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INTRODUCTION TO THE TRANSPORTATION CONCEPT REPORT

What is a Transportation Concept Report?

The Transportation Concept Report (TCR) is a long-term planning document that each Caltrans district prepares for every State highway, or portion thereof, in its jurisdiction, and is where long-range corridor planning in Caltrans usually begins. The purpose of a TCR is to determine how a highway will be developed and managed so that it delivers the targeted level of service (LOS) and quality of operations that are feasible to attain over a twenty-year period as indicated in the route concept.

The concept facility will provide the minimal amount of vehicle-carrying capacity necessary to achieve the concept LOS and, in some cases, people-carrying capacity will also be incorporated. Auxiliary lanes are not considered a part of the mainline roadway and, therefore, are not included in the number of travel lanes indicated in a concept.

In addition to the 20-year route concept, the TCR includes an ultimate concept, which is the ultimate goal for the route beyond the twenty-year planning horizon. Ultimate concepts must be used cautiously however, because unforeseen changes in land use and other variables make forecasting beyond twenty years difficult.

How does the TCR fit in with local and regional planning efforts?

As owner/operator of the State Highway System (SHS), Caltrans establishes a long-range vision for its highways and determines overall strategies for their management. This is achieved by taking into consideration the numerous factors encompassed in the human and natural environments in which a particular route exists. During development of a TCR, Caltrans' objective is to have local, regional, private sector, and State consensus on corridor concepts, planning strategies, and improvement priorities.

State highways within each local jurisdiction should be recognized and included in the circulation element of the general plan. The jurisdiction should also adopt the concept LOS standard (the minimum level or quality of operations that is appropriate for each route segment and is considered to be reasonably attainable within the 20-year planning period) indicated in the TCR, along with the concept improvements described in the TCR as necessary to meet the concept LOS. The jurisdiction has the option of adopting a higher LOS standard and acknowledging the inconsistency with the TCR and the associated funding participation limitations by the State for State highway improvements. Typical concept LOS standards in District 10 are LOS 'C' in rural areas and LOS 'D' in urban areas.

Does the TCR have to be read from cover to cover in order to get pertinent information about a route segment?

Caltrans does not intend for TCRs to be read from cover to cover as one would read a book. Rather, the TCR is a reference document with segment-specific information presented in a concise and readable format that allows the user to easily access, in one place in the document, all the necessary data and information that pertains to a particular segment of the route.

This format creates a certain amount of repetition in the TCR, as the route is divided into segments for analysis. Each segment's fact sheet contains a variety of technical, statistical, cultural, environmental, and other useful information that provide a deeper understanding of the route and a context for the concepts developed for it.

TCRs also include estimated right-of-way widths, and a scan of environmental resources and issues known to exist in the vicinity of the highway. Right-of-way and environmental information provided in a TCR are relative to the route or route segment and are not to be considered project specific. Precise right-of-way needs and environmental resources cannot be defined until the appropriate environmental and engineering studies are completed.

In the back of the TCR is a glossary of terms and acronyms used for this report.

Concept Improvements

The range of improvements available to achieve a route concept is heavily influenced by environmental, political, and fiscal conditions. In many areas, planned projects are subject to meeting air quality conformity standards. Unanticipated safety projects and routine roadway maintenance are not included in route concept improvements, although both will occur throughout the corridor as needed.

Because a highway is but one part of an interconnected transportation network, District 10 takes a corridor approach to developing TCRs. The corridor may include additional transportation systems, such as bus or rail transit service, bicycle and pedestrian facilities, heavy rail, ports, airports, interregional bus service, local roadways, and facilities for neighborhood electric vehicles, used occasionally by older citizens for local mobility. All of these systems reduce excess highway demand by providing travelers and shippers of goods with non-highway or non-driving options. Expansion of those that can provide a notable improvement to mobility within the corridor are included as concept improvements.

Where a concept LOS is 'F', the TCR recommends general operational improvements and alternate modes of travel as starting places for further study. However, because the number of route segments with a concept LOS 'F' is expected to increase, operational (that is, non-capacity-increasing) improvements are now the primary strategy for optimizing the operation of the existing highway infrastructure. To fully integrate this strategy, future TCRs will include an operational analysis of heavily-congested urban route segments. The results of this analysis will determine which specific operational improvements will become concept improvements.

District 10 strives to improve the quality and usefulness of its TCRs. Future updates will be expanded to include performance measures and, if available, plans that help incorporate specific, context-sensitive features into highway projects.
The TCR provides long range system planning for highways, and identifies the potential future need for capacity increasing improvements. Employing Highway Capacity Manual (HCM 2000) methodologies, the TCR projects current traffic volumes twenty years into the future and compares future outcomes with the current facility and concept LOS, recommends future concept facilities, and defines the Ultimate Transportation Corridor (UTC) needed for the preservation of future right of way beyond its twenty year planning horizon.

This TCR addresses State Route (SR) 132 that originates within District 10. The western portion of SR-132 (between Interstate (I-) 580 and SR-99 in San Joaquin and Stanislaus Counties) is on the Interregional Road System (IRRS). The concept LOS for facilities on the IRRS is 'C' for rural and 'D' for urban. The eastern portion of SR-132 (from SR-99 east through Stanislaus, Tuolumne, and Mariposa Counties to SR-49) is not on the IRRS. The concept LOS standard for facilities without an IRRS designation in District 10 is 'D'. SR-132 is also on the Freeway and Expressway System (FAE) from I-580 to unconstructed SR-85. For the portion of SR-132 that is on the FAE the design requirements for future facilities would be expressway at a minimum.

The Federal Highway Administration (FHWA) functionally classified SR-132 as a Principal Arterial for the portion included in the IRRS, and as a Minor Arterial or Major Collector depending on urban or rural development, where it is not. SR-132 is on the Federal Highway System (FHS) from I-580 to Root Road (Empire), but is not a component of the Strategic Highway Network (STRANet). A portion of SR-132 is a Terminal Access Route consistent with the Surface Transportation Assistance Act's (STAA) provisions from I-580 to SR-99. It is a California legal truck route until La Grange Road. From La Grange Road to its eastern terminus, SR-132 is an advisory truck route for trucks with a king pin to rear axle of thirty feet or greater. Other than the freeway segments, SR-132 is pedestrian and bicycle accessible; and, is not designated nor considered eligible for State or federal scenic highway status.

Much of SR-132 in San Joaquin (Segments 2 and 3) and in Stanislaus County (Segments 1-10) will be deficient by 2030. Planned and programmed projects to address most of these deficiencies were identified. No deficiencies are reported for Mariposa or Tuolumne Counties.

Initial planning documents do not consider costs, design, or prioritization, and are subject to refinement and revision as better information or methods become available. The information provided reflects best practices and do not necessarily constitute standards, specifications, or regulations. Every effort has been made by the District 10 Planning Division to ensure the accuracy and precision of the data presented.
Three segments of SR-132 are analyzed in San Joaquin County. Division of highways into segments for purposes of system evaluation and analysis follow considerations of changes in traffic volume or its composition, a change in the number of lanes, whether the segment was urban or rural, and changes in transportation planning or land use planning agency. This method deviates from that suggested in HCM (2000) p. 21-13, but provides for a more concise characterization for the need for capacity increases, versus operation improvements outside this document’s scope.

