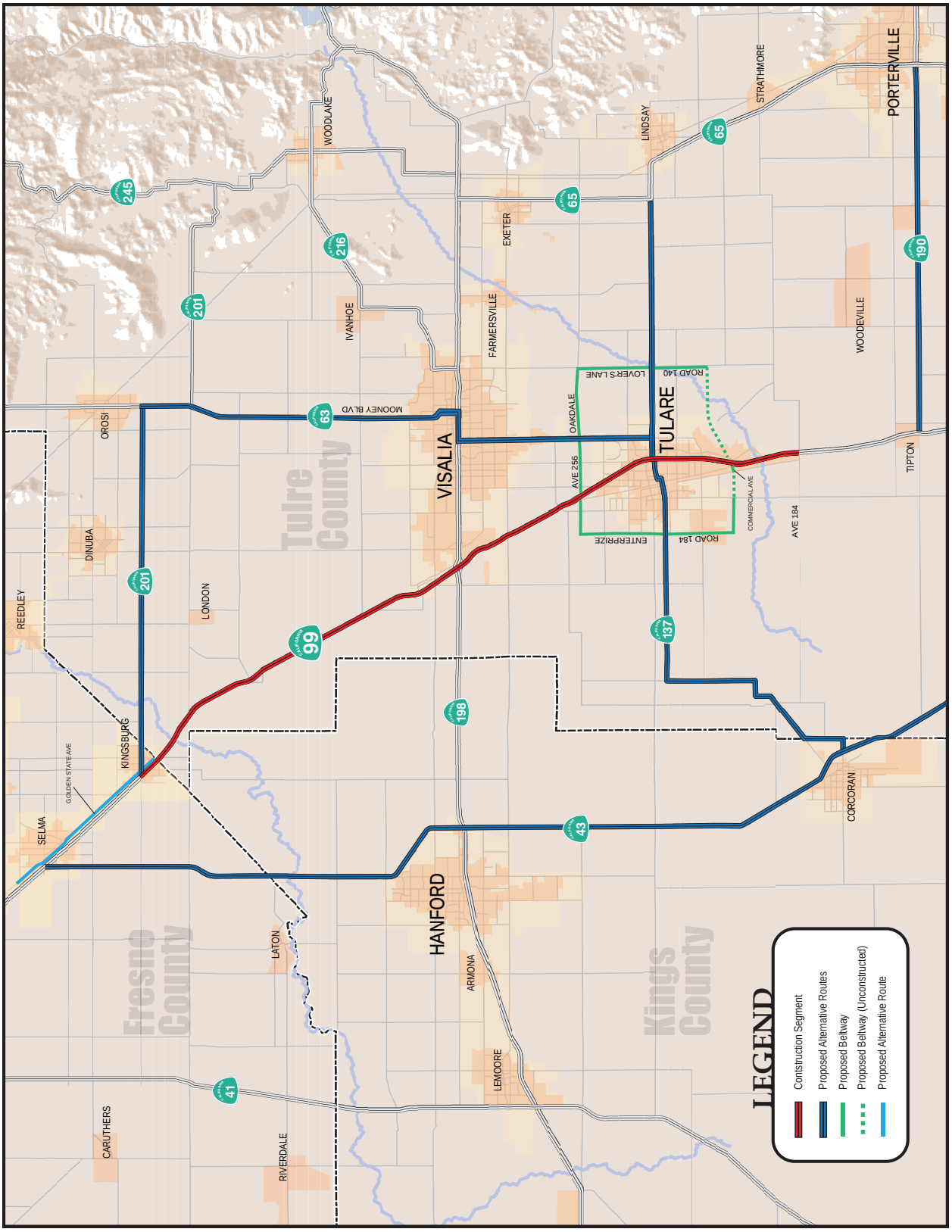
The local and regional agencies helped Caltrans identify potential local parallel roads. Major local parallel roads should be readily accessible to travelers (including bicyclists) and provide alternative routes during times of congestion and other traffic incidents. The CSMP is not intended to impose new requirements for the cities and counties to collect data or make road improvements. The local jurisdictions or the regional planning agencies are already collecting traffic information on the local roads when developing the Regional Transportation Plans, the regional transportation improvement programs, and the circulation elements of local general plans.

MAP #3


Intelligent Transportation Systems (ITS)
LEGEND
--- Proposed ---
(CCTV) Closed Circuit Television
(TMS) Traffic Monitoring Station
(RWIS) Remote Weather Information System
(HAR) Highway Advisory Radio
Install Ramp Signals
(CMS) Changeable Message Signs
--- Existing ---
Existing Ramp Signals
Existing CMS
FRESNO
TULARE
KINGS
DINUBA
OROSI
LONDON
IVANHOE
VISALIA
FARMERSVILLE
EXETER
TULARE
HANFORD
ARMONA
LATON
Kaweah River
Kings River
AVE 184
EB & WB
EB & WB
CMS
CMS
CMS
CMS
CMS
99
245
201
216
63
63
65
198
43
137

MAP #4

Potential Parallel Roadways



i. Recommendations

In the working group meeting with local and regional transportation planning agency staff for the Tulare County area, it was pointed out that there were no major local parallel roads that run along Route 99 for a substantial length of the corridor. However, there may be road segments within the City of Tulare that could function for incident management should there be delays due to traffic incidents. It was determined that J Street/K Street between Avenue 200 in the south and the vicinity of Avenue 256 in the north is currently the only acceptable local parallel road to Route 99 within the city limits of Tulare (see Map #4, Page 17). This segment of road is approximately 7 miles in length. Although J Street/K Street is constructed to a higher standard than a local road, it has limitations as the road ties back into Route 99. It should be noted that there have been discussions regarding potential future modifications to the J Street/Route 99 ramps. Mooney Boulevard (Route 63) could also serve as a north-south detour for Route 99 in this vicinity.

ii. Future Considerations

The City of Tulare is considering potential alignments for a proposed beltway around the City. Currently, they are considering an alignment that would include Enterprise Street along the west, Avenue 256 along the north, Road 140 on the east, and Commercial Avenue on the south. The proposed beltway would eventually be designed to tie into the City of Visalia's loop road system along Road 140/Lovers Lane or Ben Maddox Way.

Enterprise Street along the western boundary of the City of Tulare from Avenue 264 (Tagus Ranch area) on the north to the city's southern boundary could be considered a viable local parallel roadway in the future. However, Enterprise Street would need to be extended northerly and southerly to tie into the northern and southern boundaries of the future beltway. Although the City of Tulare's future beltway system is still in the discussion stages, it is essential for the City of Visalia, Tulare County, TCAG and Caltrans to all be involved as decisions are made to insure the development and maintenance of a seamless transportation system.

The City of Kingsburg has suggested a north-south alternate route for Route 99. The City has suggested that Simpson Street, part of the "Golden State Corridor," beginning (northbound) at the Mendocino Avenue Overcrossing (OC) at the city's southern limit where Fresno County meets Tulare County would be appropriate. The roadway has two lanes north (into the City of Kingsburg) and two lanes south, and follows the Union Pacific tracks northward to the cities of Selma and Fowler. The roadway is in drivable condition with adequate lane widths and shoulders the entire distance. The northbound lanes were the original Highway 99. The southbound lanes were added at the time Highway 99 was moved to the west, prior to its upgrade to

freeway status. The City believes that this local parallel road could meet the monitoring requirements for the CSMP.

The roads identified above would serve as parallel roadways primarily in cases of occasional congestion and for incident management. Shoulder width would be of concern in using a local road as a parallel route to the freeway on a regular basis. The width of local arterial roads should be adequate to accommodate a four-lane road with a median for dual left-turn lanes, shoulders, and bicycle lanes/routes. In addition, there may be inadequate right-of-way for the local arterial roads as they transition to the State highway facility.

c) Parallel State Highways

If there were a major incident and closure of a large section of the Route becomes necessary, available detours outside the immediate corridor area exists. Possible north-south detours include Route 43 to the west and Route 63 (Mooney Boulevard) to the east. The east-west connectors from north to south include Routes 201, 198, 137 and 190 (not a State highway east of Route 99). East – west connectors are essential to maximize the use of all of the above-mentioned parallel roadways.

