Transportation Concept Report

State Route (SR) 165

District 10

November 2015

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California Department of Transportation

Provide a safe, sustainable, integrated, and efficient transportation system
To enhance California's economy and livability.

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ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The system planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (California Government Code (CGC) section 65086) by evaluating conditions and proposing enhancements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety and health; stewardship and efficiency; sustainability, livability and economy, system performance, and organization excellence.

The System Planning process comprises four parts: the District System Management Plan (DSMP) and project list, the TCR, and the Corridor System Management Plan (CSMP). The DSMP is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. The DSMP Project List is a list of planned and partially programmed transportation projects used to recommend projects for funding. The CSMP is a complex, multi-jurisdictional planning document that identifies future needs within corridors experiencing or expected to experience high levels of congestion. The CSMP serves as a TCR for segments covered by the CSMP. These System Planning products are also intended as resources for stakeholders, the public, and partner, regional, and local agencies

TCR Purpose

California's SHS needs long range planning documents to guide the logical development of transportation systems as required by CGC section 65086 and as necessitated by the public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20 to 25 year planning horizon. The TCR is developed with the goals of safety and health, improving stewardship, efficient, sustainable and livable communities, while promoting economic growth and high system performance through organizational excellence in planning the corridor. This is accomplished through integrated management of all aspects of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements and travel demand management components of the corridor.

STAKEHOLDER PARTICIPATION

The State Route (SR) 165 TCR employed an outreach strategy consistent with local Metropolitan Planning Organization (MPO) and Regional Transportation Planning Agency (RTPA) outreach conducted with the development of the Overall Work Program (OWP). This strategy avoids duplicative effort, and reduces public confusion as to the aims of local and regional transportation planning. As the OWP intends to meet federal requirements outlined in 23 Code of Federal Regulations (CFR) 450.314, and in the Moving Ahead for Progress in the 21st Century Act (MAP-21), external stakeholder needs can be addressed by local partner outreach efforts related to the OWP. Development of the TCR includes initial outreach to internal partners—these would be traffic operations, traffic safety, project management, maintenance, environmental support, as well as others.

EXECUTIVE SUMMARY

Within District 10, State Route (SR) 165 acts as a secondary goods movement route connecting Interstate 5 (I-5) in Merced County with SR 99 in Stanislaus County. SR 165, a Terminal Access (TA) truck route consistent with the provisions of the Surface Transportation Assitance Act of 1982 (STAA), permits transport of local agricultural goods across the Merced River without having to access the national truck network of I-5 and SR 99. SR 165 serves three communities, the City of Los Banos, Stevinson, and Hilmar;[1] and travels through several wildlife refuges and a State park. For much of its extent the route is rural and designated a minor arterial except for segments within the City of Los Banos and the portion of SR 165 that approaches SR 99 (near the City of Turlock), both of which are on the National Highway System (NHS).

SR 165, not being on the Interregional Road System (IRRS), is built to conventional highway design and has a concept Level of Service (LOS) of D. To assess LOS upon the route, SR 165 was divided into ten segments in Merced County and one segment in Stanislaus County. By 2040 it is anticipated that ten of eleven segments will have an LOS that exceeds the concept LOS. Several operational improvements are proposed for the deficient segments, though there may be a future need to upgrade those segments subject to delay due to traffic signals, high levels of local congestion, or posted speed limits below 40 Miles per Hour (MPH) to expressway. Forecast growth in traffic volumes on rural segments may require expansion to four lanes. Proposed ramp meters at the interchanges for I-5 and SR 99 may necessitate signals at the on ramps.

SR 165 is not a strong interregional work commute corridor. Trips originating from both Hilmar and Los Banos appear to have local destinations. Tourism and recreation travel into the corridor are likely associated with the Hilmar Cheese Company and the various national wildlife refuges and State parks in the area.

The SR 165 corridor is not strongly associated with alternative transportation modes. SR 165 has a daily para-transit service, and does not provide an integrated bicycle or pedestrian facility beyond the Class III bicycle designation for the route, and sidewalks within urban areas. Active transportation improvements (both bicycle and pedestrian) along the corridor incur an incompatible use at wildlife refuges.

[1]Hilmar refers to the Hilmar-Irwin Census Designated Place.

Concept Summary

CONCEPT SUMMARY					
Segment	**Segment Description**	**Existing Facility**	**20 - 25 Year Capital Facility Concept**	**20-25 Year System Operations and Management Concept**	**Post-25 Year Concept**
Mer 1	I-5 to Pioneer Rd.	2C	2C	I-5 STAA Truck interchange ramp improvements and signals	2C
Mer 2	Pioneer Rd. to SR 152	2C	4C		4C
Mer 3	SR 152 to Overland Ave.	2C	4C		4C
Mer 4	Overland Ave. to Henry Miller Rd.	2C	4C		4C
Mer 5	Henry Miller Rd. to SR 140	2C	2C with Passing Lanes	Henry Miller Rd. STAA Truck Turning Radius Intersection Improvement	2C with Passing Lanes
Mer 6	SR 140 to Third Ave.	2C	4E	SR 140 truck Intersection improvement analysis	SR 165, Expressway Realignment from SR 140 to SR 99
Mer 7	Third Ave. to East Side Canal Bridge	2C	4E	Merced River Bridge improvements	SR 165, Expressway Realignment from SR 140 to SR 99
Mer 8	From East Side Canal Bridge to Westside Blvd. Right Turn	2C	4E	Westside Boulevard Truck Curve Correction and Superelevation	SR 165, Expressway Realignment from SR 140 to SR 99
Mer 9	Westside Blvd. Right Turn to Turner Ave.	2C	4E	Interim Merced River Bridge improvements	SR 165, Expressway Realignment from SR 140 to SR 99
Mer 10	Turner Ave. to Bradbury Rd.	2C	4E	Fowler Rd. Left Turn Channelization to reduce truck delay	SR 165, Expressway Realignment from SR 140 to SR 99
Sta 1	Bradbury Rd. (MER Co.) to SR 99 (STA Co.)	2C	4E	Construct new Lander Ave and SR 99 Interchange to improve truck mobility with signals	SR 165, Expressway Realignment from SR 140 to SR 99; Developer funded upgrade to four lane conventional highway
Key	C = Conventional Highway; E = Expressway; STAA = Surface Transportation Assistance Act				

Concept Rationale

The concept rationale is based on two factors: (1) The minimum LOS tolerable for peak hour conditions, and (2) The type of facility necessary to provide the concept LOS. The concept LOS for routes that are not on the IRRS system is D. SR 165 is not an IRRS route, therefore the concept LOS for the 20 year planning horizon is D. Currently, SR 165 is built to conventional highway design standards, but operates as an expressway in rural context. Contemporary design criteria for new alignments and for capacity increasing undertakings for any new facility will be expressway. However, the concept LOS of D assumes an alignment at free flow speed (40 MPH minimum), signalized segments with interrupted flow often have lower speed limits, and would require in most cases consideration of operational improvements before abandoning an alignment and constructing a bypass.

Urban segments Mer 2, 3 and 10 were identified as deficient in 2014. Mer 2 and 3 form the legs of SR 165 within the City of Los Banos, and are subject to traffic signals at SR 152, B Street and Overland Avenue. Mer 10 runs through the built up 'Main Street' of Hilmar, and has four traffic signals throughout its length. By 2040 it is estimated that these three segments will operate at LOS F.

Rural segments Mer 4, 5, 6, 7, 8, 9, and Sta 1 are all estimated to be deficient by 2040. Growth in traffic volume on these segments is estimated to increase at an annual rate of just over one percent. Although Merced County's population is expected to increase by nine percent by 2040[2] it is unclear that either Los Banos or Hilmar will be growth poles for the period.

Proposed Projects and Strategies

Deficient segments Mer 2, Mer 3, and Mer 4 (from Pioneer Road to Henry Miller Road) will likely be addressed through widening to four lanes on existing alignment, rather than through operational improvements. This action has been proposed as a component of the Los Banos Bypass (LBB)[3], whereby a new alignment of SR 152 would bypass Los Banos to the north, intersecting SR 165 near Henry Miller. The widening was a consideration to better serve increases in local traffic, and was primarily developer driven. Currently this component of the LBB has been dropped from the Merced County Association of Governments (MCAG) Regional Transportation Plan (RTP) because of the unavailability of funding—in part because housing development in Los Banos and vicinity has slowed on account of the recession. Whether the project will move forward and include this improvement is uncertain—it is District 10's understanding that Phase 1 of the Los Banos Bypass will be completed before 2040, but it is unclear whether Phase 2 will be as well, or that funding for a four lane expansion will be available.

Future deficiencies on Segments 5, 6, 7, and 8 may be better addressed by installation of passing lanes rather than widening to four lanes as proposed in the unconstrained Hilmar Bypass. Although the percentage of trucks on the segments is not forecast to increase, the traffic volume is anticipated to increase to more than double the current volume. Although for all purposes, the section is straight with good visibility, so that trucks could maintain travel speeds consistent with posted speed limits, the trucks themselves would impair driver visibility and provide incentive for passing. No constrained or unconstrained projects to address this are included in the current RTP, and none are reported in the District's *Status of Projects* (SOP).

Beyond the Horizon Year (HY) of 2040 is the proposed Hilmar Bypass.[4] This future facility is envisioned to extend from SR 140 to SR 99 with a four lane expressway facility, and would apply to Mer 6, 7, 8, 9, 10, and Sta 1.