All three segments occur in a rural context outside any town or city. Their current and future LOS are determined with Highway Capacity Software’s (HCS version 5.3) freeways and two lane highway modules, and the Florida Department of Transportation’s (FDOT) FREEPLAN and HIGHPLAN. All software modules are consistent with HCM (2000).

Although a portion of Segment 1 is currently built to freeway standards, the freeway portion lacks the logical termini of beginning and ending in an interchange. Construction of an interchange at Bird Road makes the segment a freeway. For the purposes of this study, the segment was treated as freeway.

SR-132 does not directly serve any communities in San Joaquin County. Surrounding land uses center upon mining or orchard crops, and currently present little obstacle to expansion.

Future planning upon SR-132, as a component of the IRRS, requires a consistent concept facility between San Joaquin and Stanislaus Counties, and a shared vision between the two regions’ Regional Transportation Plans (RTPs), and District 10’s District System Management Plan (DSMP). Currently, only Segment 1 (I-580 to I-5) has four lanes, while Segments 2 and 3 have two lanes. By 2030, Segments 2 and 3 will be deficient, but only Segment 2 (I-5 to SR-33) has a Tier II project to increase lane capacity to four lanes. The concept facility in Stanislaus County is a four lane expressway.
<table>
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<th>122-</th>
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</table>

8 State Route 132 Transportation Concept Report

SAN JOAQUIN COUNTY FACT SHEETS - SEGMENT 2
STANISLAUS COUNTY SUMMARY

A substantial portion of the work commute in Stanislaus County travels to the San Francisco Bay Area. There are two general routes that can be followed to access I-580, either via SR-132 or via I-2051-5 from SR-120 and SR-99. Of these, SR-132 may be the least congested, and subject to fewer delays. Maintenance of an adequate corridor that may keep commuters off of SR-99, SR-120, and I-5 serves the long term planning goals not only of the Stanislaus Council of Governments (STANCOG), but of San Joaquin Council of Governments (SJCOG) and District 10. Thus, for both corridors to perform, a need to maintain an adequate LOS on SR-132 exists.

Thirteen segments of SR-132 are analyzed in Stanislaus County. Division of highways into segments for purposes of system evaluation and analysis follow considerations of changes in traffic volume or its composition, a change in the number of lanes, whether the segment was urban or rural, and changes in transportation planning or land use planning agencies. This method deviates from that suggested in HCM (2000) p.21-13, but provides for a more concise characterization for the need for capacity increases, versus operation improvements outside this document's scope.

Rural segments’ (Segments 1, 2, and 9-13) current and future LOS are determined with HCS version 5.3 two lane highway module, and the FDOT's HIGHPLAN. Urban segments’ (Segments 3-8) current and future LOS are determined with the FDOT's ARTPLAN. All software modules are consistent with HCM (2000).

The necessity of employing ARTPLAN to characterize signalized street segments presented issues on the portion of SR-132 that conforms to the portion of the route in the City of Modesto. Generally characterized by an interrupted flow, the typical performance measures for characterizing need for facility expansion do not apply. LOS on signalized segments is often F, with the ratio of volume to capacity exceeding 1.00. Where the SHS is constrained to an urban streetscape, the likely solution to address traffic need would be operational improvements beyond the scope of this analysis.

The minimal appropriate facility for interregional travel is the expressway. Conventional highways outside of an undeveloped or rural context are both unsuitable for interregional travel, and for facility expansion. Congestion and delay adversely affect home to work commutes. Facility expansion becomes limited by competing land uses, along with elevated right of way costs. In general, facility expansion becomes possible with relocation of routes to more rural contexts with an expressway facility (bypass).

SR-132 exists exclusively within District 10. The portion from I-580 to SR-99 is included in the IRRS, while the portion from SR-99 (Modesto) to Mariposa 49 is not. The route is included within the FAE from I-580 to the as yet unbuilt SR-65 (PM R41.124). These dual designations for the route result in different concept LOS and different concept facilities being proposed. For Segments 1 and 2, the concept LOS is C, and the concept facility expressway; for Segments 3–12 the concept LOS is D and the concept facility should be expressway. For Segment 13 the concept LOS is D and the concept facility is conventional highway. However, the City of Modesto’s commitment to widening Yosemite Boulevard (Segments 7 and 8) rather than consider a new route, indicates that a concept facility of conventional highway will apply to the current alignment.

Past land use in the urban municipalities may constrain highway improvements to operational rather than capacity increasing improvements. In both Modesto and Waterford, the highway defines local commercial and retail centers, and is subject to short intersection spacing, and high numbers of access points that conflict with Highway Design Manual (HDM) standards for expressways. Until the construction of new alignment, (or in the case of Segment 6 which may allow widening to four lanes), efforts to maintain performance may be limited to reducing access points through the development of an access management plan. For this reason, concept facilities within these constraints retain existing lane configurations of a conventional highway, while new alignments will express appropriate capacity to address need.

For the IRRS portion of the route, effort is underway to address the existing need. On the SR-132 Freeway West project, which is currently in the Project Approval/Environmental Document (PAED) stage, construction on the facility will not begin until 2016 and may take three years to complete. The project intends to build a new four lane expressway on new alignment from near Dakota Avenue on existing SR-132, and is to terminate at SR-99 (this will bypass Segment 3). The SR-132 Freeway West project is considered the first stage in four stages to upgrade the route to a four lane expressway or freeway (STANCOG RTP, 2011). None of the other stages have been programmed, and along with the extension across SR-99 described in the Project Initiation Document (2009) are no longer addressed in the most current STANCOG RTP (2014).

Though the PID is the most recent document on the project, several alternatives may be developed and proposed during the PA/ED phase, and may result in a project substantially different from the original concept, given current shortfalls in funding. Until a Project Report (PR) is finalized, there is no formal project description. Given these concerns, this TCR will not address a "with project" scenario, because there are no clear project limits, and with a tentative construction completion date of 2019, any reordering of State budgeting priorities would likely move the project out beyond the 2020 horizon into the 2030 horizon.

SR-132 serves the Cities of Modesto, and Waterford, both performing as, and providing access to, each city's commercial and retail centers. Historically, Modesto functioned as a rail entrepôt for agricultural goods, while Waterford appears to have been a farming enclave. Given the large local population of each city, the majority of residents likely depend upon non-farm sector employment, though major regional employers include industries associated with agriculture, particularly canneries.

According to the 2010 census, the population of Stanislaus County was 514,453, with an ethnic composition of 65.6% white, 2.9% African American, 1.1% Native American, 5.1% Asian, and 0.7% Pacific Islander. Of the population, 41.9% of any racial category self identifies as Latino/Hispanic. The median age of all residents in the county is 32 years. Median household income (at $40,101) is below that for the State ($46,816). The percentage of total population below the federal poverty line is 16% for Stanislaus County and 14.2% for California (2000 Census).