Changeable message signs and/or CHP cars could direct the traveling public and trucks to the appropriate detour.

5. Alternative Transportation Considerations

Through grants from the California Partnership for the San Joaquin Valley and the Caltrans Transportation Planning Grants program, the five counties area of Fresno, Madera, Kings, and Tulare are studying a 2110 Metro Rural Loop concept. As part of the San Joaquin Valley Regional Blueprint, the form of the region envisions a system of high capacity multi-modal transportation corridors that interconnect the metro area with rural areas and the state. The Metro Rural Loop concept would be a regional development approach that envisions a multi-modal, multi-city and multi-county transit-oriented transportation corridor system that would directly link the development of cities and counties. The Metro Rural Loop project would include representatives from local, regional and state jurisdictions, business, agriculture, environmental, and civic organizations in the region.

Caltrans will be participating in the discussions with the local and regional agencies on a proposed Metro Rural Loop being considered to potentially service the five counties. This would help provide a framework for right-of-way needed for future expansion of State facilities. The Metro-Rural Loop also would provide connections to the existing State Highway System, and possibly with the proposed extension of Route 65 to the east. It should be noted that this concept does not currently include funding for Project Study Report development or construction.

However, it is looking at ways to address congestion and constraints on this section of Route 99.

III. COMPREHENSIVE CORRIDOR PERFORMANCE

A. Choosing Performance Measures

Appropriate performance measures and analysis tools must be selected for the Corridor, based in large part on the quantity and quality of data available. The following performance measures have been selected for this Corridor: Safety (measured by accident rates) and Operations (measured by LOS), and Maintenance (measured by preservation of pavement condition). The measures will provide a means to demonstrate that the mobility gains of corridor capacity improvements have been maintained after those improvements are in place. The recommended performance measures may undergo additions/changes as Caltrans District 6 enhances detection within the corridor.

B. Existing Conditions

Current AADT, Level of Service, % Trucks, Peak-Hour AADT, 10 and 20-year AADT forecasts, by segment of the Route 99 Corridor, are presented in Table 1, Page 5.

The information necessary to understand existing traffic conditions in the study area, and identify specific causes of problems, has been collected. This information includes traffic counts, Tachometer (Tach) runs, pavement condition, and accident data. These are discussed in more detail in the section on Operations Assessment (Page 22).

C. Develop Mitigation Strategies and Projects

Viable measures, ranging from system management strategies to maximize the efficient use of existing Corridor capacity, to more traditional capital improvement projects that would increase corridor capacity, has been evaluated. These strategies have been divided into short-term and long-term implementation timeframes. For identified mitigation strategies, performance measures will be identified, and planning-level cost estimates will be prepared.

The proposed performance measures will provide a sound technical basis for describing traffic performance on each corridor. In this CSMP, the focus has been placed on a few key measures because of the limited resources available to collect detailed data.

1. Safety-Assessment and Performance Measure (Accident Rates)

For the safety performance measure, the number of accidents and accident rates from the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) has been used. TASAS specifically contains data for accidents on state highways. Three years of safety data (September 1, 2004 to August 30, 2007) will be analyzed and input into Caltrans' Benefit/Cost ratio calculation to provide a measure of Accident Cost Savings in dollars. Caltrans will also use the expected accident rate for the current

facility, as compared to the expected rate for the proposed facility. This data will be used to evaluate the degree to which the strategies within the CSMP improve safety within the corridor.

TABLE 3
ACCIDENT RATES
COLLISIONS PER MILLION VEHICLE-MILES

		Actual			Average - Statewide		
TUL 99 PM	**LOCATION**	**Total***	**F + I****	**Fatal**	**Total**	**F + I**	**Fatal**
23.3 – 28.6	Ave 184 – Bardsley	0.60	0.18	0.01	0.72	0.28	0.01
28.6 – 30.6	Bardsley – Prosperity	0.58	0.10	0.00	0.92	0.34	0.01
30.6 – 33.3	Prosperity – Tulare	0.41	0.17	0.02	0.71	0.26	0.01
33.3 – 37.0	Tulare – N of Ave 280	0.60	0.15	0.01	0.60	0.26	0.02
37.0 – 41.2	N of Ave 280 – S of Ave 328	0.60	0.19	0.01	0.91	0.33	0.01
41.2 – 48.1	S of Ave 328 – Traver	0.42	0.13	0.01	0.49	0.21	0.01
48.1 – 53.8	Traver – End of County	0.77	0.23	0.01	0.57	0.25	0.02
FRE 99							
0.0 – 1.0	Beg. County – Route 201	1.15	0.35	0.03	0.92	0.34	0.01
CSMP Limits		0.60	0.18	0.01	0.67	0.27	0.01

*Total = Fatal + Injury + Non-Injury; **F + I = Fatal + Injury

The accident rates for this CSMP area are generally lower than the State Average. The northern 6.73-mile segment of the corridor from Traver Avenue (TUL PM 48.1) to Route 201 (FRE – PM 1.0) has accident rates higher than the State Average. However, fatality and injury accident rates are lower in these segments in comparison to the State Average. The accident rate for the CSMP corridor limits mirrors the Statewide average.

Accident Rates will be used as a performance indicator and will be measured and evaluated periodically to maintain safety on the rural Route 99 corridor. Safety is Caltrans' primary goal.

2. Incident Management

Incident management uses a variety of techniques, including the use of remote weather sensors and changeable message signs.

The annual International Agricultural Center Fair brings travel from all over the state, country, and world. This one-week event causes traffic delays along Route 99 for local and interregional traffic. The Caltrans Traffic Management Center (TMC) works with CHP to insure traffic flow is maintained to the greatest extent possible by directing traffic as needed.

Collision and/or other natural causes will require lane or road closures. Changeable Message Signs (CMS) systems are used to inform roadway users of the road closure, and if applicable, existing traffic control (e.g. one-way controlled traffic, CHP pace vehicles) and estimated amount of delay. CMS systems are also used to warn of high winds and accidents.

Fog is a frequent cause of accidents and delay during the winter months, occasionally requiring the use of California Highway Patrol (CHP) pace cars. Interregional traffic as well as local traffic is delayed, impeding the efficient movement of people and goods. To address the fog along the corridor, Caltrans is proposing an automated fog warning system on Route 99 between Traver Avenue and Manning Avenue. It would be comprised of installing large Changeable Message Signs (CMS) every two miles in both directions, Extinguishable Message Signs (EMS) and portable message signs in between the CMS's, road weather information system, and microwave detection to alert travelers of the fog conditions or other incidents that may hamper traffic. A federal demonstration pilot program is funding this $12 million project. The target date for completion is December 2008. Should this pilot program show benefits, there may be other segments along Route 99 where these improvements may be applied.

The TMC is dedicated to clearing incidents on Route 99 in a timely manner. A California Highway Incident Management Summit was last held in April of 2007 with partners to discuss the goal of clearing highway incidents within 90 minutes. Some of the top solutions were to implement technical interoperable communication systems, establishing Caltrans/CHP communication centers, training with consistent terminology within departments and revisions of laws to allow quick clearing activities.

3. Operations Assessment

The operations assessment is presented in table format in Table 1, Page 5, and includes the current AADT, Level of Service, % Trucks, Peak-Hour AADT, 10 and 20-year AADT forecasts, by segment.

a) Level of Service

One of the performance measures for Route 99 through Tulare County is “Level of Service” (LOS). LOS describes operating conditions on a roadway. LOS is defined in categories ranging from A to F, with A representing the best traffic flow and F representing the worst. As a general rule, the LOS C/D cusp is the target Caltrans strives to maintain because it provides the highest traffic throughput with the least traveler disruption. The current LOS for segments of the Route 99 Corridor of this plan area is LOS D, with the segment between Avenue 184 and the Bardsley OC LOS C, as shown in Table 1, Page 5.