The Merced River Bridge (Segment 9) presents issues related to travel time delay. The bridge is 23 feet wide with a length close to a third of a mile, and has an advisory speed limit of 35 MPH. Although mixed use of cars, trucks, and bicycles are permitted upon public streets, the bridge affords no bicycle or pedestrian separation or refuge. There are no projects proposed to replace or modify the bridge prior to 2040.

Mer 9, 10, and Sta 1 comprise the portion of SR 165 north of the Merced River to SR 99. Segment 10 which includes the community of Hilmar constrains performance, and is the origin and destination for trips through the corridor. Two strategies have been put forward to improve this portion of the corridor, construction new alignment bypassing Hilmar, or implementating an access management plan within Hilmar. The Hilmar Bypass has been proposed recently and had a Project Initiation Document (PID) completed several years ago, but is now no longer identified as a constrained project, and is now a Tier II project. Access management may appear more practical, but as SR 165 in Hilmar performs as a local main street, traffic flow is hindered by signalized intersections, on street parking, a high number of access points, and a lack of available future right-of-way for street widening.

[2]Merced Economic Forecast, 2013

[3]*Los Banos Bypass, Supplemental Project Report,* Caltrans, District 10, September 21, 2009; *2014 MCAG, RTP*, pp. 34

[4]*Hilmar Bypass,* 2002; *2014 MCAG RTP*, pp. 34

The absence of a continuous grid network that permits unrestricted north and south travel on other local streets helps to funnel local traffic onto SR 165.

Two operational improvements addressing truck movements are underway. Both the Henry Miller Road (Segments 4 and 5) and Westside Boulevard (Segments 7 and 8) intersections are important east to west local truck routes. District 10 has a project to improve the intersection of Henry Miller Road and SR 165 to better accommodate Surface Transportation Assistance Act (STAA) trucks. Westside Boulevard (local route J-14), as a truck route, roughly follows the southern levee of the Merced River, and is in close proximity to the southern abutment of the Merced River Bridge near its intersection with SR 165. District 10 currently has a project to realign the intersection away from the bridge, and to realign the approaches to the intersection closer to right angles.

One collision reduction project has been programmed at Fowler Boulevard to address conflicts due to left turn movements by the installation of a left turn lane consistent with truck turning templates.

On Segment Sta 1 there is a Tier II project in the Stanislaus County Council of Governments (StanCOG's) RTP to widen SR 165 to four lanes between Simmons Road and SR 99 to improve truck mobility.[5]

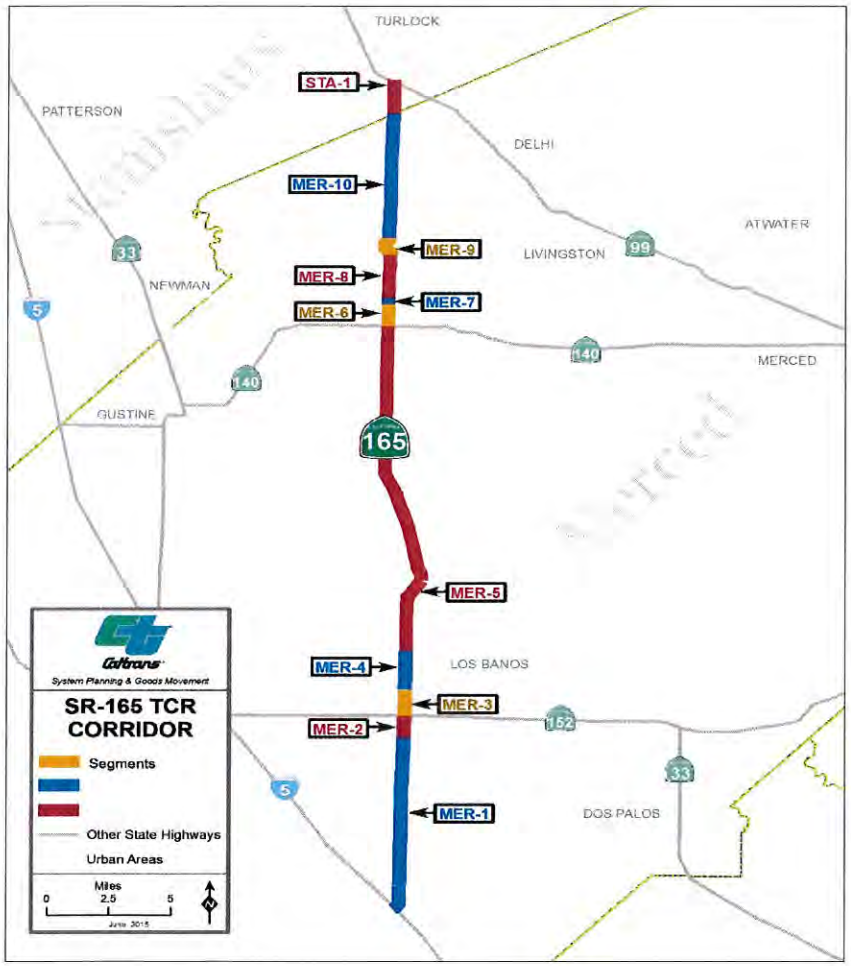
Although there exist several attractors that could make SR 165 a viable corridor for active transportation, particularly for recreational uses, several constraints limit this option. Current planning targets the corridor for a Class II bicycle route, from Hilmar south to Los Banos.[6] For the purposes of sequestering bicycle and pedestrian traffic from motorized traffic, a Class I bicycle path throughout much of the rural portion of the corridor would be infeasible as it would function as an incompatible use within wildlife refuges, rather, further investment in a Class IV bicycle lane is suggested as an alternative. Active transportation use in the corridor near the City of Los Banos is supported by a Class I bike and pedestrian lane that follows the old Southern Pacific rail alignment and provides connection to local facilities. In Hilmar, the situation is a bit more complex. Most of the schools in Hilmar abut SR 165, and are substantial attractors for pedestrian and bicycle traffic. The street network in Hilmar contains numerous cul de sacs, reducing the number of streets available to provide through travel from one end of town to another to almost none beside SR 165. A proposed development of a Class I bicycle trail along a local canal may overcome these impediments for bicyclists and pedestrians.[7]

CORRIDOR OVERVIEW

ROUTE SEGMENTATION

Division of the route followed District 10 practice. Segments conformed to land use planning boundaries, changes in population density (rural versus urban), intersections with other SHS, truck route designation, gradient, change in highway analysis, or increases in ten percent or more in daily, or peak hour traffic volumes. Segmentation resulted in the creation of the ten segments in Merced County, and the one segment in Stanislaus County.

Mer 1 extends from I-5 to Pioneer Road, ending near the Los Banos city limits. Mer 2 continues from Pioneer Road to SR 152 (Pacheco Boulevard). Mer 3 starts at Pacheco Boulevard and ends at Overland Avenue near the Los Banos city limits. Mer 4 begins at Overland Avenue and ends at Henry Miller Road. Mer 5 extends over 12 miles from Henry Miller Road to SR 140. Mer 6, between SR 140 and Third Street, comprises a de-acceleration zone into Stevinson. Mer 7, which includes the 40 MPH zone associated with Stevinson, ends at East Side Canal Bridge. Mer 8, extends from the East Side Canal Bridge to Westside Boulevard and River Road (County Road J-14). Mer 9 continues from County Road J-14, across the Merced River, in an 'S' curve ending at Turner Avenue. Mer 10 extends from Turner Avenue, through several streets and traffic signals in Hilmar, to Bradbury Road near the Stanislaus County line. Sta 1 continues From Bradbury Road, to SR 99 in Turlock.



[5] *2014 StanCOG, RTP,* Appendix K, p. 15
[6] *City of Los Banos Commuter Bike Plan*, MCAG, October, 2002, pp. 42 to 43
[7] *Hilmar Community Plan*, Merced County Planning and Community Development Department, Chapter 2, pp. 2-8

Route Segmentation			
Segment	**Location Description**	**County_Route_Beg. PM**	**County_Route_End PM**
Mer 1	I-5 to Pioneer Rd.	Mer_165_L0.000	Mer_165_7.782
Mer 2	Pioneer Rd. to SR 152	Mer_165_7.782	Mer_165_8.786
Mer 3	SR 152 to Overland Ave.	Mer_165_8.786	Mer_165_9.947
Mer 4	Overland Ave. to Henry Miller Rd.	Mer_165_9.947	Mer_165_11.733
Mer 5	Henry Miller Rd. to SR 140	Mer_165_11.733	Mer_165_26.871
Mer 6	SR 140 to Third Ave.	Mer_165_26.871	Mer_165_27.880
Mer 7	Third Ave. to East Side Canal Bridge	Mer_165_27.880	Mer_165_28.130
Mer 8	From East Side Canal Bridge to Westside Blvd. Right Turn	Mer_165_28.130	Mer_165_30.175
Mer 9	Westside Blvd. Right Turn to Turner Ave.	Mer_165_30.175	Mer_165_31.110
Mer 10	Turner Ave. to Bradbury Rd.	Mer_165_31.110	Mer_165_36.445
Sta 1	Bradbury Rd. (Mer Co.) to SR 99 (Sta Co.)	Mer_165_36.445	Sta_165_1.545

ROUTE DESCRIPTION

SR 165 provides a south to north highway connection between I-5 and SR 99. The facility is conventional highway throughout. A terminal access truck route compliant with STAA, SR 165's primary value to the SHS in District 10 is as a truck route serving local and regional goods movement. Peak daily traffic volumes coincide with agricultural operations in the area. Although three communities are served by the route, few residents employ the SR 165 for interregional work commutes; and there is little evidence for heightened weekend or summer recreational use of SR 165.