SR-132 serves urban areas within Modesto and Waterford, with substantial opportunities for multimodal transportation. Only the Modesto Area Express (MAX) deploys fixed route buses along the Maze and Yosemite Boulevard corridors, MAX Route 26 serves a portion of Segment 3 between SR-99 and Carpenter Road, and MAX Route 39 travels along Segments 5-8, from the transit center out to Empire. The entire route is minimally Class III bicycle lane. Sidewalks and crosswalks are present within Modesto and Waterford. More may be done to address bicycle and pedestrian needs, these are outlined in the STANCOG Non-Motorized Transportation Plan, 2013, (Fehr and Peers). Independent of the local planning priorities, Caltrans will monitor safety and operational deficiencies that arise on SR-132 as needs arise consistent with its planning role for interregional transportation.
SR-132 has a significant role in the interregional movement of goods and services within Stanislaus County. It serves as an efficient truck corridor from Modesto to the Bay Area, and is designated Terminal Access (TA) from SR-99 to I-580. Upgrade of the route to STAA along Segments 4-8 will likely provide future support for industrial and commercial development between Modesto and Empire. Much of the current land use along these segments is industrial. Segments 7 and 8 access industries within the Beard Industrial Tract, (which includes the Del Monte Cannery and Gallo Winery, as well as supporting bottling, packaging, and container firms) which are primarily served by the Modesto and Empire Shortline Railroad and its Valley Transload facility adjacent to the Burlington Northern Santa Fe Railroad (BNSF) mainline. Several local north and south truck routes also support the area, but it is unclear whether trucks on these routes rely upon SR-132 as the principal east and west route, or travel directly from SR-99 (which is on the National Network) farther south. One of these routes, Mitchell Road is now on the FHS as of the passage of MAP-21. Beyond Empire, SR-132 has a diminished freight role as no large population centers are served.

Within the City of Modesto, SR-132 connects south to the Modesto Airport via Mitchell Road. One of the oldest municipally owned airports, the Modesto Airport is a general aviation airport that serves commercial commuter travel rather than goods transport. The facility has two runways, with an air terminal. Current commuter service exists to San Francisco (three flights daily), with occasional charter flights to Nevada. According to the 2011 RTP (p.6-37) there are limited cargo operations that the airport seeks to expand.

There exist two at-grade railroad crossings on STA-132—on Segment 4 near Ninth Street (Union Pacific), and on Segment 8 near Santa Fe Avenue (BNSF). Neither is identified for improvement in the RTP.

Analysis and evaluation of the thirteen segments of SR-132 in Stanislaus indicates that for Segments 1–10, LOS will likely become deficient by 2030. Planned and programmed efforts will likely alleviate these deficiencies in Segments 3–8. This will likely leave Segments 1, 2, 8, and 9 deficient by 2030.
## Stanislaus County Fact Sheets - Segment 1

### State Route 132 - Transportation Concept Report

**Segment Location:**
- **Description:** Main Brd - San Joaquin County Line to Hunt Road
- **Post Mile:** 0.000 to 0.380
- **Length:** 0.380
- **Functional Classification:** Principal Arterial
- **Location:** Stanislaus County
- **Other Agency/Entity:** STANCO

### Number of Lanes:
- **Currently:** 2
- **Future:** 4
- **Note:** Right-of-Way Width (R): see note below

### Design Information:
- **Highway Classifications:**
  - **Functional:** Principal Arterial
  - **Location:** Stanislaus County
- **Other Agency/Entity:** STANCO

### Bridge Serviceability Rating:
- **Present:** N/A
- **Future:** N/A

### Stanislaus 132 Segment 1:
- **Segment 1:**
- **Other State Highways:**
- **Local Roads:**
- **Counties:**

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- **Intermodal Commuter Facilities:**
- **Intermodal Freight Facilities:**

### Pedestrian Facilities:
- **Parks and Recreation:**
- **Freight Distribution:**
- **Transit Bus:**

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### Notes:
- This information is for overview purposes only and does not replace a full report from Right-of-Way, Environmental, or any other Branch or Division.

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**State Route 132 Transportation Concept Report**

12
Stanislaus 132 Segment 2

Segment 2 Overview

- Description:
  - Maze Blvd., Hart Rd. to Carpenter Rd.
- Length:
  - 6,300-13,420
- Functional Classification:
  - Rural Urban/Urbanized
- Within City Limits:
  - No
- Local Planning Jurisdiction:
  - Stanislaus County
- Stakeholder Group:
  - STANCOG
- Number of Lanes:
  - 2
- Lane Width (ft):
  - 12
- Right of Way Width (ft):
  - 60-100'
- Shoulder Width (ft):
  - 8
- Median Width (ft):
  - N/A
- Distracted Lane Miles:
  - 10.00
- Present Serviceability Rating:
  - N/A

- Functional Classification:
  - Principal Arterial
- Facility Type:
  - Scenic Highway
- Interstate/Freeway System:
  - No
- California Highway:
  - Yes
- Advisory:
  - No
- Additional Restrictions:
  - No
- Access to Intermodal Freight Facility:
  - No

- Degree of Impact:
  - Environmental Status:

- Flood Plains:
  - Low
- Cultural Resources:
  - High
- Leaking Underground Tanks:
  - High
- Possible Hazardous Waste:
  - Low

- Ozone:
  - Particulate Matter 10 m
  - Particulate Matter 2.5 m
- Air Quality:
  - Carbon Monoxide

- Bicycle Facility:
  - No
- Airports
  - No
- Intermodal Freight Facilities
  - No

- Level of Service (LOS) calculated using Highway Capacity Software (HCS+TYP) and Florida Department of Transportation HIGHPLAN 2004 Multimodal and Two-Lane Highway Level of Service. Analysis for Conceptual Planning and Preliminary Engineering Version Data: 7/19/2010. All LOS reflects vehicular only. LOS does not reflect multi-modal at this time.