Reduced speeds and bottlenecks, resulting in impacts to the flow of traffic, are indications that the current capacity of Route 99 is no longer adequate. Some additional lanes have been added to Route 99, but increases in ADT, increases in traffic merging on and off the freeway, and the high percentage of truck traffic has caused reduced freeway speeds. Interregional traffic is delayed, impeding the efficient movement of goods, while local traffic in the Cities of Kingsburg and Tulare is faced with longer traffic times for local trips including commercial deliveries and emergency vehicle response. Any closure or delay along this corridor has significant economic impacts. The number and width of lanes; the presence and width of shoulders; and the condition of the pavement affect capacity.

Typically, capacity-enhancing projects are designed to accommodate the additional traffic and improve traffic flow. Increasing capacity could be achieved by widening the route; however the ability to widen the route is hampered by available right-of-way and adjacent development. Developed land increases both the cost of right-of-way acquisition and the impact on those businesses and residences that must be relocated. This CSMP identifies the Ultimate Transportation Corridor (UTC) and subsequent preservation of the necessary ROW will ensure that facility improvement projects will be able to be implemented with a minimum cost to taxpayers and minimal impact to the community.

Traffic flow can also be affected by inadequate spacing between interchanges. Insufficient distances for vehicles to safely and efficiently merge on and off the highway may lead to localized congestion and a subsequent increase in accidents. Where existing interchange spacing does not meet the current standards, interchange spacing should be increased, auxiliary lanes added, or other operational solutions constructed to decrease the merging conflicts and improve operations.

b) Operational Analysis

The information necessary to understand existing traffic conditions in the study area, and identify specific causes of problems, has been collected. This information includes traffic counts, Tach runs, and accident data. Operations may be analyzed in two ways: travel time and delay.

i. Travel Time

Travel time is a measurement of the time it takes for a vehicle to traverse between two points on a corridor. This may be defined as the time to travel the entire study corridor length, or a measurement of the time between intermediate starting and ending points. The free flow and maximum travel times should be collected.

Travel time can be obtained using Tach runs, PeMS, or 511. There are benefits and disadvantages to any of the approaches. While the PeMS system can automatically compute travel times using speed data from freeway detectors, many places, including most of this section of the Route 99 corridor, do not have sufficient working detection units. Because of this, Caltrans has primarily relied on Tach runs. In the case of this section of Route 99, travel time data has been obtained from Tach runs. Tach runs are field surveys in which Caltrans staff drives the route segments to document travel speed, travel time and delays to determine if there is any congestion along the corridor. The intent of Tach runs is to show points or segments where recurrent traffic congestion or delays occur. Tach runs provide the most direct measurement of speeds and travel times; however, they are resource-intensive. The number of samples for a given corridor will therefore be lower with Tach runs than with the other two automated systems. Tach runs occur on a schedule of every 10 to 30 minutes, and provide continuous measurements without any gaps. With any of the measurement systems, consideration must be given for the exclusion of data collected when unusual conditions occurred (e.g., accidents, weather, special events).

Caltrans District 6 conducted Tach runs during on October 4, 2007 between 3:00 and 6:00 PM, when it was anticipated that traffic was at its peak. The "floating car" method was used and both northbound and southbound travel on Route 99 within the project limits of the corridor was measured. The Tach runs conducted for this section of Route 99 indicated that vehicular speeds never dipped below 40 mph. The speed dips to 40 mph were due to truck passing or trucks in both lanes. From the information gathered, there were no noticeably congested areas.

ii. Delay

Delay can be defined as the difference in travel time between actual congested conditions and the free-flow speed at the freeway speed limit and is reported as vehicle-hours of delay. Caltrans defines the congested speed threshold as 35 mph. This is the speed range at which traffic flow becomes stop and go. Speeds above 35 mph are not considered delay.

There are two types of delay: recurrent and nonrecurrent. Caltrans provides the following definitions:

- Recurrent delay occurs when travel demand exceeds freeway design capacity, and speeds are 35 mph or less during peak-commute periods on a typical incident-free weekday. The delay condition must last for 15 minutes or longer.
- Nonrecurrent delay is caused by irregular events, such as accidents, events, maintenance, or short-term construction.

The recommended process for determining existing delay is to calculate this performance measure from actual data sources. Caltrans definition for congestion on highways/freeways is 35 mph. As noted above, speeds did not dip below this threshold. Caltrans anticipates that, with the planned development in the area and the emphasis on Route 99 as a major north – south corridor for goods movement and farm-to-market travel, delay will become an issue in the future if steps are not taken to increase capacity and/or increase efficiency.

Caltrans' standard Benefit/Cost Ratio (B/C Ratio) will also be used to provide a measure of Person Hours of Delay Saved in dollars. The B/C Ratio analyses will be used to calculate delay during peak period, and will be used to evaluate the degree to which the strategies within the CSMP improve delay within the corridor.

4. Maintenance – Assessment and Performance Measure (Preservation)

a) Pavement Condition

The pavement condition for Route 99 is in various state of pavement distress ranging from no priority distress areas to (0%) to a section with a priority distress percentage of 11.45%. The distressed areas average approximately 5.13% of the total pavement area for the section of Route 99 included within this CSMP area. Percentages shown below are averages for each segment.

TABLE 4
PAVEMENT CONDITION

TUL 99 -POSTMILE	LOCATION	PRIORITY DISTRESSED AREAS[1]
23.2 – 28.6	Porter Slough – Bardsley	6.24%
28.6 – 30.1	Bardsley – S of Prosperity	0.00%
30.1 – 33.0	S of Prosperity – Cameron Creek	6.59%
33.0 – 37.2	Cameron Creek – S of Route 198	3.07%
37.2 – 41.2	S of Route 198 – N of Goshen O	6.75%
41.2 – 48.1	N of Goshen OC – N of Cross C	1.65%
48.1 – 53.9	N of Cross Creek – End of Coun	11.45%
FRE 99 - POSTMILE		
0.0 – 1.0	Beg of County – Route 201	1.46%
Cumulative		**5.13%**

Note[1]: Percent of roadway with major structural distress, minor structural distress, or poor ride quality.

The overall average for this section of Route 99 does not exceed the State average (26%).

The overall State of California goal is to maintain the existing level of pavement distress, per the 2007 Pavement Asset Management document, which is 12,998 lane miles or 26% of the system.

b) Corridor Maintenance and Preservation

The current rehabilitation strategy is to maintain and rehabilitate the existing facility with plans to improve various interchanges and widen the roadway where feasible. Projects from the State Highway Operations and Protection Program (SHOPP) are prioritized by the needs of the State Highway. These projects maintain or improve the condition, safety, and operation of the highway, and protect the investment that has been made on the facility. The SHOPP program includes six types of projects that would affect Route 99:

- Collision Reduction
- Roadway Preservation
- Bridge Preservation
- Roadside Preservation
- Mobility Improvements
- Mandates (storm water requirements and emergency type projects)

Nominated projects for each category compete for available dollars with other projects on a statewide basis. Safety improvements that meet certain thresholds of cost-benefit criteria are funded off the top of the SHOPP before other needs are addressed. They do not need to compete for funding on a statewide basis.

Maintenance costs including roadsides, pavement, bridges, guardrail, median barrier, signs, and delineation, have increased an average of 4 percent per year over the last five years. Maintaining adequate appearance and condition ratings is becoming increasingly difficult. The 10-year SHOPP includes investments in projects in both the rehabilitation and preventive maintenance categories. This investment is expected to provide highway appearance and condition ratings similar to current conditions. These conditions are less than Caltrans performance targets and less than desired by the communities served by Route 99.