SR 165 from SR 152 to SR 140 is a segment of the Extra Legal Load Network (ELLN). The network is a designated system by which, under a traffic permit, trucks 20 feet in height or less may travel across the State.

SR 165 acts as a 'main street' for the community of Hilmar. Future efforts to improve this portion of the route need to conform to the Department's commitment to both "complete streets" and the Smart Mobility Framework.

Route Location:

SR 165 exists only within District 10, in Merced and Stanislaus Counties. The route originates at I-5 and ends at SR 99, it accesses SR 152 and SR 140 along its route, and has some serviceability as a temporary detour during unanticipated traffic closures on those other routes. The highway has the local names Mercey Springs Road from Wolfsen Road southwards, and Lander Avenue from Wolfsen Road north.

SR 165 was not included among the legislative routes that define the original State highways established prior to 1963 as the new route was included as part of the SHS in 1976.

Route Purpose:

SR 165 supports goods movement in District 10. As a truck route, nine percent of all vehicles are trucks on average along with five percent of all vehicles being five or greater axle trucks. As a TA route, SR 165 provides a connection to the National Truck Network (NTN) for major wineries (Gallo), poultry producers (Foster Farms), milk, cheese

and dairy producers (California Milk Advisory Board). Additionally, it provides internal regional and local movement of agricultural goods within western Merced County over the Merced River from farms to processors or market.

Major Route Features:

As an important local and regional truck route, SR 165 performs as an expressway on its rural segments. A TA truck route, the current challenge is upgrading intersections with local truck routes to conform to the federal (STAA) truck turning template to better address "last mile" needs. Many of the weaknesses in agricultural freight network between I-5 and SR 99 in Merced County—inadequate river crossings, unavailable connections to NTN—apply to routes other than SR 165, which make SR 165 an important north to south goods movement corridor.

Route Designations and Characteristics:

Route Designations and Characteristics[8]											
Segment #	**Mer 1**	**Mer 2**	**Mer 3**	**Mer 4**	**Mer 5**	**Mer 6**	**Mer 7**	**Mer 8**	**Mer 9**	**Mer 10**	**Sta 1**
FES	No	No	No	No	No	No	No	No	No	No	No
NHS	Partial	Yes	Yes	Partial	No	No	No	No	No	No	Partial
SHN	No	No	No	No	No	No	No	No	No	No	No
Scenic Highway	No	No	No	No	No	No	No	No	No	No	No
Interregional Road System	No	No	No	No	No	No	No	No	No	No	No
High Emphasis	No	No	No	No	No	No	No	No	No	No	No
Focus Route	No	No	No	No	No	No	No	No	No	No	No
Federal Functional Classification	Minor Arterial	Principal Arterial	Principal Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial
Goods Movement	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Truck Designation	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA
Rural/Urban/ Urbanized	Rural	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural	Urban	Rural
MPO	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	StanCOG
RTPA	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	StanCOG
CMA	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	MCAG	StanCOG
CTC											
Local Agency	Merced County	City of Los Banos;	City of Los Banos	City of Los Banos;	Merced County	Merced County	Merced County	Merced County	Merced County	Merced County	City of Turlock; County of Stanislaus
Tribes											
Air District	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD	SJV APCD
Terrain	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Rolling	Flat	Flat

[8]Acronyms – SHN: Strategic Highway Network; MPO: Metropolitan Planning Organization; RTPA: Regional Transportation Planning Agency; CMA:Congestion Management Agency; CTC County Transportation Commission; SVAPCD: San Joaquin Valley Air Pollution Control

COMMUNITY CHARACTERISTICS

The Cities of Los Banos and Turlock, along with Hilmar are considered an urban area as designated by the Federal Highways Administration (FHWA) in comparison to Stevinson, which is designated part of the remaining rural area. A comparison of population statistics, and population characteristics are presented in the table below:

Population Statistics[9]				
Location	**Merced County**	**Los Banos**	**Stevinson**	**Hilmar**
Population 2010	255,793	35,972	313	5,197
Number of Households 2008-2012	74,496	9,941	91	1,653
Percent of Population below Federal Poverty Line 2008-2012	24.6	24.8	19.25	7.3
Median Income 2008-2012	$43,565	$49,131	$30,424	$52,917
Population Characteristics				
Location	**Merced County**	**Los Banos**	**Stevinson**	**Hilmar**
Racial Composition:	Percentage	Percentage	Percentage	Percentage
White 2012 (a)	81.9	58	72.8	86.1
Hispanic or Latino 2012 (b)	56.1	64.90	42.4	17.6
Black or African American alone 2012 (a)	4.3	3.8	1.2	0.3
Asian American, alone 2012 (a)	8.1	3.2	0.0	1.7
American Indian and Alaska Native alone, (a)	2.5	1.4	0.0	0.4
Native Hawaiian and Other Pacific Islander alone (a)	0.4	0.40	0.0	Not Available
Two or more races 2012	2.9	5.1	2.5	3.0
Key:	(a) Includes persons reporting only one race (b) Hispanics may be of any race, so also are included in applicable race categories			

The Cities of Los Banos and Turlock are the only urban areas accessed by SR 165. Communities served by the route include the communities of Hilmar and Stevinson. Although SR 165 abuts the City of Turlock, SR 165 has little role in serving the resident population as far as interregional travel goes, that the City is not included in the following discussion.

This discussion of community characteristics attempts to frame the segment of the State's population served by a route, and provides a thumbnail sketch of potential services needed. The population of the three communities served by SR 165 represents 15 percent of the total population of the County of Merced. Comparison of the ethnic and racial composition of the three communities to Merced County suggests there is great deal of heterogeneity between the two regions. Most noteworthy is the City of Los Banos—the population enjoys a higher household income compared to the rest of the County, but retains comparable numbers of Latino or Hispanic residents, with

[9]US Census 2010

similar levels of poverty—this possibly suggests a place split between residents in new housing subdivisions and the rest that live in the older community given the percentage of residents in multifamily housing units remains equivalent. Hilmar enjoys a substantially higher median household income, but is far less ethnically diverse. The ethnic composition for Stevinson includes twenty three percent of respondents that indicate a race category other those listed. As Stevinson is noted for having a large Portuguese population, and the twenty three percent may in part reflect households of this ethnicity (this pattern was observed in the California Household Travel Survey as well).

Commuting patterns associated with the three communities are as follows. Twenty eight percent, (4,280) of the 15,291 workers that reside in the City of Los Banos work in Los Banos. It is estimated that two percent, (315) travel to work on SR 165. Overall, the average time spent commuting was 42.7 minutes one way.[10] Most commuters from Los Banos are considered to be interregional commuters employing SR 152, rather than SR 165. Fifteen percent (20) of the 135 workers residing in Stevinson work in Stevinson. Forty five percent are estimated to employ SR 165 (of the estimated 60 commuters, 45 commute north on SR 165, and 15 travel south). The mean travel time for all work commuters was 56.8 minutes one way.[11] Thirty percent, (450) of 1500 workers that reside in Hilmar work in Hilmar. Fifty seven percent travel to work on SR 165 (of the estimated 884 commuters, 834 travel north on SR 165, and 50 travel south). For Hilmar, the mean commute time to work was 23.2 minutes one way.[12] Commute times for workers in Los Banos and Stevinson exceed the average commute for workers in Merced County which is 26 minutes, while workers living in Hilmar enjoyed a shorter mean commute.

LAND USE

Land use along SR 165 is managed by four general plans (GP) and one community plan. This includes Merced and Stanislaus County General Plans', City of Los Banos and Turlock's General Plans', and the Hilmar Community Plan.

Significant traffic generators in the City of Los Banos near SR 165 are the California Dairies production facility, Los Banos Community Center, and the Cinema (to the north) all close to SR 165. In Hilmar, they include the Hilmar High School, and the Hilmar Cheese Company.

Except for the City of Los Banos, and town of Hilmar, much of the land is used for agricultural purposes. There are also considerable recreational and protected lands along the route. Between I-5 and Pioneer Road is the Grasslands Wildlife Management Area (WMA) in Mer 1. Just northeast of Mercey Springs Road from the City of Los Banos is the Los Banos Waterfowl Management Area located east of Mer 4. The San Luis National Wildlife Refuge Complex, and the Great Valley Grasslands State Park are found near the town of Stevinson.

Future growth will depend on the economy. The only recent development near the corridor has been the construction of the Mercey Springs Elementary School in Los Banos near Segment 2, and the expansion of the Hilmar Cheese Company near Segment 10.

There is a need to preserve right of way within the Los Banos city limits. Segments Mer 2, 3 and 4 are proposed for expansion to four lane lanes. Expansion may only be feasible through efforts taken through the encroachment permit process to preserve the undeveloped corridor, along with the local right of way dedication process to acquire right of way for this expansion from later commercial and real estate development.

[10]American Community Surveys 2008-2012
[11]Ibid.
[12]Ibid.