- Intelligen Transportation System (ITS) Elements & Detection:
  - Post Mile:
    - 11.327
    - 11.485
  - ITS Element:
    - TMS
    - TMS
  - Status:
    - Existing
    - Existing
  - Direction:
    - Both
  - Comments:

Note: This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.
### Stanislaus 132 Segment 4

#### segments 4

#### State Route 132 - Transportation Concept Report

<table>
<thead>
<tr>
<th>Description</th>
<th>SEGMENT 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Mile</td>
<td>L’, SR-99 to SR-106 (L’, Modesto)</td>
</tr>
<tr>
<td>Length</td>
<td>0.273</td>
</tr>
<tr>
<td>Functional Classification</td>
<td>Principal Arterial</td>
</tr>
<tr>
<td>Number of Lanes</td>
<td>4</td>
</tr>
<tr>
<td>Lane Width (R):</td>
<td>12</td>
</tr>
<tr>
<td>Right of Way Width (R):</td>
<td>50</td>
</tr>
<tr>
<td>Accessible to Bicycles</td>
<td>Yes</td>
</tr>
<tr>
<td>Bridge Needs</td>
<td>N/A</td>
</tr>
<tr>
<td>POS Name</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge</td>
<td>N/A</td>
</tr>
<tr>
<td>Bridge Name</td>
<td>N/A</td>
</tr>
<tr>
<td>Functional Classification</td>
<td>Principal Arterial</td>
</tr>
<tr>
<td>Facility Type</td>
<td>Conventional Highway</td>
</tr>
<tr>
<td>High Emphasis Route</td>
<td>No</td>
</tr>
<tr>
<td>National Highway System</td>
<td>Yes</td>
</tr>
<tr>
<td>Highway Expressway System</td>
<td>Yes</td>
</tr>
<tr>
<td>Strategic Highway Network</td>
<td>No</td>
</tr>
<tr>
<td>Freeway Agreement</td>
<td>No</td>
</tr>
<tr>
<td>Surface Transportation Assistance Act (STAA)</td>
<td>No</td>
</tr>
<tr>
<td>California Legal</td>
<td>Yes</td>
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<td>California Legal</td>
<td>Yes</td>
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<tr>
<td>Additional Restrictions</td>
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<td>Access to modal half</td>
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#### Degree of Impact

<table>
<thead>
<tr>
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<th>Depth of Impact</th>
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<tbody>
<tr>
<td>Flood Plains</td>
<td>Low</td>
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<tr>
<td>Wetlands</td>
<td>Low</td>
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<tr>
<td>Special Status Species</td>
<td>Moderate</td>
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<tr>
<td>Cultural Resources</td>
<td>Moderate</td>
</tr>
<tr>
<td>Leaking Underground Tanks</td>
<td>Low</td>
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</table>

#### Air Quality

<table>
<thead>
<tr>
<th>Ozone</th>
<th>Particulate Matter 2.5 m</th>
<th>Carbon Monoxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
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#### Travel Forecast Data

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2020</th>
<th>2028</th>
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<tbody>
<tr>
<td>HCQ</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>LOS</td>
<td>F</td>
<td>F</td>
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#### Bicycle Facility

<table>
<thead>
<tr>
<th>Year</th>
<th>PM</th>
<th>Location</th>
<th>Class</th>
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<tbody>
<tr>
<td>2016</td>
<td>14.710-14.883</td>
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<td>LOS</td>
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#### Pedestrian Facility

<table>
<thead>
<tr>
<th>Year</th>
<th>PM</th>
<th>Location</th>
<th>Class</th>
</tr>
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<tbody>
<tr>
<td>2016</td>
<td>14.710-14.883</td>
<td>On Route</td>
<td>LOS</td>
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#### Planned Projects

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Description</th>
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<tbody>
<tr>
<td>Install station 208 at the JCT SR-99, Modesto.</td>
<td>Install ITS.</td>
</tr>
<tr>
<td>Improved connection to SR-99.</td>
<td>Build new alignment to Fourteenth Street.</td>
</tr>
</tbody>
</table>

### Stanislaus County

- **Area:** Transportation District 10
- **Facility:** Stanislaus 132 Segment 4
- **Type:** Transportation Concept Report
- **Date:** July 15, 2010
- **Page:** 15

---

**Note:** This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.
## Stanislaus 132 Segment 6

### Description:
- **State Route:** 132
- **Transportation Concept Report:** Stanislaus County
- **Segment Location:**
  - **PM 14.983:** MODESTO
  - **PM 15.340:** T' St, Ninth St to Fourteenth/Youastre
  - **LOS:** E

### Functional Classification:
- **Principal Arteral:** Yes
- **Rural/Urban/Urbanized:** Urban
- **Within City Limits:** Yes
- **Local Planning Jurisdiction:** City of Modesto

### Number of Lanes:
- **Total:** 4
- **Lanes:** 4
- **Lane Width (ft):** 12
- **Right of Way Width (ft):** 80
- **Shoulder Width (ft):** 0
- **Median Width (ft):** N/A
- **Delineated Lane Miles:** 1.30

### Post Mile:
- **PM 14.983:** N/A
- **PM 15.340:** N/A

### Bridge Needs:
- **Bridge Needs:** Present Serviceability Rating
- **Bridge Name:** N/A

### Segment Route Concept:
- **Travel Forecast Data:**
  - **2010:**
    - **LA:** 1,200
    - **EB:** 1,000
    - **Volume/Capacity:** N/A
    - **Average Daily Traffic:** 13,400
    - **Peak Hour Volume:** 7,000
    - **Peak Hour Directional Spill:** 9.6
  - **2020:**
    - **LA:** 1,494
    - **EB:** 1,500
    - **Volume/Capacity:** N/A
    - **Average Daily Traffic:** 15,300
    - **Peak Hour Volume:** 7,505
    - **Peak Hour Directional Spill:** 9.4
  - **2030:**
    - **LA:** 1,674
    - **EB:** 1,700
    - **Volume/Capacity:** N/A
    - **Average Daily Traffic:** 17,200
    - **Peak Hour Volume:** 7,118
    - **Peak Hour Directional Spill:** 9.4

### Degree of Impact:
- **Environmental Status:**
  - **Degree of Impact:**
    - **Cultural Resources:** Moderate
    - **Leaking Underground Tanks:** Low
    - **Possible Hazardous Waste:** Low

### Security, Traffic Management, and Emergency Response:
- **Ozone:** Particulate Matter 10 m
- **Carbon Monoxide:** Particulate Matter 2.5 m
- **Air Quality:**
  - **Traffic Facility:** Yes
  - **Matrix:** Yes
  - **PM 14.983-15.340:** Yes
  - **Location:** PM

### Pedestrian Facility:
- **Location:** N/A

### Bicycle Facility:
- **Location:** N/A

### Technology Infrastructure:
- **Intelligent Transportation System (ITS) Elements & Detection:**
  - **ITS Element:** None present

### Notes:
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---

*Caltrans Department of Transportation District 10*

*State Route 132 Transportation Concept Report*
Stanislaus County Segment 8

Segment 8
Other State Highways
Local Roads
City of Modesto

PM 19.130
PM 20.352

To Coulerville

Stanislaus 132 Segment 8

Travel Forecast Data

2010
2020
2030

HCS
1.221
1.38
1.54

LOSPLAN
N/A
N/A
N/A

PM 19.130-20.352

Bicycle Facility

Location

Yes/No

On Route

LOS
N/A

Pedestrian Facility

Location

Yes/No

LOS
N/A

Plan

Programmed Projects

Post Mile

19.130

Description

TMS in both traffic directions.
Improved connection to SR-99.
Wider than four to six lanes.