Identification of the Ultimate Transportation Corridor (UTC) and subsequent preservation will ensure adequate right-of-way (ROW) to accommodate facility improvement projects beyond 2030. The 2030 concept for this

segment of Route 99 is a 6-lane freeway with auxiliary lanes in some sections. The Ultimate Transportation Concept (UTC) is an 8-lane freeway through the entire section of the corridor. For an 8 lanes plus auxiliary lanes, Caltrans would seek to obtain 275 feet of ROW. The existing right-of-way in this CSMP area has considerable variability; actual ROW needs would be determined at the Design phase for each project to be considered.

There are challenges in preserving right-of-way for future expansion. The Union Pacific Railroad (UPRR) tracks parallel Route 99 within the limits of this CSMP corridor. The tracks run along the east side of Route 99 from Route 201 to Route 198 and then along the west side from Route 198 to Avenue 184. Sections of the track are adjacent; others are further from the freeway right-of-way. There could be constraints to expanding the facility, including the interchanges, for those sections of the freeway that are in close proximity to the UPRR.

Caltrans goal for the future is to work with local agencies and the regional planning partners to develop conceptual alignments of corridors and footprints for interchanges that are believed to require expansion in the future. If these conceptual plans were to be adopted into the local jurisdictions' General Plans, those jurisdictions could use their land-use authority to preserve the necessary ROW for the corridor. Preservation would accelerate the necessary environmental clearances, reducing both time and costs. Preserving and protecting the needed right-of-way for future expansion of State facilities will greatly benefit the State, local communities and the public by providing a logical and orderly process for subsequent project delivery in terms of reducing time and cost savings.

c) Management and Agreements

This CSMP includes a portion of the Route 99 corridor primarily in Tulare County with the northern segment extending into Fresno County. Both Counties have local sales tax measures that help to fund transportation projects. Collectively, Caltrans, local agencies, community groups, and business interests have prepared a number of planning documents intended to improve the capacity and efficiency of the freeway corridor as well as its aesthetics. Additional emphasis has been placed on creating a "sense of place," a means of distinguishing one community along Route 99 from another, above and beyond the more standard type of planned projects. These documents include the Route 99 Business Plan, the Route 99 Corridor Enhancement Plan, and the Highway 99 Beautification Plan.

The Route 99 Business Plan has identified a number of needed improvements along the corridor between San Joaquin County in the north and Kern County in the south. Tier One projects focused on bringing Route 99 to a 6-lane freeway facility through the length of the corridor. The Route 99 Goshen to Kingsburg 6-Lane project was awarded funding from the Route 99 Bond

Program. This project would upgrade the existing facility to six lanes and fulfill the Tier One goal of the Business Plan, at least for this section.

Caltrans District 6 entered into a Memorandum of Understanding (MOU) with the Tulare County Association of Governments for the CSMP. The purpose of the MOU is to document the commitment of all parties to manage the corridor through applying principles and practices of system and corridor management and performance measurement for sustained corridor performance. Please refer to the approved MOU Appendix A, Pages 36 - 41. The transportation partners will meet on a regular basis for the following activities and decisions:

- Agreement to work plan, time line, roles, and responsibilities for development of the CSMP, including resources.
- Review draft products, including initial performance assessments and technical documents.
- Coordinate corridor planning and evaluation efforts and share information on related topics to corridor performance measurement and improvement.
- Identify opportunities for heightened understanding by local jurisdictions and the public on the mobility benefits of system and corridor management.

d) Other Performance Measures

Other performance measures, such as Mobility, Productivity (example: lost lane miles) and Reliability (example: Buffer Index) were not applied to this section of the Route 99 Corridor because of its predominantly rural character, lack of traffic measuring devices, lack of traffic congestion and bottlenecks. On a periodic basis, District 6 Traffic Operations and Planning will measure the traffic conditions along rural Route 99 and re-evaluate the necessary application of these and other performance measures.

IV. FUTURE CORRIDOR PERFORMANCE AND IMPROVEMENT PLANS

A. 10 and 20 Year Corridor Performance

Current AADT, Level of Service, % Trucks, Peak-Hour AADT, 10 and 20-year AADT forecasts, by segment of the Route 99 Corridor, are in Table 1, Page 5.

The plan for the rural Route 99 corridor is to convert the existing four-lane and five-lane freeway into a six-lane freeway throughout its extent. The ultimate facility for rural Route 99 is for it to be an eight-lane freeway. The performance of the freeway would be LOS “D” in 2020 and LOS “E” and “F” in 2030. These LOS figures would include the completion of the three 6-lane freeway segments from Goshen to Kingsburg (2013), Prosperity to Goshen (2018) and Avenue 200 to Prosperity (2024).

Improvements for rural Route 99 through Tulare County by the year 2030 will be funded through a variety of sources. This will include the State Transportation Improvement Program (STIP), interregional improvement (IIP), regional improvement (RIP) funds, Proposition 1B - State Route 99 Bond funds, State Highway Operations Protection Program (SHOPP) funds – for safety, rehabilitation, operations and ITS projects, Measure R funds (for use on interchange projects), and local development contributions. Additional funding, from local/State/Federal sources, may be available.

The following section illustrates the proposed strategy for improvements along the corridor. This is shown as a 10-Year Improvement Plan and a 20-Year Improvement Plan. The proposed unconstrained projects (unfunded beyond 2030) will be mentioned.

B. 10 Year Improvement Plan

The improvement plan for the next 10 years (2009-2020) would encompass funding from a diversity of funding sources. Planned projects are presented in Table 5, Page 30. This Table includes the planned SHOPP, STIP, and ITS projects for the ten-year period.

The STIP projects are comprised of the future capacity increasing projects that will convert the existing four-lane and five-lane freeway to a six-lane freeway in two different segments within 10 years.

1. Planned Capacity-Enhancing Projects

a) Goshen to Kingsburg 6-Lane

The Goshen to Kingsburg 6-Lane Project is the Proposition 1B project within this CSMP area. It is scheduled for construction in August 2010. It is primarily funded by the Proposition 1B, Route 99 Bond Program in the amount of $154.6 million. It is supplemented with STIP and SAFETEA-LU demonstration funds. The Project is located on Route 99 and extends from 0.2 mile north of the North Goshen OH in Tulare County to 0.2 mile north of the Conejo Avenue Undercrossing (UC) in Fresno County. The capacity-increasing project proposes to add lanes in the median. The Kings River Route 99 bridges will be replaced with new bridges.

Sixteen (16) existing bridges will be widened and/or lengthened. Soundwalls are proposed for three (3) locations. Because of space constraints in the Kingsburg area, median oleander planting will need to be removed and replaced with paved shoulders and concrete median barrier. The Project also includes replacement planting as mitigation for the removal of the oleanders.

With construction of the project the Daily Vehicle Hours of Daily Saved would be 1,564 Hours, and the Daily Peak Duration Person-Minutes Saved would be 124,574 Minutes. The project would also improve safety and have the benefit of addressing the goal of accident rate reduction. The actual accident rate is 0.66 MVM. Post construction statewide average accident rate is 0.50 MVM. Accident rate is

expressed in the number of accidents per million vehicle miles traveled over a 3-year period.