LAND USE	
Segment	**Place Type (Title and Category from Smart Mobility Framework, 2011)**
Mer 1	Rural settlement and agricultural lands (5B)
Mer 2	Corridors (4B)
Mer 3	Corridors (4B)
Mer 4	Rural settlement and agricultural lands (5B)
Mer 5	Protected lands (6)
Mer 6	Rural settlement and agricultural lands (5B)
Mer 7	Rural settlement and agricultural lands (5B)
Mer 8	Protected lands (6), Rural settlement and agricultural lands (5B)
Mer 9	Rural settlement and agricultural lands (5B)
Mer 10	Rural town (5A)
Sta 1	Rural settlement and agricultural lands (5B)

SYSTEM CHARACTERISTICS

For the year 2014, SR 165 is a two lane conventional highway, with the exception of a four lane facility on the highway approaches to the intersection with SR 152 in Los Banos. In rural areas with protected lands, the facility lacks access points, and is able to function as an expressway, but experiences congestion and slowdowns in urban areas due to reduced speed limits and traffic signals.

For the year 2040, the facility expected to meet the forecast needs of the corridor will be a four lane facility. Although the highway design practice is to build new and expanded alignments to an expressway design, design constraints on Segments 2, 3, 4 , and 10 will retain a conventional highway layout—this reflects the existing cross streets intersecting at intervals of less than a mile, and the absence of right-of-way to build a facility to expressway dimensions.

Although Segment 5 is indicated as retaining its original land configuration with passing lanes, the inclusion of passing lanes may apply to Segments 6, 7, 8, and 9.

Improvements to the traffic management system (TMS) on SR 165 are currently conceptual in nature. The conceptual design for SR 165 includes two highway advisory radios (HAR's), one near Los Banos and one near Hilmar; four Extinguishable Message Signs (EMS's) approaching the HAR's; Changeable Message Signs (CMS's) for both directions of travel at five mile intervals; Roadway Weather Information Systems (RWIS's), and Closed Circuit Televisions (CCTV's) at five mile intervals; and Traffic Monitoring Stations (TMS's) at two mile intervals for both directions of travel. Any upgrades are prioritized at crossings with other State highways—these are indicated in the table by the route number.

Improvements after 2040 will include bypasses around Los Banos and Hilmar, resulting in a four lane expressway facility throughout the corridor, as well as an ITS integrated into the Performance Measurement System (PeMs) and TMS. These will include signals at onramps for I-5 and SR 99 in conformance with future ramp metering.

System Characteristics											
Segment #	Mer 1	Mer 2	Mer 3	Mer 4	Mer 5	Mer 6	Mer 7	Mer 8	Mer 9	Mer 10	Sta 1
Existing Facility											
Facility Type	2C	2C and 4C	2C and 4C	2C	2C	2C	2C	2C	2C	2C	2C
General Purpose Lanes	2	2 and 4	2 and 4	2	2	2	2	2	2	2	2
Lane Miles	15.564	2.58	4.344	3.572	30.276	2.018	0.5	4.09	1.87	11.224	3.09
Centerline Miles	7.782	1.004	1.161	1.786	15.138	1.008	0.25	2.045	0.935	5.612	1.545
Managed Lanes											
20-25 Year Facility											
Facility Type	2C	4C	4C	4C	2C with Passing Lanes	4E	4E	4E	4E	4E	4E
General Purpose Lanes	2	4	4	4	4	4	4	4	4	4	4
Lane Miles	15.564	4.016	4.644	7.144	61.104	4.036	1	8.18	3.74	22.448	6.18
Centerline Miles	7.782	1.004	1.161	1.786	15.138	1.009	0.25	2.045	0.935	5.612	1.545
Managed Lanes											
Post 25 Year Facility											
Facility Type	2C	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E
General Purpose Lanes	2	4	4	4	4	4	4	4	4	4	4
Lane Miles	15.564	4.016	4.644	7.144	30.276	4.036	1.000	8.180	3.740	22.448	6.180
Centerline Miles	7.782	1.004	1.161	1.786	15.138	1.009	0.250	2.045	0.935	5.612	1.545
Managed Lanes											
RW Needs	64	64	64	64	64	64	64	64	64	64	64
Transportation Management System Elements											
TMS Elements (BY)	TMS	TMS	TMS		TMS						TMS
TMS Elements (HY)	TMS, EMS, HAR, CMS, RWIS, CCTV Signals	TMS	TMS, EMS, HAR, CMS, RWIS, CCTV	TMS	TMS	TMS, EMS HAR, CMS, RWIS, CCTV	TMS	TMS,	TMS	TMS, CMS	TMS, EMS, HAR, CMS, RWISC CTV Signals

BICYCLE FACILITY

SR 165 is accessible to bicycles throughout its length, as an unsigned Class III bicycle facility. Local mobility plans target an upgrade to a Class II bicycle lane from SR 152 to Bradbury Road.[13] No Class II bicycle lane is proposed for the portion of SR 165 in Stanislaus.[14] A Class I bicycle path is proposed to conform to Segment 2.[15]

Although it is desirable to improve bicycle travel adjacent to SR 165, within the town of Hilmar a different approach may be necessary. Within the Hilmar, Lander Avenue (SR 165) serves as the only continuous north to south street, and serves as the primary travel path to several schools. Development of a Class II bicycle lane may not be desirable compared to development of an alternative bicycle trail and lane system that keeps bicycles away from SR 165. The Hilmar Community Plan proposes a trail system that would follow the Turlock Irrigation District Lateral No.7 from Echo Street that may serve this purpose.[16]

An evaluation of bicycle conditions was performed for all segments using Highwaty Capacity Software (HCS) modules for two lane highways or for ArtPlan 2012. It was found that current conditions resulted in a bicycle LOS

of F for all segments, which without targeted improvements will remain until the HY of 2040. Currently the Highway Design Manual (HDM) identifies a design standard that acceptable bicycle LOS be equivalent to automobile concept LOS. Concept bicycle LOS for the corridor is D, and indicates a need to enhance the corridor for bicycle needs.

With the development of the Class I facility on Segment 2, there may arise a need to provide an improved pedestrian and bicycle crossing at the intersection of SR 165 and SR 152 (Pacheco Boulevard) to connect to the Class I rail to trail facility on the old Southern Pacific Railroad alignment.[17]

Governor Brown recently signed Assembly Bill 1193, which includes protected bicycle lanes, or cycle tracks—these facilities are an upgrade to Class II bicycle lanes, and may become a future consideration for locations where Class II facilities have been proposed.

Existing Bicycle Facility							
Segment	Post Mile	Location Description	Bicycle Access Prohibited	Facility Type	Paved Shoulder Width (ft.)	Facility Description	Posted Speed Limit
Mer 1	L 0.00 to 7.786	I-5 to Pioneer Rd.	No	Class III	0 to 8	Conventional Highway	55 MPH
Mer 2	7.786 to 8.786	Pioneer Road to Pacheco Blvd.	No	Class III	4.	Conventional Highway	25 MPH
	8.786	Rail to Trail Start at SR152	No	Class I		Conventional Highway	
Mer 3	8.786 to 9.947	Pacheco Blvd. to Overland Rd.	No	Class III	2 to 4.	Conventional Highway	35 MPH
	~ 0.9 mile East of PM 9.469	Rail to Trail end point at Second and H Strs	No	Class I		Conventional Highway	35 MPH
Mer 4	9.947 to 11.733	Overland Ave. to Henry Miller Rd.	No	Class III	4.	Conventional Highway	50 MPH
Mer 5	11.733 to 26.871	Henry Miller to SR 140	No	Class III	4	Conventional Highway	55 MPH
Mer 6	26.871 to 27.880	SR 140 to Third Ave.	No	Class III	4	Conventional Highway	40 MPH
Mer 7	27.880 to 28.130	Third Ave. to East Side Canal Bridge	No	Class III	4	Conventional Highway	40 MPH
Mer 8	28.130 to 30.175	East Side Canal Bridge to Westside Blvd. Rt.	No	Class III	4.	Conventional Highway	55 MPH
Mer 9	30.175 to 31.110	Westside Blvd. Rt. to Turner Ave.	No	Class III	4.	Conventional Highway	55 MPH
Mer 10	31.110 to 36.445	Turner Ave. to Bradbury Rd.	No	Class III	4 to 12.	Conventional Highway	25 to 55 MPH
Sta 1	36.445 to 1.545	Bradbury Rd to SR 99	No	Class III	4 to 8.	Conventional Highway	55 MPH

[13] *Merced County Regional Bicycle Transportation Plan*, MCAG, October, 2008, pp.25-28
[14] *2013 StanCOG Non-Motorized Transportation Master Plan*
[15] *City of Los Banos Commuter Bike Plan*, MCAG, October, 2002, pp.42-43
[16] *Hilmar Community Plan*, Merced County Planning and Community Development Department, Chapter 2, pp. 2-8
[17] *City of Los Banos Commuter Bike Plan*, MCAG, October, 2002, Figure 11, Existing and Potential Facilities