ITF Elements & Detection

Status

None present

State Route 132 Transportation Concept Report

19
Stanislaus County Facts Sheet - Segment 9

State Route 132 - Transportation Concept Report

Description:
- Post Mile: 20.352-23.144
- Length: 2.792
- Local Planning Jurisdiction: Stanislaus County
- Other Agency/Entity: Caltrans
- Roadway Information (approximate):
  - Number of Lanes: 2
  - Lane Length: 100 ft
  - Right of Way: 100 ft
  - Shoulder Width: 5 ft
  - Median Width: 0 ft
  - Distressed Lane: 5%
  - Present Serviceability Rating: N/A
  - Environment Status: N/A
  - Bridge Needs: N/A

Route Designations:
- Functional Classification: Major Collector
- Facility Type: Conventional Highway
- Intermodal Road System: No
- High Emphasis Route: No
- National Highway System: No
- Freeway Expressway System: Yes
- Strategic Highway: No
- Freeway Agreement: No

Travel Forecast Data
- HCS 2010: 0.35
- LOSPLAN 2010: 0.36
- HCS 2020: 0.40
- LOSPLAN 2020: 0.42
- HCS 2030: 0.45
- LOSPLAN 2030: 0.47

Air Quality
- Ozone: Moderate to High
- Particulate Matter 10 m: Low
- Particulate Matter 2.5 m: Low
- Carbon Monoxide: Low

Pedestrian Facility
- Location: N/A
- PM: No
- Location: N/A
- LF: No

Programmed Projects
- Planned: None
- Programmed: None
- Location: N/A
- Description: There are no planned projects on this segment.
- Notes: None

Note: This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.

Caltrans Department of Transportation District 10

Stanislaus County

Segment 9
- Other State Highways
- Local Roads
- City of Modesto
- Miles: 0.6
- Description: Yosemite Hwy to Gare Rd
- Rural/Urbanized: Rural
- Stanislaus County
- Non-Rural: 2%
- Urban: 0%
- Rural: 100%

Comments: None present.
**STANISLAUS COUNTY FACT SHEETS—SEGMENT 11**

**STATE ROUTE 132—TRANSPORTATION CONCEPT REPORT**

<table>
<thead>
<tr>
<th>Description</th>
<th>STANISLAUS COUNTY</th>
<th>SEGMENT 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Mile:</td>
<td>27.210-29.105</td>
<td>Rural/Urban/Urbanized: Urban</td>
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<tr>
<td>Length:</td>
<td>1.900</td>
<td>Within City Limits: Yes</td>
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<tr>
<td>Functional Classification:</td>
<td>Major Collector</td>
<td>Local Planning Jurisdiction: N/A</td>
</tr>
<tr>
<td>Number of Lanes:</td>
<td>2</td>
<td>Lane Width (ft): 12</td>
</tr>
<tr>
<td>Grade %:</td>
<td>N/A</td>
<td>Right of Way Width (ft): 60-100'</td>
</tr>
<tr>
<td>Accessible to Bicyclists:</td>
<td>Yes</td>
<td>Shoulder Width (ft): 4</td>
</tr>
<tr>
<td>Bridge Needs:</td>
<td>Present Serviceability Rating: N/A</td>
<td>Median Width (ft): N/A</td>
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<td>Pedestrian:</td>
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<td>Disksed Lane Miles: 3.90</td>
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<td>Bridge:</td>
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<td>Route Designations:</td>
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<td>Bridge Name:</td>
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<td>Recreational Highway (Designated): No</td>
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<tr>
<td>Functional Classification:</td>
<td>Major Collector</td>
<td>Scenic Highway (Designated): No</td>
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<tr>
<td>Facility Type:</td>
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<td>National Network, Terminal Access: No</td>
</tr>
<tr>
<td>Intermodal Road System:</td>
<td>No</td>
<td>Surface Transportation Assistance Act (STAA): No</td>
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<tr>
<td>Focus Route/Conventional Route:</td>
<td>No</td>
<td>California Security Plan: Yes</td>
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<tr>
<td>National Highway System:</td>
<td>No</td>
<td>Advisory: No</td>
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<tr>
<td>Freeway Expressway System:</td>
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<td>Additional Restrictions: No</td>
</tr>
<tr>
<td>Strategic Highways Network:</td>
<td>No</td>
<td>Access to Intermodal Freight Facility: No</td>
</tr>
<tr>
<td>Freeway Agreement:</td>
<td>No</td>
<td>Environmental Review:</td>
</tr>
</tbody>
</table>

**Environmental Impact**

- Flood Plains: Low
- Wetlands: Low to Moderate
- Cultural Resources: High
- Leaking Underground Tanks: No
- Possible Hazardous Waste: Low

**Air Quality**

- Ozone: Moderate
- Particulate Matter 10 μm: Low
- Particulate Matter 2.5 μm: Low
- Carbon Monoxide: Low

**Concept Level of Service**

- Concept Facility: 2030
- Ultimate Transportation Capacity: 2030

**Programmed Projects**

- Planned Projects: N/A
- Non-Attainment: N/A

**Intelligent Transportation System (ITS) Elements & Detection**

- ITS Element: None present
- Status: N/A
- Direction: N/A

**Notes:**

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For the portion of SR-132 that runs through Tuolumne County, much of the traffic can be considered interregional as no population or work centers exist on or near the segment. The context is rural and agricultural.

SR-132 was divided into two segments. This division followed considerations of changes in political boundaries, as the segments’ volume, composition, and flow, do not change.

To characterize LOS, two software applications were employed—HCS version 5.4 and the FDOT 2009 software (both are packaged together under the McTrans HCS trademark). Typically the two modules provide equivalent results and serve as a useful means to assess possible modeling errors.

Future forecast volumes were obtained through three linear projections: 1) from past traffic volumes for the previous twenty years to present, extended twenty years further, 2) from the local transportation planning jurisdiction’s travel demand model (TDM), and 3) from the Department of Finance’s (DOF) twenty year population growth projection for Tuolumne County. The three projections are then compared for consistency, and may result in one projection being dropped, usually because it overestimates or underestimates future growth compared to the last validated transportation planning jurisdiction’s TDM.

Land uses along the SR-132 corridor conform to the Tuolumne County General Plan. General plans typically characterize and distribute future population density, and would influence future traffic volumes, however this influence is negligible for SR-132 given there is no current or future proposed development along these segments. As the current and likely future land uses are agricultural and low density rural residential, increased traffic from access to the facility is not anticipated.

SR-132 supports few multimodal opportunities. There is no transit service on the route at this time. Although the route supports moderate recreational bicycle use, the narrow lane widths and shoulders might preclude bicycle use if traffic volumes were greater. No sidewalks are present.

The route plays a minor role in the interregional transport of goods and services, by linking Coulterville to Modesto through Tuolumne County. The route is advisory for trucks with a greater than thirty foot king pin to rear axle.