TABLE 5
TEN-YEAR IMPROVEMENT PLAN

Tul/Fre Postmile	Project Description	Location	Target Date	Funding Source	2008 Estimated Cost
Tul PM 19.8 –25.0	Pavement rehab; southbound lanes	Near Avenue 152 SB off-ramp to Avenue 144/SR 190 to Elk Bayou	2014	SHOPP	$12 mil
Tul PM 25.4	Bridge deck replacement	Avenue 200 OC	2011	SHOPP	$3.3 mil
Tul PM 25.4 – 27.6	Construct New Interchange	AgriCenter Drive Interchange	2015	STIP & Local Dev	$48 mil
Tul PM 27.5 - 27.6	Interchange Improvements	Paige Ave	2015	STIP & Local Dev.	$56 mil
Tul PM 30.6 – 41.3	Widen from 4F to 6F	Prosperity Avenue to Goshen OH	2016	STIP	$150 mil
Tul PM 31.3 – 32.6	Modify Interchange	Cartmill Avenue	2010	IIP, Measure R, Local Dev.	$61 – 65 mil
Tul PM 38.9 & 51.8	CMS	SR 198 & Dodge Ave.	2018	SHOPP	$300,000
Tul PM 39.6 – 41.3	Reconstruct Interchange	Betty Drive	2015	STIP, IIP, Measure R, Local Dev.	$41.9 mil
Tul PM 41.3 – 53.9/Fre PM 0.00 – 0.936	Widen from 4F to 6F	Goshen OC to SR 201	2010/2011	STIP, SAFETEA-LU Demo, 99 Bond	$172 mil
Tul PM 47.0 – 53.9	AC Overlay, Rehab	South of Merritt Drive OC to Tulare/Fresno County Line	2013	SHOPP	$11.3 - 12.7 mil
Tul PM 52.6 – 52.7	Rehab bridge deck	Kings River Bridge	2008/2009	SHOPP	$865,000

The next 6-lane segment to the south from Prosperity Avenue to the Goshen OH is scheduled to commence construction in April 2016, provided that funding is available.

b. Interchange Projects

There are two interchange projects scheduled within the 10-year planning horizon. The Betty Drive Interchange Project is scheduled for construction in 2015, and the Cartmill Avenue Interchange is scheduled for construction in 2012. Caldwell Avenue Interchange Project is also scheduled for construction, but the construction date of 2021 means that this project is in the twenty-year plan, shown in Table 6, Page 32.

There are additional improvements for preservation, safety and operations that are proposed for Route 99 this period. Most of the SHOPP/ITS projects should be completed within 20 years. Some may be coordinated with the 6-lane widening projects along the corridor. In addition, developers may provide the funding to complete project improvements as warranted by local development.

2. SHOPP

The SHOPP projects would be completed as warranted throughout this section of Route 99. Improvements planned for the corridor include pavement rehabilitation, AC overlay, installing median barriers, widening and replacing bridge decks, and rehabilitating safety rest areas. Given historical trends, it is anticipated that up to one-third of the planned improvements may be completed within 10 years. SHOPP funding limits may reduce the percentage of projects completed within the ten-year time frame; projects will be implemented as funding becomes available. The SHOPP projects not completed within the 10-year horizon will likely be constructed within the 20-year planning horizon of the CSMP.

3. ITS

ITS elements planned for this segment included installing Traffic Monitoring Systems (TMS), Changeable Message Signs (CMS), Road Weather Information System (RWIS), Closed Circuit Television (CCTV) system, and Highway Advisory Radio (HAR). These elements will help keep motorists appraised of incidents and inclement weather as well as improve performance along the corridor. The SHOPP/ITS projects may be funded and completed in conjunction with the completion of the 6-lane freeway projects and/or local development projects. Please refer to Table 5, Page 30, for proposed ITS projects planned for the next ten years.

C. Twenty - Year Improvement Plan

The 20-year improvement plan (2021-2030) would also be comprised of funding from a diversity of funding sources.

Interchange improvements anticipated for the 20-year horizon are: Paige Avenue and AgriCenter (Commercial). These projects are in the Regional Transportation Plan (RTP) but are not constrained through construction.

D. Beyond Twenty-Year Improvement Plan

Caltrans has identified a number of improvements along this corridor that may be necessary, based on a continuation of the past pattern and direction of development. These improvements are presented in Table 7, Page 33. Projects identified in this Table will be subject to change, with modifications to cost inevitable and modifications in scope possible. New priorities may emerge that will cause these projects to be delayed in order to meet the demands identified at another location.

TABLE 6
TWENTY-YEAR IMPROVEMENT PLAN

Tul/Fre Postmile	Project Description	Location	Target Date	Funding Source	2008 Estimated Cost
TUL 25.0 – 34.0	AC Overlay	From Elk Bayou to Tagus Ranch	2018	SHOPP	$10 MIL
Tul PM 28.6	Improve Interchange	Bardsley Avenue	2020	Local Dev.	Not Determined
Tul 36.1 – 36.8	Improve Interchange	Caldwell Ave	2021	IIP & Measure R, Local Dev.	$31 mil
Tul 41.3 – 48.7	Install RWIS	Goshen OH & Traver/Merritt Drive	2018	SHOPP	$140,000

The projects listed as being beyond twenty-years are unconstrained. The improvements to the Bardsley Avenue Interchange are not in the RTP. Interim improvements would include signalization and ramp improvements, which would be funded through local development fees. The upgrade of the interchange would likely occur at the end of the CSMP's planning horizon.

Over the next twenty-five years and beyond, Caltrans and local agencies will need to balance the question of expanding Route 99 to add more capacity with the impacts on the environment and local communities. This will include consideration of alternate parallel highway routes, such as a potential new Route 65 (metro rural loop project) to the east, as well as the northward expansion of Route 65. The proposed High Speed Rail Corridor will be another consideration, as would the diversion of goods movement through bypasses, particularly around the urban areas. Measures to increase efficiency, as outlined in the section on ITS, will be an important part of improving performance on the freeway.

TABLE 7
BEYOND TWENTY-YEAR IMPROVEMENT PLAN

Tul/Fre Postmile	Project Description	Location	Target Date	Funding Source	Total Cost
Tul PM Various	ADA Upgrades	Various locations in Tulare County	Not Determined	SHOPP	Not Determined
Tul PM 16 – 23.5	Widen from 4F to 6F lanes	South of Tipton to Ave 200	>2030	STIP	Not Determined
Tul PM 23.5 - 30.5	Widen from 4F to 6F lanes	From Ave 200 to Prosperity	>2030	STIP	Not Determined
Tul PM 30.6, 32.2, 36.4, 38.9, 40.0, 40.6, 41.1, 48.7, & 51.8	Install TMS	Prosperity Ave, Road 100, Ave 280, SR 198, Ave 304, Ave 308, Goshen OH, Traver/Merrit Dr., & Dodge Ave	>2030	SHOPP	Not Determined
Tul PM 30.6, 32.3, 36.4, 48.7, 51.8	Install CMS	Prosperity Ave, Road 100, Ave 280, Traver/Merrit Dr., & Dodge Ave	>2030	SHOPP	Not Determined
Tul PM 38.9 & 51.8	Install CCT	SR 198 & Dodge Ave	>2030	SHOPP	Not Determined
Tul PM 40.0	Install HAR	Avenue 304	>2030	SHOPP	Not Determined
Tul PM 53.5	Improve Interchange	Mendocino Ave	>2030	STIP	Not Determined