PEDESTRIAN FACILITY

Pedestrian Facility						
Segment	Post Mile	Location Description	Ped.. Access Prohibited	Sidewalk Present	Facility Description	Role
Mer 1	0.000-8.639	I-5 to Pioneer Rd.	No	No	No sidewalks	N/A
Mer 2	8.639 to 8.786	Sidewalk from Savemart to Pacheco Blvd. on West Side	No	Yes	Sidewalk	Local Travel
	8.019 to 8.136	Savemart on south side, to Berkeley Dr.	No	Yes	Sidewalk	Local Travel
	8.600 to 8.786	Kmart Shopping Center to Pacheco Blvd. on East Side	No	Yes	Sidewalk	Local Travel
	8.786	Rail to Trail Starting point	No	Yes	Trail	Tourism Shopping Recreational
Mer 3	PM 9.469	Rail to Trail End Point	No	Yes	Trail	Tourism Shopping Recreational
	9.469	East B St. on East Side	No	Yes	Crosswalk (four way)	Local Travel
	9.947	Overland Ave.	No	Yes	Crosswalk (four way)	Local Travel
	9.947 to 10.261	Overland Ave. to Cardiff St. on East Side	No	Yes	Sidewalk	Local Travel
	10.680 to 10.931	Quail Rd. to Del Rio Dr. on West Side	No	Yes	Sidewalk	Local Travel
Mer 4 to 9	10.931 to 32.940	Overland Ave. to Dayton Ave.	No	No	No sidewalks	N/A
Mer 10	32.940 to 33.864	Dayton Ave. to American Ave. partial on high school side	No	Yes	Sidewalks	High School
	32.940	Dayton Ave.	No	Yes	Crosswalk (Two Way)	Local Travel
	33.084	Echo St.	No	Yes	Crosswalk (Two Way)	Local Travel
	33.220	Campbell St.	No	Yes	Crosswalk (Two Way)	Local Travel
	33.290	Falke St.	No	Yes	Crosswalk (One Way)	Local Travel
	33.365	Bloss Ave.	No	Yes	Crosswalk (Four Way)	Local Travel
	33.616	First St.	No	Yes	Crosswalk (Four Way)	Local Travel
	33.864	American Ave.	No	Yes	Crosswalk (Four Way)	High School
Sta 1	1.324 to 1.545	East Glenwood Ave. to beyond SR 165 limits on East Side	No	Yes	Sidewalks	Local Travel

Pedestrian facilities are present in Segments 2, 3, 10, and a portion of Sta 1. Throughout Merced County sidewalks are intermittent with a need to fill gaps, crosswalks appear present at all signalized intersections, but may be lacking at stop controlled side streets. Within Stanislaus County, sidewalks are continuous with crosswalks at all intersections.

Evaluation of pedestrian LOS was performed for the Segments 2, 3 and 10 with the HCS module ArtPlan. For Segments 2 and 3 (in Los Banos) for 2014 the LOS was C, and in the HY of 2040 the LOS was E. For Segment 10 (in Hilmar) for 2014 the LOS was F, and would reamain so out to the HY of 2040 if no facility improvements are undertaken.. Currently, the HDM reports that an acceptable pedestrian LOS be at least equivalent to automobile concept LOS. Concept pedestrian LOS for the corridor is D, and indicates a need to enhance the corridor for both contemporary and future pedestrian needs.

TRANSIT FACILITY

Transit Facility													
Segment	Mode & Collateral Facility	Name	Route End Points	Ridership (mo.)	Headway	Operating Period (week days)	ITS & Technology	Stations		Amenities	Bikes Allowed on Transit	Location Description	# Parking Spaces
								Cities	Post miles				
Mer 1	No transit service or stops												
Mer 2	Local Bus	LB1	PM 7.782 to PM 8.786	1,483	50 min.	7:27 a.m. to 9:12 p.m.	GPS real time			Yes	Yes	Berkeley Rd. to SR 152	~50
Mer 3	Intercity Bus	LB	PM 8.7.86	2,810	120 min	5:38 a.m. to 9:20 p.m.	GPS real time		PM 8.786	Yes	Yes	SR 152	~50
	Local Bus	LB2	PM 8.786 to PM 9.947	771	110 min.	6:17 a.m. to 9:51 p.m.	GPS real time			Yes	Yes	SR 152 to Overland Ave.	~50
	Deviated	Hilmar Link		50	Once Daily	6:40 a.m. to 6:16 p.m.						Pacheco Blvd.	~50
Mer 4	Local Bus	LB2	PM 9.947 to PM 10.862	771	110 min.	6:17 a.m. to 9:51 p.m.	GPS real time			Yes	Yes	Overland Ave. to St. Francis Way	N/A
Mer 5 to 6	No transit service or stops												
Mer 7	Deviated	Hilmar Link	PM 27.880	50	Once Daily	7:07 a.m. to 4:45 p.m.	GPS real time			Yes	Yes		
Mer 8 to 9	No transit service or stops												
Mer 10	Deviated	Hilmar Link	PM 33.348 and PM 34.363	50	Once Daily	6:40 a.m. to 6:16 p.m.	GPS real time			Yes	Yes	Hilmar Cheese Factory	~50
Sta 1	Deviated	Hilmar Link Turlock		50	Once Daily	7:38 a.m. to 5:16 p.m.	GPS real time			Yes	Yes	Turlock, Monte Vista & Crowell Rd.	~50

Transit services in the SR 165 Corridor include both fixed routes and deviated fixed routes. Segments 2, 3, and 4 (in Los Banos) are served by two intermittent transit routes. The corridor from SR 152 into Turlock is served by a paratransit service that is the only transit connection for Hilmar.

Evaluation of transit needs was performed with ArtPlan for Segments 2, 3, and 10. For 2014, Segments 2 and 3 have a transit LOS of C, while for Segment 10 the transit LOS is D. Although the HDM does not provide a standard for a concept transit LOS, as it does for bicycle or pedestrian LOS, it would appear that current transit service conditions are adequate for the corridor, but may require an increase the number of buses during high demand times by the HY of 2040.

FREIGHT

Freight						
Segment	Facility Type/Freight Generator	Location	Mode	Name	Major Commodity Industry	Comments or Issues
Mer 1	Farmland	various	Truck	various	Cash Crops or Dairy	
Mer 2	Dairy Processing Plant	1155 E. Pacheco Blvd., Los Banos	Truck	California Dairies Inc.	Milk Products	Major producer of dried milk
Mer 3	N/A	N/A	N/A	N/A	N/A	Segment serves housing
Mer 4	Tomato Processing Plant	9950 Ingomar Grade, Los Banos	Rail	Ingomar Packing Co.	Canned Tomatoes And Tomato Paste	
	Tomato Processing Plant	13448 Volta Rd., Los Banos	Rail	Morning Star Packing Co.	Canned Tomatoes And Tomato Paste	
Mer 5 to 9	Farmland	various	Truck	various	Cash Crops, Dairy, Poultry	
Mer 10	Cheese Processing and Distribution	SR 165 PM 34.360; 9001 Lander Ave., Hilmar	Truck	Hilmar Cheese Company	Cheese Products	
	Gallo Winery Processing and Distribution	18000 River Road, Livingston, CA	Truck	E. J. Gallo Winery	Wine	
Sta 1	Poultry Meat Processing Plant	500 F. St. Turlock; North of SR 165 PM 1.545	Truck	Foster Farms	Poultry	
	Egg production facility	10218 Lander Ave., Turlock, CA	Truck	Gemperle Farms	Eggs	
	Dairy Production Plant	501 S. Tegner Rd. Turlock, CA 95380	Truck	California Dairies	Dairy Products – Butter, Milk Powders, Crème, and Condensed	
	Dairy Production Plant	Turlock, CA	Truck	Hilmar Cheese Company	Milk Powder	New Turlock Facility

SR 165 supports regional goods movement in Merced County by connecting local agricultural transport to processing facilities and production facilities at Turlock, Hilmar, and Los Banos. Truck transport is the dominant mode of goods movement along the corridor, as links to rail and air transport are non-existant. The lack of an origin and destination study of goods movement in District 10 makes claims as to the character of freight movement on the secondary highways such as SR 165 provisional. Segment 9 is thought to be an important constriction on truck travel time due to the Merced River Bridge's approaches and narrow lanes.

The cities of Los Banos, Hilmar, and Turlock possess industries associated with the processing of agricultural goods—particularly poultry and dairy products. As SR 165 connects these two cities, the local road network provides the means to move unprocessed milk, poultry, eggs, tomatoes, cotton, grapes to these two location, or intervening facilities located on or adjacent to SR 165 (or to nearby tomato processors located in Volta or Gustine).

Based upon geography and connections to major goods movement corridors, SR 165 appears to have a smaller role in the interregional transport of goods compared to other State highways in the region. SR 33 and SR 59 provide north to south corridors as well, and are closer to NTN routes I-5 and SR 99 than SR 165. However,

although SR 33 supports the ELLN throughout much of the San Joaquin Valley, the network diverges onto SR 165 over to SR 140 to bypass substandard bridges south of Gustine on SR 33, while SR 59 does not originate at I-5 as does SR 165, but links to SR 152.

The corridor currently meets the design standards for TA truck routes compliant with STAA. Needs are to improve intersections with local truck routes to ensure safe truck turning—at I-5, at Henry Miller, and at Westside Boulevard (Local route J 14). Programmed and candidate projects to address these upgrades are expected to be complete before 2040.