Modeling and analysis indicate neither segment will experience a deficient LOS by 2030. Therefore there exists no need for capacity increases at this time.
### Tuolumne County - Segment 1

#### Segment Location:
- **Description:** Stanislaus County Line to Mariposa County Line
- **Post Mile:** 0.000-0.460
- **Functional Classification:** Minor Arterial
- **Local Planning Jurisdiction:** Tuolumne County
- **Other Agency/Entity:** 0/0/10

#### Roadway Information (approximate):
- **Number of Lanes:** 2
- **Lane Width (ft.):** 11
- **Right of Way Width (ft.):** 60'-100'
- **Shoulder Width (ft.):** 2
- **Median Width (ft.):** NA
- **Access to Bicycles:** Yes
- **Discreet Lane Miles:** 0.56
- **Pedestrian:** NA
- **Bridgalt:** NA
- **Bridge Name:** NA
- **Bridge Ratings:** Present Serviceability Rating NA

#### Route Designations:
- **Facility Type:** Conventional Highway
- **Interregional Road System:** No
- **Highway Route:** No
- **Surface Transportation Assistance Act (STAA):** No
- **California Legal:** No
- **Advisory:** No
- **Year KRR-30:** No
- **Access to Intermodal Freight Facility:** No

#### Degree of Impact:
- **Water Quality:** Low
- **Cultural Resources:** Moderate
- **Leasing Underground Tanks:** Low
- **Possible Hazards/Waste:** No

#### Bicycle Facilities:
- **Air Quality:** Particulate Matter 10 μm
- **Car NOx:** Carbon Monoxide

#### Data:
- **Travel Forecast Data:**
  - **Posted Speed:** 55 MPH
  - **Existing Facility:** 2 lane conventional highway
  - **Volume/Capacity:** 12.32
  - **Average Daily Traffic:** 5,330
- **Peak Hour:**
  - **Peak Hour Volume:** 241
  - **Location:** PM
  - **Crisp Rating:** N/A
  - **LOS:** N/A

#### Concept Level of Service:
- **Concept Facility:** 2 lane conventional highway
- **Ultimate Transportation Corridor:** 2 lane conventional highway
- **Comments:** None

#### Intelligent Transportation System (ITS) Elements & Detection:
- **ITS Element:** None present
- **ITS Status:** None

#### Notes:
- This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.

---

#### Bike Path Facility:
- **Air Quality:** Particulate Matter 2.5 μm
- **Carbon Monoxide:** Particulate Matter 10 μm
- **Existing Transportation Network:**
  - **Bicycles:** Yes/No
  - **Existing Commuter Facilities:** Yes/No
  - **Intermodal Freight Facilities:** Yes/No

#### Pedestrian Facility:
- **Park and Rides:** Yes/No
- **Freight Distribution:** Yes/No
- **Train Rail:** Yes/No

---

#### Section Route Concept:
- **Post Mile:** 0.000-0.460
- **Location:** No
- **Description:**
  - There are no planned projects in this segment.
  - There are no programmed projects in this segment.
# Tuolumne County Fact Sheets — Segment 2

**State Route 132**

**Transportation Concept Report**

### Segment Location:
- Merced County Line to Mariposa County Line
- **Length:** 3.774 miles
- **Functional Classification:** Minor Arterial
- **Within City Limits:** No
- **Local Planning Jurisdiction:** Tuolumne County
- **Other Agency/Entity:** Tuolumne County

### Number of Lanes:
- **Number of Lanes:** 2
- **Lane Width (ft):** 12
- **Right of Way Width (ft):** 60'-0"
- **Shoulder Width (ft):** 2
- **Median Width (ft):** NA
- **Delineated Lane Miles:** 3.774

### Functional Classification:
- **Classification:** Minor Arterial

### Designation:
- **Designated:** No

### Degree of Impact:
- **Marginal**
- **Cultural Resources:** NA
- **Waterbodies:** NA
- **Leaking Underground Tanks:** NA
- **Special Status Species:** NA
- **Possible Hazardous Waste:** NA

### Ozone:
- **Non-attainment**
- **Particulate Matter 10 m:** Yes
- **Particulate Matter 2.5 m:** Yes

### Air Quality:
- **Carbon Monoxide:**
- **Lead:** No

### Bicycle Facility:
- **Provision:** No

### Pedestrian Facility:
- **Provision:** Yes

### Level of Service (LOS) Calculated Using Highway Capacity Software (HCS-97) and Florida Department of Transportation (FHWA/PLANS): 2009 Multifile and Two-Lane Highway Level of Service, Analysis for Conceptual Planning and Preliminary Engineering Version Date: 7/11/2010. All LOS reflects vehicles only. LOS does not reflect multi-modal at this time.

### Concept Level of Service:
- 12

### Concept Facility:
- 2 lane conventional highway

### Intelligent Transportation System (ITS) Elements & Detectors:
- **Postmile:** 175 Element
- **Status:** None present

---

**Note:** This information is for overview purposes only and does not replace a full report from Right of Way, Environmental, or any other Branch or Division.
MARIPOSA COUNTY SUMMARY

For the portion of SR-132 that runs through Mariposa County, much of the traffic can be considered interregional as no population or work centers exist on or near the segment. The context is rural and agricultural.

In Mariposa County, SR-132 was divided into two segments. This division followed considerations of changes in political boundaries, because the segments' volume, its composition, or its flow do not change.

To characterize LOS, two software applications were employed—HCS version 5.4 and the FDOT 2009 software (both are packaged together under the McTrans HCS trademark). Typically the two modules provide equivalent results and serve as a useful means to assess possible modeling errors.

Future forecast volumes were obtained through three linear projections: 1) from past traffic volumes for the previous twenty years to present, and extended twenty years further, 2) from the local transportation planning jurisdiction's TDM, and 3) from the DOF's twenty year population growth projection for Mariposa County. The three projections are then compared for consistency, and may result in one projection being dropped, usually because it overestimates or underestimates future growth compared to the last validated transportation planning jurisdiction's TDM.

Land uses along the SR-132 corridor conform to the Mariposa County General Plan. General plans typically characterize and distribute future population density, and would influence future traffic volumes, however this influence is negligible for SR-132 given there is no current or future proposed development along these segments. As the current and likely future land uses are agricultural and low density rural residential, increased traffic from access to the facility is not anticipated.

SR-132 supports few multimodal opportunities. There is no current transit service on the route at this time. Although the route supports moderate recreational bicycle use, the narrow lane widths and shoulders might preclude bicycle use if traffic volumes were greater. No sidewalks are present.

The route plays a minor role in the interregional transport of goods and services, by linking Coulterville to Modesto. The route is advisory for trucks with a greater than thirty foot king pin to rear axle.