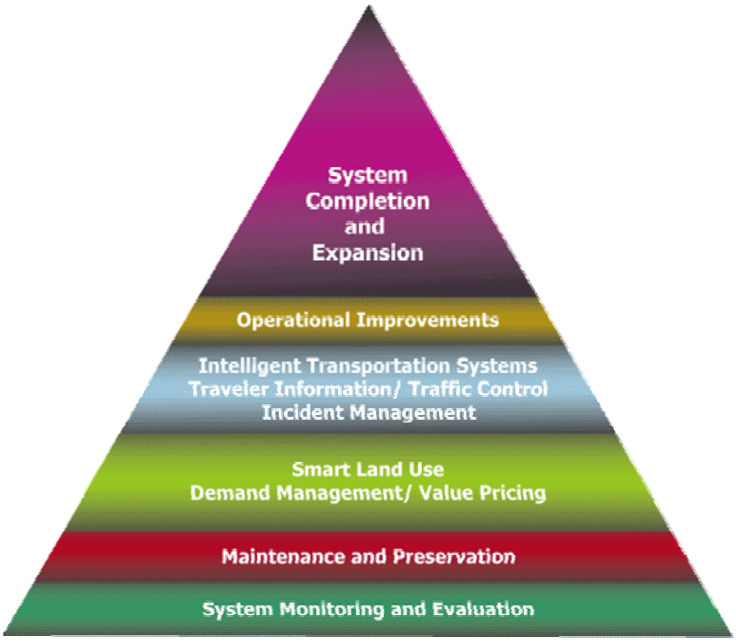
V. CONCLUSION

Over the next twenty-five years and beyond, Caltrans and local agencies will need to balance the question of expanding Route 99 to add more capacity with the impacts on the environment and local communities. This will include consideration of the proposed of alternate parallel highway routes, such as Routes 43 and 65. The proposed High Speed Rail Corridor would be another consideration as would the diversion of goods movement through bypasses, particularly around the urban areas. Measures to increase efficiency, as outlined in the section on ITS, will be an important part of improving performance on the freeway.

Corridor productivity can only be restored and maintained through coordinated planning and management effort of all transportation partners. The System Management Strategies *Go California* – Mobility Action Plan is part of Governor Schwarzenegger's Strategic Growth Plan. The CSMP identifies a number of elements essential for this goal. The "System Management Pyramid" can best visualize these elements.

Each element, while represented separately, works as an essential part of the whole. The elements may be summarized as follows, beginning at the bottom and working to the top of the pyramid:

SYSTEM MANAGEMENT PYRAMID



1. **System Monitoring and Evaluation:** The basic foundation of successful system management is System Monitoring and Evaluation. This is accomplished through comprehensive performance assessment and analysis. Understanding how a corridor performs and why it performs the way it does is critical to developing appropriate strategies. The first step in this effort will be to analyze the system that we now have available. This will include the identification of current bottlenecks, their causes, and the impact that these individual bottlenecks have on the whole of the corridor. The next step will be to prioritize the improvements planned on the corridor based on need and the ability to maximize performance of the system as a whole. This prioritization will be a joint effort of Caltrans and its partners. The PDT will then develop a list of performance measures that will evaluate how effective the system improvements have been. The uniqueness of the corridor and the current technology available will be the determining factors.

2. **Maintenance and Preservation:** Maintaining the system in as optimum a condition as possible will require all partners' participation. The corridor does not operate in isolation, but is part of an overall network. The best strategies must be determined to maximize operations of the entire system.

4. **Smart Land Use, Demand Management/Value Pricing:** Land use decisions by local government impact the transportation system. Appropriate planning can reduce this impact by preserving right-of-way for future projects. In addition, approving only those developments that are compatible with an adjacent or nearby transportation system will help to protect the system. The extent of the usefulness of demand management strategies, and which ones will be most effective, will be part of the process of describing the current system and the current ITS components available on the system, as well as the future system. Finally, value pricing may be a part of project prioritization efforts to be undertaken by partners. One key component is often a cost-benefit assessment.

5. **Intelligent Transportation Systems/Traveler Information/Traffic Control/Incident Management:** These strategies play an integral part in optimizing the performance of the system with lower cost, more expedient ways of addressing bottlenecks and other traffic problems.

6. **Operational Improvements:** These are higher cost improvements in the SHOPP program that can improve the traffic flow at an intersection, interchange or short portions of the mainline system.

7. **System Completion and Expansion:** At the top of the pyramid, these are improvements that are capacity enhancing or that help complete the system.

The process of system management is an ongoing process. New needs will be identified, new technology available, and funding sources and revenues will be changing on a constant basis. Caltrans and the local partners will need to be flexible and responsive to fluid transportation scenarios. Therefore, the CSMP for Route 99 must be a living document, subject to updates as the transportation picture for the corridor is altered.

SIGNATORIES

MEMORANDUM OF UNDERSTANDING
FOR
STATE ROUTE 99 CORRIDOR
(TUL PM 23.325/53.9 to FRE 0.0/1.0)

Malcolm X. Dougherty
California Department of Transportation, District 6
District Director
1352 W. Olive Avenue
Fresno, CA 93728

11/5/07
Date

George Finney
Tulare County Association of Governments
Executive Director
5961 S. Mooney Boulevard
Visalia, CA 93277

10-31-07
Date

California Department of Transportation
District 6
Corridor System Management Plan (CSMP)

State Route 99
(TUL PM 23.325/53.9 to FRE 0.0/1.0)
Charter for Development and Implementation

The Development and Implementation of a Corridor System Management Plan (CSMP) for State Route 99 between Avenue 184 in the City of Tulare and State Route (SR) 201 in the City of Kingsburg.

This Charter or MOU is between the California Department of Transportation, District 6 (hereinafter, District 6) and the Tulare County Association of Governments (TCAG). This MOU constitutes solely as a guide to the respective obligations, intentions and policies of the partners and District 6 to identify the development and management of the Route 99 corridor between Avenue 184 and SR 201. This MOU addresses the principles and practices, system management process, roles and responsibilities and commitment of the responsible partners. This MOU is not designed to authorize funding for the project effort, nor is it a legally binding contract. It is the intent of this MOU to establish a mutual policy leading to a cooperative effort between District 6 and partners for the improvement of SR 99.

Purpose

The purpose of this charter is to document the commitment of all parties to manage the corridor through applying the principles and practices of system and corridor management and performance measurement for sustained corridor performance. The initial phase is development and implementation of a CSMP, across all jurisdictions and modes, for highest mobility benefits to travelers in the corridor. The CSMP will assess current performance, identify causal factors for congestion, and based on testing of alternative corridor management improvements scenarios (typically through traffic analysis) propose the best mix of improvements, strategies and actions to restore throughput, improve travel times, reliability, safety, and preserve the corridor. The CSMP is a guide for managing the corridor among all partners.

Principles and Practices

The following principles and practices will guide development and implementation of the CSMP.

- Corridor productivity can only be restored and maintained through a coordinated planning and management effort of all transportation partners. Restoring productivity is vital to the state, regional and local economy and quality of life and safety for travelers.
- The department, regional agencies, local jurisdictions, and modal operators are partners in developing an effective CSMP to guide corridor management for highest productivity, reliability, safety and preservation based on performance assessment and measurement.
- Development of the CSMP is complementary to and consistent with federal provisions for a continuing, cooperative, and comprehensive planning process among transportation partners.
- Supports state Congestion Management Program and SAFETEA-LU provisions for increased emphasis on system and corridor management and performance measurement in regional transportation plans as well as for real-time traveler information.
- Improvements identified in the CSMP to restore corridor productivity should be candidates for all categories of regional and local funding as applicable.

Roles and Responsibilities

The transportation partners (and other applicable partners) will meet on a regular basis for the following activities and decisions:

- Agreement to a work plan, time line, roles and responsibilities for development of the CSMP, including resources.
- Review draft products, including initial performance assessments and technical documents.
- Coordinate corridor planning and evaluation efforts and share information on related topics to corridor performance measurement and improvement.
- Identify opportunities for heightened understanding by local jurisdictions and the public on the mobility benefits of system and corridor management.