ENVIRONMENTAL CONSIDERATIONS

Environmental Considerations										
Segment	Cultural Resources	Flood-plain	Hazar-dous Materials	Naturally Occurring Asbestos	Air Quality				Waters and Wetlands	Special Status Species
					Ozone	PM		CO		
						2.5	10			
Mer 1	Moderate	No	No	No	Nonattainment	Nonattainment	Attainment	Attainment	No	Moderate
Mer 2	Moderate	No	No	No	Nonattainment	Nonattainment	Attainment	Attainment	No	Moderate
Mer 3	Low	No	No	No	Nonattainment	Nonattainment	Attainment	Attainment	No	Moderate
Mer 4	Moderate	No	No	No	Nonattainment	Nonattainment	Attainment	Attainment	No	Low
Mer 5	High	Yes	Yes	Yes	Nonattainment	Nonattainment	Attainment	Attainment	Yes	High
Mer 6	High	Yes	Yes	No	Nonattainment	Nonattainment	Attainment	Attainment	Yes	High
Mer 7	High	Yes	Yes	No	Nonattainment	Nonattainment	Attainment	Attainment	Yes	High
Mer 8	High	Yes	Yes	No	Nonattainment	Nonattainment	Attainment	Attainment	Yes	High
Mer 9	High	Yes	Yes	No	Nonattainment	Nonattainment	Attainment	Attainment	Yes	High
Mer 10	Low to Moderate	Yes	Yes	No	Nonattainment	Nonattainment	Attainment	Attainment	Yes	Low to Moderate
Sta 1	Low	No	No	No	Nonattainment	Nonattainment	Attainment	Attainment	No	Low

SR 165 is within a floodplain of reclaimed Tulare Lake, the San Joaquin River, and the Merced River. In this context, issues related to wetlands, waters of the US, waters of the State, and fish passage are likely to be concerns affecting project cost and project schedule. Associated with a riparian landscape are species of concern, and interactions with wildlife management agencies—both State and federally managed. There is a high potential for highway projects in the corridor to meet Section 4f of the federal Transportation Action of 1966 requirements for evaluation and mitigation.

CORRIDOR PERFORMANCE

Three performance measures are included in the Corridor Performance table—LOS, delay, and vehicle miles traveled (VMT). Historically, the metric employed by Caltrans for measuring the performance of a highway was its LOS. Recently, it has been replaced by delay or VMT. These three performance parameters measure different elements of the corridor, and together give a better sense of how a corridor performs. In a statistical sense, LOS measures the mean performance of a corridor, while delay measures the variation. In other words, a corridor that has a LOS of C suggests a well operating corridor, but if in a month's time it generated twenty thousand hours of delay, one would say that as a commuter route it was not very reliable. VMT addresses a different metric altogether—one associated with sustainability and system management—corridors with higher VMT are ones that require maintenance and upkeep on a schedule more frequent than corridors with lower VMT, and these same corridors would generate greater volumes of greenhouse gases.

LOS employs an ordinal and qualitative measure of traffic congestion that relies upon both subjective, though repeatable observations of congestion, as well as the quantifiable ratio of the volume of traffic to the full capacity of a highway lane at a particular speed (v/C). Congestion might be better measured by the underlying quantitative ratio of v/C. Because of this and its ordinal characteristic, LOS best serves as a comparison to a performance standard such as concept LOS, for how well a corridor is meeting driver needs, rather than as a performance measure as the v/C might be quite variable between two segments though both share the same LOS.

Delay compares how long it takes to travel a corridor under congested conditions throughout the day and compares the difference with travel under uncongested conditions. From this one can compare total daily delay and total annual delay.

As no capacity changing actions or larger developments are proposed for the SR 165 corridor by the next planning update, use of any performance measure would possess little value. With the corridor's population growth being essentially static, there should be no change in traffic volume. Between the 2014 and 2040, the population of Merced County is forecast to increase by eight percent or produce a growth rate of 0.31 % per year. This increase should produce an increase in traffic volumes—however, the forecast increase in traffic volumes according to the 2011 Transportation Demand Model (TDM) appear to generate an increase in traffic volume over that time that ranges from 0.23 % to 0.63 %, with most of growth rates being greater than 0.31 %.

Bottlenecks may be considered where a highway with a posted speed of 55 MPH has conditions of traffic speeds at 35 MPH or less, at a specific locale, and are subject to recurrence throughout the year. No bottlenecks are reported to exist on the corridor[19], however, there are no PeMs stations in the corridor to record them. Most of the more highly congested areas on the corridor occur where the posted speed limit is below 55 MPH. For the corridor, congestion is likely highest at the Hilmar High School when the commuter traffic is in conflict with the school drop off and pick up times during the school year.

Peak daily traffic volumes in corridors with a large volume of interregional traffic typically occur before the start of the workday and after its conclusion, and are graphically represented by a bimodal peak with a strong directional component. This characteristice of daily traffic volumes is best expressed on Segments 3, and Sta 1. For all other segments on SR 165, where local traffic dominates, the peak hour often is displaced to times coincident with the start and end of the school day. During the summer, recreational traffic volumes may result in peak hours displaced to the weekends. All three of these factors are present in the SR 165 peak hour records.

Corridor Performance											
Segment #	**Mer 1**	**Mer 2**	**Mer 3**	**Mer 4**	**Mer 5**	**Mer 6**	**Mer 7**	**Mer 8**	**Mer 9**	**Mer 10**	**Sta 1**
Basic System Operations											
Average Annual Daily Traffic (AADT) Base Year (BY)	2,200	14,700	14,200	11,900	6,200	6,500	8,500	8,100	9,500	16,700	21,400
AADT (HY)	3,700	26,500	23,000	20,900	23,400	40,500	40,000	38,500	48,000	40,000	52,000
LOS Method	HighPlan HCS 2 Lane	Artplan 2012	Artplan 2012	HighPlan HCS 2 Lane	HighPlan HCS 2Lane	HighPlan HCS 2 Lane	HighPlan HCS 2 Lane	HighPlan HCS 2 Lane	HighPlan HCS 2 Lane	Artplan 2012	HighPlan HCS 2 Lane
LOS Base Year (BY)	A	F	F	D	C	C	C	D	E	F	D
LOS (HY)	B	F	F	E	E	F	F	E	F	F	F
LOS Concept	2C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C
VMT (BY)	17,120	14,759	16,486	21,253	93,855	6,559	2,125	16,565	8,883	93,720	33,063
VMT (HY)	28,793	23,092	26,703	37,327	354,229	40,865	10,000	78,733	44,880	224,480	80,340
Truck Traffic											
Average Annual Daily Truck Traffic (AADTT) (BY)	200	1,150	1,200	1,100	550	600	730	730	840	1,200	1,750
Total Average Annual Daily Truck Traffic (AADTT) (HY)	320	2,100	1,900	2,000	2,100	3,800	1,800	3,500	4,200	2,750	4,200
Total Trucks (% of AADT) (BY)	9.0	7.8	8.4	9.2	8.8	9.2	8.6	9.0	8.8	7.2	8.2
Total Trucks (% of AADT) (HY)	8.6	7.9	8.3	9.6	9.0	9.4	4.5	9.0	8.8	6.9	8.1
5+ Axle Average Annual Daily Truck Traffic (AADTT) (BY)	130	850	730	670	350	360	480	460	550	780	1,250
5+ Axle Average Annual Daily Truck Traffic (AADTT) (HY)	230	1,550	1,200	1,200	1,350	2,400	2,300	2,200	2,850	1,950	3,100
5+Axle Trucks (as% of AADT) (BY)	5.9	5.8	8.5	5.6	5.6	5.4	5.6	5.7	5.8	5.2	5.8
5+Axle Trucks (as% of AADT) (HY)	8.6	5.8	5.2	5.7	5.8	5.9	5.8	5.7	5.9	4.9	6.0
Bottlenecks Data											
Existing	No	No	Yes	No	No	No	No	No	Partial	Yes	No
Location			Pacheco Blvd.						Merced River	Bloss Ave.	
Bottleneck Queue											
Bottleneck Causality			Pacheco Blvd.						Bridge	High School	
Peak Hour Traffic Data											
Peak Period Length:											
Peak Hour Direction:	NB	NB	SB	SB	NB	NB	NB	NB	NB	NB	NB
Peak Hour Time of Day:	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM
Peak Hour VMT (BY):	1,712	1,476	1,659	2,125	9,386	656	213	1,656	888	9,372	3,306
Peak Hour VMT (HY):	2,879	2,309	2,670	3,733	35,420	4,086	1,000	7,873	4,488	22,440	8,034
Peak Hour Avg. Speed:											
Peak Hour Vehicle Hours of Delay (BY):											
Peak Hour Vehicle Hours of Delay (HY):											

KEY CORRIDOR ISSUES

- SR 165 is an important goods movement corridor in Merced County. As a TA route, it affords transport of local agricultural products across the Merced River, without need to access the major corridors of I-5 or SR 99.

- By 2035, SR 165 will be deficient between SR 152 and SR 99. There are no constrained projects to address this deficiency. The Hilmar Bypass, an unconstrained project with an estimated cost of $130,000,000, is proposed in the current RTP to address the portion of SR 165 from SR 140 to SR 99. This project is expected to address operational issues associated with Hilmar and the Merced River Bridge. Passing lanes are suggested for the portion south of SR 140.

- SR 165 is an environmentally sensitive corridor. Lands potentially subject to Section 4(f) of the federal Transportation Act of 1966 requirements are found on the corridor.

CORRIDOR CONCEPT

CONCEPT RATIONALE

The concept rationale for SR 165 is as a mixed facility corridor—retaining conventional highway configuration within the Los Banos city limits and in the town of Hilmar, and expressway on all other segments. Concept LOS for the corridor is D, consistent with SR 165 not being included in the IRRS. Upgrade of segments to four lanes depend upon consistency of future forecasts—currently the growth rates reported exceed the population growth of Merced County forecast for the period of 2014 to 2035.