Modeling and analysis indicate neither segment will experience a deficient LOS by 2030. Therefore, there exists no need for capacity increases at this time.
### Mariposa 132 Segment 1

**Mariposa County**

**Segment Location:**
- Segment 1

**Description:**
- Transport Corridor: Mariposa County
- Transportation Need: Mariposa County

**Post Mile:**
- 0.460

**Length:**
- 3.501 miles

**Functional Classification:**
- Minor Arterial

**Local Planning Jurisdiction:**
- Mariposa County

**Other Agency/Entity:**
- MCLE

**Number of Lanes:**
- 2

**Lane Width (ft):**
- 10

**Shoulder Width (ft):**
- 36-120

**Median Width (ft):**
- NA

**Route Designations:**
- N/A

**Facility Type:**
- Conventional Highway

**Interstate Route System:**
- Yes

**Highway Route:**
- Yes

**National Network:**
- Yes

**Surface Transportation Assistance Act (STAA):**
- Yes

**California Legal:**
- Yes

**KPR Limit:**
- Yes

**Access to Intermodal Freight Facility:**
- Yes

**Environmental Status:**
- N/A

**Degree of Impact:**
- N/A

**Cultural Resources:**
- High

**Leaking Underground Tanks:**
- Low

**Possibility Hazardous Waste:**
- Low

**Traffic Forecast Data:**

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2020</th>
<th>2030</th>
</tr>
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<tbody>
<tr>
<td>HCS</td>
<td>CBS</td>
<td>CBS</td>
<td>CBS</td>
</tr>
<tr>
<td>LOSPLAN</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<tr>
<td>LOSPLAN</td>
<td>0.18</td>
<td>0.19</td>
<td>0.19</td>
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<td>Volume/Capacity</td>
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<td>275</td>
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<td>Average Daily Traffic</td>
<td>1,025</td>
<td>1,729</td>
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<td>Peak Hour Volume</td>
<td>40/20</td>
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<td>40/20</td>
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<tr>
<td>Peak Hour % of Total ADT</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Peak Hour % of Traffic</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
</tr>
</tbody>
</table>

**Existing Facility:**
- 2 lane conventional highway

**Peak Hour Delay:**
- N/A

**Peak Hour Reduction:**
- N/A

**Peak Hour Reliability:**
- N/A

**Peak Hour Reliability Index:**
- N/A

**Peak Hour % of Traffic:**
- N/A

**Peak Hour % of Total ADT:**
- N/A

**Level of Service (LOS):**
- N/A

**Bicycle Facility:**
- Yes

**Airport Access:**
- Yes

**Intermediate Commuter Facilities:**
- Yes

**Intermodal Freight Facilities:**
- Yes

**Pedestrian Facility:**
- Yes

**Park and Ride:**
- Yes

**Freight Distribution:**
- Yes

**Transit Bus:**
- Yes

**Concept Level of Service:**
- D

**Concept Facility:**
- Yes

**Ultimate Transportation Corridor:**
- Yes

**Comments:**
- N/A

**Intelligent Transportation System (ITS) Elements & Detection:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Status</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>none present</td>
<td></td>
<td></td>
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</table>

**Note:** This information is for overview purposes only and does not replace a full report from Right-of-Way, Environmental, or any other Branch or Division.
APPENDIX A: GLOSSARY

Annual Average Daily Traffic (AADT): AADT consists of Caltrans, District 10 annual traffic counts as measured at approved count station locations.

ARTPLAN: A modeling software incorporating several of the HCM equations to characterize the function and the performance of urban streets (typically where peak traffic volumes exceed lane capacity, multiple signalized intersections, with high pedestrian and bicycle use).

Bicycle Routes: Refers to travelways specific to users employing bicycles. There are three general classifications: "III"—bicycles share street with automobiles without separation; "II"—bicycles share street within their own designated lane; and "I"—bicycles travel independent of automobile traffic, often sharing right of way with pedestrians or equestrians.

California Environmental Quality Act (CEQA): Passed in 1971, CEQA provides the framework in which undertakings that may affect the environment are evaluated and if found to be adverse are to be mitigated for, as part of the governmental decision making process. For local governments, implementation of general plans and land use designations becomes a requirement and a benchmark for which changes in zoning or land uses could be assessed.

Census Designation: The designation of rural (population below 5,000), or urbanized (population between 5,000 and 50,000), or urban (populations of 50,000 or greater) highways are obtained from the California Road System Maps published by FHWA, based upon census designated urbanized areas, and urbanized clusters. The most recent version dates from 2007.

Concept Facility: Highway facility that best maintains the concept LOS at the end of the twenty year planning period.

Concept Level of Service: See Level of Service.

Conventional Highway: Highway which permits direct access by both road intersections and driveways.

Distressed Lane Miles: Highway lane miles which have degraded below a specified threshold which puts it in a category where resurfacing or other road work will be needed to attain the standard quality of roadway condition.

Expressway: Highway, usually an arterial, typically with access limited to at grade road intersections.

Federal Highway System: Designated by the Federal Highway Administration, these segments of state highways serve to either support interstate commerce, national defense, or other responsibilities of the federal government. As such they are eligible for federal funding, and subject to the National Environmental Policy Act (NEPA).

FREEPLAN: A modeling software incorporating several of the HCM equations for characterizing freeway function and performance. The software establishes level of service and service volumes for designated freeway segments.

Freeway: A divided arterial highway with full access control and grade separations at intersections.

Focus Route: See Interregional Road System.

Highway Capacity Manual (HCM): Published by the National Research Council’s Transportation Research Board, the HCM is the national standard for methodologies to evaluate and estimate highway performance. Approved software packages developed to reduce the computation effort associated with the HCM are Highway Capacity Software’s (HCS) various modules and the FDOT’s ARTPLAN, FREEPLAN, and HIGHPLAN. The most recent update of HCM is for 2010, though several of the software interfaces are not yet currently available.


High Emphasis Route: See Interregional Road System.

HIGHPLAN: A modeling software that incorporating several of the HCM equations for characterizing the operation and performance of two-lane and four lane highways. The software calculates level of service and volume to capacity ratios, and may address bicycle LOS.

Interregional Road System (IRRS): A State planning effort that emphasized highways within the Freeway and Expressway system that provided network connections to urban places statewide, but were not yet constructed to freeway or expressway standards. The most recent expression of this plan (2013) discussed Focus and High Emphasis routes, and established short term and long term improvements for these specific routes.

Level: See Terrain.

Level of Service (LOS): A qualitative performance measure that describes the perception of the commuter (driver, bicyclist, pedestrian, transit) of the operational conditions within a traffic stream on a highway segment. Generally scaled in a range from A through F, and historically as a performance measure for automobiles, the LOS targets optimal utility expressed as the concept LOS (C for rural highways on the IRRS, D for urban highways on the IRRS and all routes not on the IRRS). Although the current version of the Highway Capacity Manual includes LOS calculations for users other than drivers, standards have yet to be established by the State.

LOSPLAN: FDOT’s LOS software developed as a Quality level of service application. The application employs the 2000 HCM methodologies for automobiles and other leading methodologies for the bicycle, pedestrian, and bus modes to compute quality LOS for planning and preliminary engineering. The software includes ARTPLAN, FREEPLAN, and HIGHPLAN options for multi-modal analysis of arterials, freeways and two-lane highways.

Mountainous: See Terrain.