Appendices:

- Corridor System Management Plan Development Work Plan (Attachment 1)
- Map of SR 99 corridor from Tulare Post Mile (PM) 25.325/53.9 to Fresno PM 0.0/1.0 (Attachment 2)

Attachment 1

Corridor System Management Plan (CSMP) Development

Work Plan

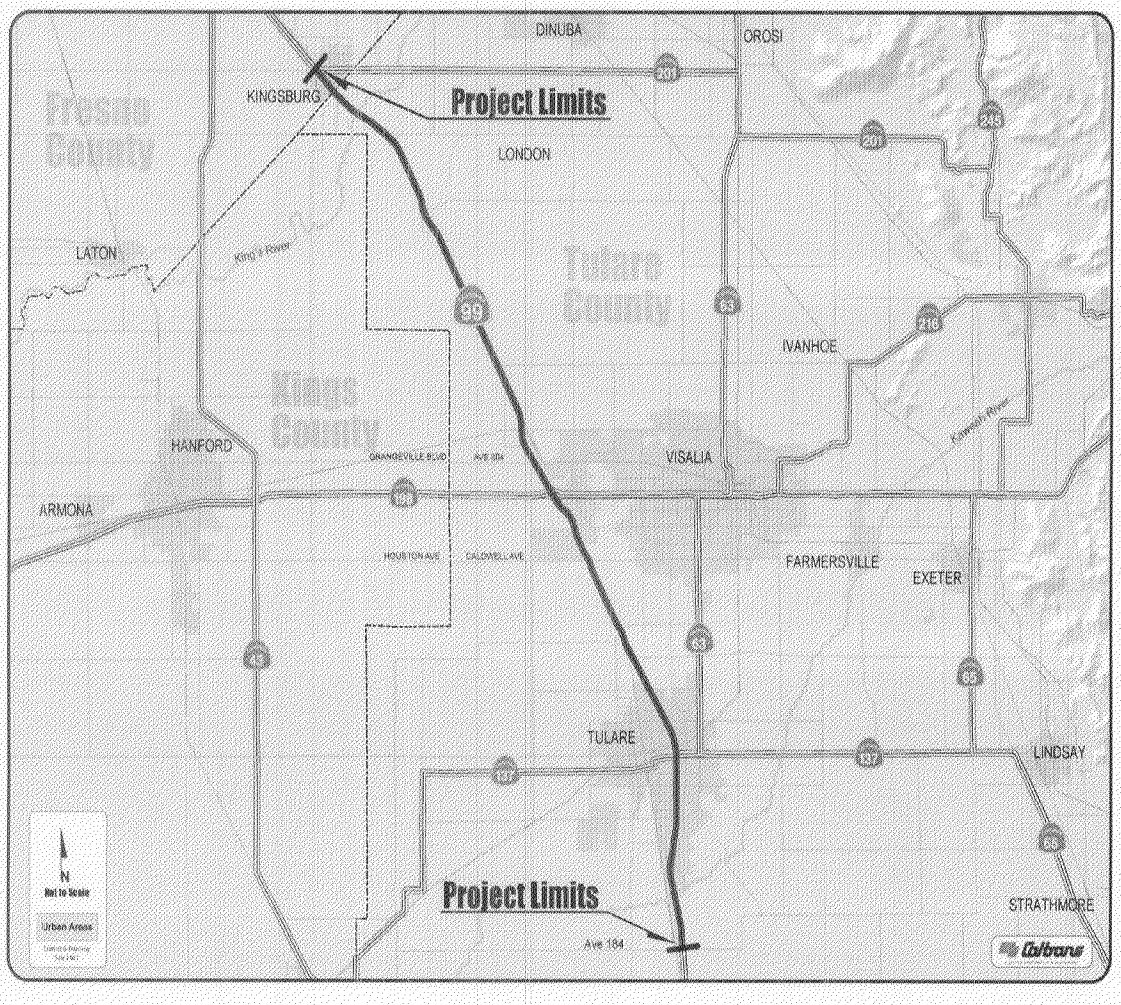
Corridor TUL/FRE-99

ID	Task Description	2007												2008												2009											
		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct
1	Establish CSMP Team																																		
2	Prepare Work Plan																																		
3	Key Meetings (throughout the workplan)																																		
4	Develop Draft MOU/Initiate Process Commitment																																		
5	Complete Process Commitment (Signed MOU)																																		
6	Prepare And Share Project Narrative With MPO																																		
7	Orientation/Education Sessions for Partner Agencies																																		
8	Document Existing Traffic Data/Conduct Counts As Needed																																		
9	Assess Traffic Analysis Needs																																		
10	Establish Corridor Performance Measures																																		
11	Initiate Base Performance Assessment																																		
12	Continue Performance Assessment Initiate Safety & Ops Identification																																		
13	Identify Planned and Programmed Improvements Including ITS Elements																																		
14	Ongoing CSMP Preparation																																		
15	Identify Alternative Performance Scenarios (Project, Actions, Strategies)																																		
16	Traffic analysis- All Planned and Programmed Projects.																																		
17	Traffic analysis/Model Improvement Scenarios																																		
18	Establish Initial Staging / Sequencing Plan																																		
19	Full Performance Assessment and Analysis																																		
20	Assess Future Performance In Corridor																																		
21	Develop Recommendations and Performance Imprv Planning-Level Cost Est																																		
22	CSMP Adoption by Regional Entities																																		
23	Ongoing Management Of Corridor Using CSMP																																		
24	Continuous Corridor Performance Assessment																																		
25	Implementing CSMP For Highest Performance Outcomes Throughout Corridor																																		

Executive Steering Committee
District 6 Director
District 6 Deputy Director, Planning and Local Programs
District 6 Deputy Director, Maintenance and Operations
District 6 Deputy Director, Program/Project Management

CSMP Development Team
District 6 Central Region Planning
District 6 Technical Planning
District 6 Program/Project Management
District 6 Traffic Operations
District 6 Traffic Engineering
Tulare County Association of Governments
Tulare County Resource Management Agency (Planning)
Tulare County Resource Management Agency (Engineering)
City of Tulare Planning
City of Tulare Engineering
Fresno COG
City of Kingsburg

Attachment 2



APPENDIX B
INTELLIGENT TRANSPORTATION SYSTEMS

ITS is any electronic transportation system that communicates information to the traveler that will improve safety and efficiency. ITS includes traffic signals, closed-circuit televisions, changeable message signs, ramp meters, weigh-in-motion devices, roadway service patrols, weather stations, highway advisory radio stations, and transportation management centers. Traveler Information Broadcast Systems, traffic signal priority for emergency or transit vehicles, ITS data archive management, and vehicle safety warning systems are all a part of ITS. Also included is centralizing the control of many of these components from traffic or transit management centers.

One Traveler Information Broadcast System is the "511" system. The 511 system is a new three-digit phone number program to access traveler information that is being implemented throughout various areas of the country. 511 is not available in our area at this time. However, some San Joaquin Valley Metropolitan Planning Organizations have committed to implementing a version of the 511 in some counties. This scaled down version should be up and running by the end of 2008.

Deployment of ITS technology will enhance traveler information services, as well as the operational and safety efficiency of the Route by informing motorists of traffic congestion, inclement weather such as fog, dust, highway construction and/or closings. Currently, there is a regional architecture in existence called the "San Joaquin Valley ITS." This architecture covers the 8 counties within the San Joaquin Valley (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern). This Plan is available at: http://www.kimleyhorn.com/Caarchitecture/task9/sjintro.htm.

i. Detection

Detection is one of the most important components of ITS. Detection refers to the real-time measurement of transportation movements and conditions. In the past, measurements have been conducted periodically (such as once per year) and those measurements were used to determine the need for infrastructure expansion.