As of fall 2014, there are no programmed capacity increasing projects for SR 165 in the District 10 Schedule of Projects, and there are no fully or partially funded fiscally constrained projects in the MCAG RTP. The strategy to achieve concept LOS for segments north of SR 140 (Segments 6 through 10 and Sta 1) can only be attained through the unfunded Tier II project, the Hilmar Bypass. For segments north of Los Banos and south of SR 140 (Segments 4 and 5) installation of passing lanes are proposed as an operational solution. The only capital improvement project tied to funding commitments and scheduled for construction before 2035 is the interchange replacement project at SR 99 and SR 165.[18]

Specific improvements for SR 165 as a goods movement corridor rely upon operational improvements at intersections with truck routes—these may range from increasing left turn lane storage, right turn pockets, and improved turning radii consistent with federal or California truck templates. Although data is unavailable, the Merced River Bridge likely constrains traffic due to its advisory speed limit of 35 MPH. Widening the bridge to include wider lanes and shoulders may improve truck movements (given traffic volumes, it may make sense to restrict bicycle and pedestrian use on the bridge, and provide a parallel and separate facility to serve those users).

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES					
Seg.	**Description**	**Location**	**Source**	**Purpose**	**Implementation Phase**
Mer 1					
Mer 2-4					
Mer 5	STAA Turning Radius Improvements at Henry Miller Rd.	Henry Miller Rd. to SR 140 PM 11.733 to PM 26.871	SHOPP	Operational	Long Term
Mer 6 - 7					
Mer 8	Westside Blvd. Curve Correction	From East Side Canal Bridge to Westside Blvd. Right Turn PM 28.130 to PM 30.175	SHOPP	Operational	Short Term
Mer 9					
Mer 10	Fowler Ave. Left Turn Channelization	Turner Ave. to SR 99 (portion between PM 31.110 to PM 36.445)	SHOPP	Operational	Short Term
Sta 1	Lander Ave. Interchange replacement (StanCOG)	Bradbury Rd. (Mer Co.) to SR 99 (Sta Co.) Mer PM 36.445 to Sta PM 1.545	CMAQ, STIP	Operational	Long Term

[18] 2014 StanCOG, RTP, Appendix K, p. 3

PROJECTS AND STRATEGIES TO ACHIEVE CONCEPT

PROJECTS AND STRATEGIES TO ACHIEVE CONCEPT (continued)					
Seg.	**Description**	**Location**	**Source**	**Purpose**	**Implementation Phase**
Mer 1	I-5 Interchange STAA ramp improvements	I-5 and SR 165 PM L 0.000	SHOPP	Improve Mobility, Safety and Accessibility for STAA Trucks	Long Term
Mer 2	Widen to Four Lane Conventional Highway	Pioneer Rd. to SR 152 PM 7.782 to PM 8.787	Unfunded	Improve Mobility for Trucks	Long Term
Mer 3	Widen to Four Lane Conventional Highway	SR 152 to Overland Ave. PM 8.786 to PM 9.947	Unfunded	Improve Mobility	Long Term
Mer4	Widen to Four Lane Conventional Highway	Overland Ave. to Henry Miller Rd. PM 9.947 to PM 11.680	Unfunded	Improve Mobility	Long Term
Mer 5	Develop passing lanes and include truck enhancements.	Henry Miller Road to SR 140 PM 11.680 to PM 26.871	Unfunded	Improve Mobility and Accessibility	Long Term
Mer 6	Analyze SR 140 intersection for STAA improvements	SR 140 to Third Ave. PM 26.871 to PM 27.880	SHOPP	Improve Safety and Mobility for STAA trucks	Short Term
	Accelerate SR 165 Realignment between SR 140 and SR 99		Unfunded	Improve Mobility for Trucks and Interregional Travel	Long Term
Mer 7	Accelerate SR 165 Realignment between SR 140 and SR 99	Third Ave. to East Side Canal Bridge PM 27.880 to PM 28.130	Unfunded	Improve Mobility for Trucks and Interregional Travel	Long Term
Mer 8	Accelerate SR 165 Realignment between SR 140 and SR 99	From East Side Canal Bridge to Westside Blvd. Right Turn. PM 28.130 to PM 30.175	Unfunded	Improve Mobility for Trucks and Interregional Travel	Long Term
Mer 9	Accelerate SR 165 Realignment between SR 140 and SR 99	Westside Blvd. Rt. to Turner Ave. PM 30.175 to PM 31.110	Unfunded	Improve Mobility for Trucks and Interregional Travel	Long Term
	Interim Merced River bridge improvements for truck mobility		Unfunded		
	Westside Blvd. Curve Correction		Unfunded	Improve Safety and Mobility for Trucks	Short Term
Mer 10	Accelerate SR 165 Realignment between SR 140 and SR 99	Turner Ave. to SR 99 (portion between PM 31.110 to PM 36.445	Unfunded	Improve Mobility for Trucks and Interregional Travel	Long Term
	Develop and implement access management plan			Improve Mobility	Mid Term
Sta 1	SR 99 STAA Ramp Improvements	Improve NB and SB on/off ramps at SR 99 PM 1.545	SHOPP	Improve Mobility, Safety and Accessibility for STAA trucks	Long Term
	Four Lane Conventional Highway from Simmons Rd. to SR 99	Simmons Rd. to SR 99 PM 1.239 to PM 1.545	CMAQ, Dev. Fees, STIP	Improve Mobility, Safety and Accessibility for STAA trucks	
	Accelerate SR 165 Realignment between SR 140 and SR 99	Bradbury Rd. (MER Co.) to SR 99 (STA Co.) PM 36.445 to PM 1.545	STIP	Improve Mobility for Trucks and Interregional Travel	

APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS

TERMS

Access Management Plan – A plan developed to minimize access points along a state highway to improve performance.

Annual Average Daily Traffic (AADT) -- the total traffic volume on a given highway or segment in a year divided by 365. The year is from October 1st through September 30th. Raw traffic counts are obtained through a sampling program of highway locations throughout the District, rather than continuous sampling throughout the year (though this may not be accurate for PeMS stations that continuous monitor traffic volumes). These counts are adjusted to compensate for daily and seasonal variability compared to previous records.

Base year – the initial year of analysis, usually, the year that recent data is available.

Bikeways:

Class I (Bike Path) – a separate travel right of way for the exclusive use of bicycles, pedestrians, and possibly equestrians.

Class II (Bike Lane) – a lane within a shared right of way for use of bicycles. Usually separated from motorized vehicle traffic by striping, and may permit merging at approached to intersections for right turns.

Class III (Bike Route) – shared right of way between motorized vehicles and bicycles, may have wide shoulders to accommodate separation of the two modes, or may be signed to alert motorists to shared use.

Class IV - Bike facility accompanied by a cement wall as a separation of bicyclists from traffic.

Bottlenecks – a location where the carrying capacity is substantially less than elsewhere on a route. Often this occurs with a lane reduction, or excessive merging and weaving, or driver distraction, or a surge in demand, or a combination of these and other factors.

California Transportation Plan (CTP) – a statewide, long-range transportation plan with a minimum 20-year planning horizon intending to address both future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve a collective vision for California's future, statewide, integrated, multimodal transportation system. The CTP is prepared in response to federal and State requirements and is updated every five years.

Capacity – the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Centers – An urban area for small cities that are just becoming urbanized.

Centerline Miles – The length of a highway facillty or segment measured at its median.

Concept LOS – the minimum acceptable LOS over the next 20-25 years.

Conceptual Project – an action or a project that needed to maintain mobility or serve multimodal users, but is not included in a fiscally constrained plan and is not programmed. It could be included in a General Plan or in the unconstrained section of a long-term plan.

Conventional Highway – a highway classification with at grade intersections.

Corridor – a broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as informational purposes and not analyzed in the TCR.

Expressway – a highway classification with some level of restriction on having at grade intersections.

Development Fees – fees that are provided by a developer impacting the number of trips generated by a development project such as a housing subdivision that they are constructing.

Facility Concept – describes the future highway facility and the strategies that may be needed to be deployed within the next 20-25 years. This can include capacity increasing, State highway, bicycle facility, pedestrian facility, transit facility, non-capacity increasing operational improvements, new managed lanes, conversion of existing managed lanes to another managed lane type or characteristic, TMS field elements, TDM and incident management.

Facility Type – refers to a highway as being either a freeway, expressway, conventional, or a one-way city street.

Freight Generator – any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

Freeway – a fully access restricted facility that allows high traffic speeds of 55 MPH or higher.

Headway – the time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

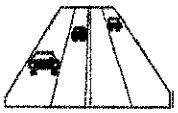
Horizon Year – The year that the future (20-25 years) data is based on.

Intermodal Freight Facility – a location where different transportation modes and networks (air, marine, rail, truck) interconnect and allow freight to be transferred (trans loaded) from one mode to another.

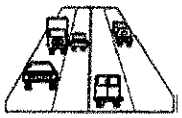
Intelligent Transportation System (ITS)—an integrated network of communications-based information and electronics technologies to collect real time traffic information, process it, and take appropriate actions. The intended outcomes are to improve transportation safety, mobility and to enhance worker productivity by reducing travel delay.

Lane Miles: The total distance of each mixed use travel lanes in a highway segment, usually obtained by multiplying the centerlane miles by the total number of lanes.

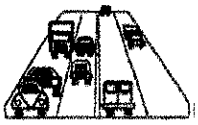
Level of Service (LOS) -- a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:



LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.

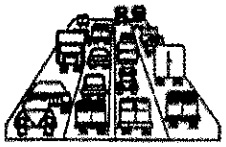


LOS B is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.



LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.

LOS D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.



LOS E reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.

LOS F a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Multi-modal –the different modes of commuting within a travel corridor (automobile, subway, bus, rail, bicycle, pedestrian, or air).

Managed Lanes – are from highway facilities managed with operational strategies such as high occupancy vehicle (HOV) lanes, ramp – metering and high occupancy toll (HOT) lanes.

Park-and-Ride – location where commuters park their personal vehicles and continue their trip by carpool, vanpool, or transit.

Peak Hour – the hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – the hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Peak Period – the part of day during which traffic congestion is at its greatest. Typically, this happens twice a day, in the morning and in the evening during the time most people commute to work or return (rush hour). Peak Period is defined for individual routes, not a District or statewide standard.

Performance Measures – are measures of the speed, safety, accessibility, efficiency in the operation and management of a state highway system.

Planned Project – a planned improvement or action is a project in a fiscally constrained section of a long-term plan, such as an approved Regional or Metropolitan Transportation Plan (RTP or MTP), Capital Improvement Plan, or measure.

Post mile – a measured location on a route within the State Highway System. Typically measured on routes from county lines, the values of a post mile will increase from south to north, or west to east. When a section of road is relocated, new post miles (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the reminder of the route within the county will remain unchanged.

Programmed Project – an improvement or action identifying funding amounts by year, and included in short term project funding documents such as the State Transportation Improvement Program (STIP) or the State Highway Operation and Protection Program (SHOPP). Programming refers to projects permitted for expenditure of monies allocated for project development and implementation (are subject to oversight by project managers).

Protected lands could be Section 4(f) land or other lands recognized for their natural, ecological and or cultural values that are managed by an array of different federal, state, tribal and local level authorities.

Railroads:

Class I – a carrier having annual operating revenues of $250 million or more. This class includes the nation's major railroads. In California, Class I railroads include Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railway (BNSF).

Class II – a carrier having annual operating revenues between $250 million and $20 million. Class II railroads are considered mid-sized freight-hauling railroad in terms of operating revenues. They are considered "regional railroads" by the Association of American Railroads.

Class III – a carrier having annual operating revenues of $20 million or less. The typical Class III is a short line railroad, which feeds traffic to or delivers traffic from a Class I or Class II railroad.

Route Designation – refers to design standards applicable to a route based upon legislative intent. Typical legislative designations include but National Highway System (NHS), Interregional Route System (IRRS), Freeway and Expressway System, and Scenic Highway System.

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density as determined by FHWA.

Section 4(f) Land – Land that is protected by federal lands under certain conditions for development.

Segment – A portion of a facility between two points.

System Operations and Management Concept – Describe the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (aux. lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or characteristic (e.g. HOV land to HOT lane), TMS Field Elements, transportation demand management, and incident management.

System Preservation - the unmet needs estimate for preserving the state's transportation system incorporates three elements: preventive maintenance, rehabilitation and reconstruction, and regulatory mandates.

- Preventive maintenance applies cost-effective treatments to existing transportation infrastructure to Help preserve it, slowing down future deterioration of a transportation facility (without significantly increasing the structural capacity). Preventive maintenance strategies are typically applied to assets that are in good condition and have significant remaining service life. This ensures the structural integrity of transportation systems that serve people and freight.

- Rehabilitation and reconstruction strategies are applied to transportation infrastructure that is in fair to poor condition. The goal here is to restore assets to an acceptable operating condition.

- Preservation efforts also include the cost of regulatory mandates. Examples of regulatory mandates include storm water retrofitting required by the Clean Water Act (CWA) and state water quality control boards, and improvements required by the Americans with Disabilities (ADA).

TDM - Transportation Demand Management programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telework, and alternative work hours. TDM strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

Tier I - partially programmed projects

Tier II - fiscally constrained projects that are not programmed. Projects in this category must be from a fiscally constrained document/list (such as the fiscally constrained project list in an RTP) and not from an unconstrained document (such as a TCR).

Tier III - projects that the District will advocate to be included in fiscally constrained projects lists (RTP, SHOPP) during the 20-25 year planning horizon. These are projects that are not currently in a fiscally constrained project list.

Tier IV - projects that have a demonstrated need within the 20-25 year time horizon and have been identified as high priority by the District but are unlikely to receive funding within the 20-25 year time horizon. These are likely projects that will be programmed if an unexpected funding source becomes available, like an initiative or local measure.

Tier V - other projects identified as needed by the District: these may be within the 20-25 year time horizon, beyond the 20-25 year time horizon, or only conceptual in nature.

Traffic Study – an in depth analysis of the traffic conditions under existing and future scenarios for a development project.

Transportation Management System (TMS) -- the business processes and associated tools, field elements and communications systems that help maximize the productivity of the transportation system. TMS includes, but is not limited to, advanced operational hardware, software, communications systems and infrastructure, for integrated advanced TMS and information systems, and for electronic toll collection systems.

Urban – 5,000 to 49,999 in population designates an urban area. Limits are based upon population density as determined by the FHWA.

Urbanized – over 50,000 in population designates an urbanized area. Limits are based upon population density as determined by FHWA.

Vehicle Miles Traveled (VMT) – the total number of miles traveled by motor vehicles on a road or highway segments. Typically obtained by multiplying AADT by centerlane miles.

ACRONYMS

AADT - Annual Average Daily Traffic
AB – Assembly Bill
ADA - Americans with Disabilities Act of 1990
ADT - Average Daily Traffic
BNSF - Burlington Northern Santa Fe
BY – Base Year
C – Conventional Highway
CALTRANS - California Department of Transportation
CAPM - Capital Preventive Maintenance
CARB – California Air Resources Board
CTTP – Census Transportation Planning Products
CNRR – California Northern Railroad
CCTVs - Closed Circuit Television Cameras
CHP - California Highway Patrol
CMA - Congestion Management Agencies
CMAQ - Congestion Mitigation and Air Quality
CMIA - Corridor Mobility Improvement Account
CMS - Changeable Message signs
CSMP - Corridor System Management Plan
CSS - Context Sensitive Solutions
CTC - California Transportation Commission
CTP - California Transportation Plan
DOF- Department of Finance
DSMP - District System Management Plan
E - Expressway
EB - Eastbound
EIS - Environmental Impact Statement
EIR - Environmental Impact Report
ELLN – Extra Legal Load Network
FHWA - Federal Highway Administration
F&E - Freeway and Expressway
GHG - Green House Gas
HAR - (Highway Advisory Radio (HAR)
HCP - Habitat Conservation Plan
HDM – Highway Design Manual
HOT - High occupancy toll lane
HOV - High occupancy vehicle lane
HPP - High Profile Projects
HSIP - Highway Safety Improvement Program
HSR - High Speed Rail
HY – Horizon Year
ICES - Intermodal Corridor of Economic Significance
IGR - Intergovernmental Review
IIP - Interregional Improvement Program
INVEST – Infrastructure Voluntary Evaluation Sustainability Tool
IRRS - Interregional Road System
ITS - Intelligent Transportation System
ITIP – Interregional Transportation Improvement Program

ITSP - Interregional Transportation Strategic Plan
KPRA - Kingpin to Rear Axle
LBAMP – Los Banos Access Management Plan
LOS - Level of Service
MAP-21 - Moving Ahead for Progress in the 21st Century
MAX - Modesto Area Express
MCAG - Merced County Association of Government
Mer - Merced
MPO - Metropolitan Planning Organizations
MVP – Maintenance Vehicle Pullouts
N/A - Not available
NHS - National Highway System
OWP – Overall Work Program
PA&ED - Project Approval/Environmental Document
PID - Project Initiation Document
PM - Post Mile
PS&E - Plans, Specifications, and Estimates
PSR - Project Study Report
RHNA - Regional Housing Needs Allocation
RIP - Regional Improvement Program
RW - Right of Way
RP – California Rail Plan
RSTP - Regional Surface Transportation Program
RTIP - Regional Transportation Improvement Program
RTIF-Regional Transportation Impact Fee
RTP - Regional Transportation Plan
RTPA - Regional Transportation Planning Agencies
RWIS - Roadway Weather Information System
SAFETEA - Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2005
SB - Senate Bill
SCS - Sustainable Community Strategies
SHA - State Highway Account
SHOPP - State Highways Operations and Protection Program
SHS - System Highway System
SHSP - Strategic Highway Safety Plan
SJVGMAP - San Joaquin Valley Goods Movement Action Plan
SMF - Smart Mobility Framework
SOP - Status of Projects
SR - State Route
SRA – State Recreation Area
Sta - Stanislaus
STANCOG - Stanislaus Council of Governments
STRAHNET - Strategic Highway Network
STAA - Surface Transportation Assistance Act
STIP - State Transportation Improvement Program
STRAIN - Structure Replacement and Improvements Needs
TA – Terminal Access Truck Route
TASAS – Traffic Accident Surveillance and Analysis System
TCR - Transportation Concept Report
TEA-21 - Transportation Equity Act for the 21st Century

TDM - Transportation Demand Management
TMC - Transportation Management Centers
TMD – Transportation Demand Model, or Transportation Demand Management
TMS - Transportation Management System
TSDP - Transportation System Development Program
TSMO - Transportation System Management and Operations
US - United States
UTC - Ultimate Transportation Concept
UP - Union Pacific
WMA – Wildlife Management Area
YARTS - Yosemite Area Regional Transportation System
YNP - Yosemite National Park