Optimizing management strategies will require accurate, on-going data collection be provided by detection systems placed throughout the corridor. Without detection systems, transportation agencies cannot implement advanced traffic control strategies, cannot inform the public about traffic conditions, expected delays and options, and cannot detect and react to incidents quickly enough to minimize the impacts created by those incidents. Route 198 within the limits of this CSMP does not currently include a sufficient detection system to fully optimize these strategies. Because of this, numerous projects to install these systems are proposed, and Caltrans District 6 has made a commitment to increasing the level of detection as quickly as possible. In addition, improvement projects are typically planned to include detection units as part of the construction. Caltrans commitment to the installation of detection units includes installing wireless radar units at the first available opportunity. Even though these

wireless units are part of the project, they can be installed before construction, without the effort and cost of disturbing a more traditional system when the road construction begins.

ii. Traffic Control

Traffic control, another element of ITS, includes signal strategies for managing traffic flows on arterials as well as ramp metering on the freeway system. These strategies offer great promise to improve the productivity of the transportation system. There are, however, challenges for Caltrans in utilizing some of these options. Local agencies are often concerned that traffic control devices will cause additional traffic to choose local streets as an alternative. Caltrans will need to work with local partners to reach solutions that will be agreeable to all parties.

iii. Incident Management

Incident Management is a significant component of ITS. Most studies in the United States suggest that incidents such as accidents, special events, and severe weather conditions are responsible for about half of the delay on our freeway system.

Motorists are accustomed to normal delays. However, traffic incidents disrupt the motorist's normal routine, creating unplanned delays. Such delays can cause negative impacts to motorists. Unanticipated delays may also create frustration, aggressive driving, and the potential for "Road Rage." Such aggressive behavior poses a danger not only to other motorists but also to emergency response personnel. The goal of effective Traffic Incident Management (TIM) is to reduce the time it takes to clear traffic incidents from the roadway. The less time it takes to clear an incident, the less congestion and delay the motorist experiences. Safety for both the emergency response personnel and the traveling public is improved. Even small improvements in this process can yield significant benefits. Effective TIM relies on advanced technologies to allow for expedited incident detection, verification, coordination among necessary emergency response agencies, and the subsequent clearance of an incident as rapidly as possible.

Collision and/or natural causes will often require lane or road closures. Changeable Message Signs (CMS) systems are used to inform travelers of the road closure, and, if applicable, existing traffic control (such as one-way controlled traffic, CHP pace vehicles) and the estimated amount of delay. CMS systems are also used to warn of high winds and accidents.

iv. Advanced Traveler Information Systems

One of the more progressive components of ITS is the Advanced Traveler Information System (ATIS). Most commuters get information about traffic conditions from the media; for instance, radio stations. ATIS will provide modal-specific, time-of-day demand data that will allow travelers to get the most out of the transportation system. The system would allow travelers to manage their trips in the most efficient manner. Implementing advanced traveler information systems requires a partnership between

transportation agencies and the public. However, it is clear that the framework is not yet fully developed and that, at this time, current detection systems are not adequate for real-time, tailored information.

v. Traffic Management Centers

Effective ITS implementation requires coordination of all components. Traffic Management Centers (TMC) play an important role in day-to-day system management, providing coordinated incident responses, as well as integration of various systems. An example of integration would be the coordination of ramp metering and arterial signal management. Traveler information also requires sharing data with both public and private partners. Different agencies, such as Caltrans, the California Highway Patrol (CHP), and the media, play different roles and have different systems for incident management. The TMC integrates these roles and systems in one location to optimize performance. TMCs are used in emergencies, Amber Alerts, and provide an Emergency Operations Center function during natural disasters, such as earthquakes. TMCs also serve a security preparedness function; staff can monitor the urban freeway system, quickly activate response strategies (such as changeable message signs), or notify the proper authorities when security risks are identified.

Logical phasing for implementing the components of an effective Traffic Management System would be:

- Installing simple, adaptive-scheme ramp metering;
- Optimizing the meter rates;
- Implementing a corridor adaptive ramp-metering scheme within urbanized areas;
- Advanced arterial signal actuation strategies and improved incident management; and
- With all of these in place, a comprehensive traveler information system as the final goal.

Monitoring and evaluation are the foundations for sound management of the corridor and will help to identify the optimum strategies to improve the transportation corridor. Strategies range from maintenance and preservation to system expansion, but will focus on optimization of the existing system by fully incorporating operational strategies into the management plan. Implementation of ITS strategies will complement other improvements, including those improvements that may be implemented by partner agencies such as transit, light rail, and improvements on the local road system. The goal is that the whole of the transportation system, including highways, local roads, and alternative means of transportation, operate as one seamless network.

vi. Transportation Demand Management

Transportation Demand Management is designed to reduce vehicle trips during peak hours. Transportation Demand Management is specifically targeted at the work force, as commuters generate the majority of peak hour traffic. Incorporating these strategies is a part of land use decisions, the prerogative of local government. Strategies include:

- Rideshare programs
- Transit usage
- Flex hours
- Vanpools
- Bicycling and walking
- Telecommuting
- Mixed land uses (jobs – housing balance)

Transportation Demand Management programs could be required by local jurisdictions for any large commercial or office project and could be tied to incentives of some sort to encourage the development of such programs.

APPENDIX C
DOCUMENTS USED IN THE PREPARATION OF THIS CSMP

1) Transportation Management System (TMS) Master Plan; Caltrans
2) Traffic Operations Strategic Plan; Caltrans
3) I-880 Corridor System Management Plan; Caltrans District 4
4) State Route 99 TCR; Caltrans District 6
5) Mainstreaming ITS and Use in the Planning and Programming Environment; Caltrans
6) Interregional Transportation Strategic Plan; Caltrans
7) Regional Transportation Plan; Tulare County Association of Governments
8) Regional Transportation Plan; Kings County Association of Governments
9) Bay Area/California High-Speed Rail Ridership and revenue Forecasting Study; California High-Speed Rail Authority
10) Goods Movement Action Plan; Business, Transportation and Housing Agency and California Environmental Protection Agency
11) 2002 Global Gateways Development Program; Caltrans
12) Demographic Research Unit, California State Census Data Center, Census 2000 PL94-171, California Department of Finance
13) California State Rail Plan; Caltrans
14) San Joaquin Valley Goods Movement Study; Counties of the San Joaquin Valley and Caltrans
15) County of Tulare General Plan; Tulare County
16) City of Tulare General Plan; City of Tulare
17) City of Visalia General Plan; City of Visalia
18) Freeway Performance Initiative Traffic Analysis; Metropolitan Transportation Commission, Final Report, October 2007
19) Goods Movement Action Plan; Business, Transportation and Housing Agency And California Environmental Protection Agency, January 2007

APPENDIX D
ACRONYMS

AADT - Average Annual Daily Traffic
ATIS - Advanced Traveler Information System
BNSF - Burlington Northern Santa Fe
CAPM - Capital Preventive Maintenance
CHP - California Highway Patrol
CMIA - Corridor Mobility Improvement Account
CMS - Changeable Message Sign
CSMP - Corridor System Management Plan
CT - Caltrans
CTC - California Transportation Commission
EMS – Extinguishable Message Sign
HSRA - High Speed Rail Authority
IIP- Interregional Improvement Program
IRI - International Ride Index
ITS - Intelligent Transportation System
ITSP - Interregional Transportation Strategic Plan
LOS - Level of Service
MOU - Memorandum of Understanding
MSL - Maintenance Service Level
MTC - Metropolitan Transportation Commission
OH – Overhead
PCR - Pavement Condition Report
PCS - Pavement Condition Survey
PDT - Project Development Team
PeMS - Performance Measurement System
PM - Postmile
RIP - Regional Improvement Program
ROW - Right-of-Way
SAFETEA-LU - Safe Accountable Flexible Efficient Transportation Equity Act- Legacy for Users
SHOPP - State Highway Operation Protection Program
SJV - San Joaquin Valley
SJVR - San Joaquin Valley Railroad
STAA - Surface Transportation Assistance Act
STRANET - Strategic Highway Network
TASAS - Traffic Accident Surveillance and Analysis System
TCAG - Tulare County Association of Governments
TCRP - Transportation Congestion Relief Program
TIM - Traffic Incident Management
TMC - Transportation Management Center
TMS - Transportation Management System
UC - Undercrossing
UP - Union Pacific
UTC - Ultimate Transportation Concept