National Environmental Policy Act (NEPA): Established in 1971, this environmental policy applies to federal undertakings or efforts that have a federal nexus. Federal agencies were tasked to develop policies and standards to evaluate and assess the environmental impacts of federal undertakings, while the Act established general policies regarding public notification and report standards.

Peak Hour Traffic Volume: Refers to the period in which the highest traffic volume travels along a highway segment.

Present Serviceability Rating (PSR): A five point scale for characterizing pavement condition, with 5 being excellent. PSR is employed as an input to characterize bicycle LOS.

Rolling: See Terrain.

Rural: See Census Designation.

Surface Transportation Assistance Act (STAA): Federal highway legislation that included federal design standards and requirements for trucks (see Truck Routes).

Terrain: Refers to topography specific to its affect on trucks and other heavy vehicle operation (see HCM). Level terrain contains any combination of grades or horizontal or vertical alignments that permit heavy vehicles to maintain the same speed as passenger cars; rolling terrain contains any combination of grades or horizontal or vertical alignments that causes heavy vehicles to reduce their speed substantially below that of passenger car speeds.
but not to where they crawl for a significant length of time; mountainous terrain is any combination of grades or horizontal or vertical alignment that causes heavy vehicles to operate at crawl speed for significant distances or at frequent intervals. HCM methodologies address highway segments with level or rolling terrain with a set of constant values. Mountainous terrain requires separate upgrade or downgrade analysis, and recommends that any segment with grades between 2 percent and 3 percent with a length of more than half a mile be considered a separate segment.

**Truck Routes:** May refer to either federal standards (contained in STAA) or California standards. Routes with an STAA designation permit travel by tractor trailers with a fifty five foot long trailer, or tandems with trailers no greater than twenty eight and a half feet, while California legal routes permit limit the overall truck length to sixty five feet total for single and seventy five for tandems. Advisory truck routes usually possess highway geometrics that limit truck length for safe operation. Restricted truck routes have legal restrictions on the type of truck or activity.

**Urban:** See Census Designation.

**Urbanized:** See Census Designation.
### APPENDIX B: ACRONYMS

<table>
<thead>
<tr>
<th>AADT</th>
<th>Annual Average Daily Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
</tr>
<tr>
<td>BNSF</td>
<td>Burlington Northern and Santa Fe Railroad</td>
</tr>
<tr>
<td>CMS</td>
<td>Changeable Message Sign</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>COG</td>
<td>Council of Governments</td>
</tr>
<tr>
<td>CSMP</td>
<td>Corridor System Management Plan</td>
</tr>
<tr>
<td>CSS</td>
<td>Context Sensitive Solutions</td>
</tr>
<tr>
<td>CTC</td>
<td>California Transportation Commission</td>
</tr>
<tr>
<td>CTIS</td>
<td>California Transportation Investment Strategy</td>
</tr>
<tr>
<td>DOF</td>
<td>Department of Finance</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>DSMP</td>
<td>District System Management Plan</td>
</tr>
<tr>
<td>EB</td>
<td>Eastbound</td>
</tr>
<tr>
<td>E/O</td>
<td>East Of</td>
</tr>
<tr>
<td>FAE</td>
<td>Freeway and Expressway System</td>
</tr>
<tr>
<td>FDOT</td>
<td>Florida Department of Transportation</td>
</tr>
<tr>
<td>FHS</td>
<td>Federal Highway System</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>HAR</td>
<td>Highway Advisory Radio</td>
</tr>
<tr>
<td>HCM</td>
<td>Highway Capacity Manual</td>
</tr>
<tr>
<td>HCS</td>
<td>Highway Capacity Software</td>
</tr>
<tr>
<td>HDM</td>
<td>Highway Design Manual</td>
</tr>
<tr>
<td>I/C</td>
<td>Interchange</td>
</tr>
<tr>
<td>IRRS</td>
<td>Interregional Road System</td>
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<tr>
<td>ITMS</td>
<td>Intermodal Transportation Management System</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation Systems</td>
</tr>
<tr>
<td>ITSP</td>
<td>Interregional Transportation Strategic Plan</td>
</tr>
<tr>
<td>JCT</td>
<td>Junction</td>
</tr>
<tr>
<td>LOS</td>
<td>Level of Service</td>
</tr>
<tr>
<td>LU</td>
<td>Legacy for Users</td>
</tr>
<tr>
<td>MAX</td>
<td>Modesto Area Express</td>
</tr>
<tr>
<td>MCLTC</td>
<td>Mariposa County Local Transportation Commission</td>
</tr>
<tr>
<td>MPA</td>
<td>Mariposa</td>
</tr>
<tr>
<td>NB</td>
<td>Northbound</td>
</tr>
<tr>
<td>N/O</td>
<td>North Of</td>
</tr>
<tr>
<td>NTN</td>
<td>National Truck Network</td>
</tr>
<tr>
<td>OC</td>
<td>Over-crossing</td>
</tr>
<tr>
<td>OH</td>
<td>Overhead</td>
</tr>
<tr>
<td>PA&amp;ED</td>
<td>Project Approval and Environmental Document (phase)</td>
</tr>
<tr>
<td>PeMS</td>
<td>Performance Measurement System (Detection)</td>
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<tr>
<td>PHV</td>
<td>Peak Hour Volume</td>
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<tr>
<td>PID</td>
<td>Project Initiation Document</td>
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<tr>
<td>PM</td>
<td>Post Mile</td>
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<tr>
<td>PMS</td>
<td>Pavement Management System</td>
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<td>PM-2.5</td>
<td>2.5 Micron Diameter Particulate Matter (diesel exhaust)</td>
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<td>10 Micron Diameter Particulate Matter (dust)</td>
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<tr>
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<td>Route Concept Report</td>
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<td>RTE</td>
<td>Route</td>
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<tr>
<td>RTP</td>
<td>Regional Transportation Plan</td>
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<tr>
<td>RWIS</td>
<td>Roadside Weather Information System</td>
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<tr>
<td>SAFETEA-LU</td>
<td>Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users</td>
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<tr>
<td>SB</td>
<td>Southbound</td>
</tr>
<tr>
<td>SHOPP</td>
<td>State Highway Operations Protection Program</td>
</tr>
<tr>
<td>SHS</td>
<td>State Highway System</td>
</tr>
<tr>
<td>SJ</td>
<td>San Joaquin</td>
</tr>
<tr>
<td>SJCOG</td>
<td>San Joaquin Council of Governments</td>
</tr>
<tr>
<td>S/O</td>
<td>South of</td>
</tr>
<tr>
<td>SR</td>
<td>State Route</td>
</tr>
<tr>
<td>STA</td>
<td>Stanislaus</td>
</tr>
<tr>
<td>STAA</td>
<td>Surface Transportation Assistance Act</td>
</tr>
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<td>STANCOG</td>
<td>Stanislaus County Council of Governments</td>
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<tr>
<td>STRAHSMT</td>
<td>Strategic Highway Network</td>
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<tr>
<td>TA</td>
<td>Terminal Access</td>
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<tr>
<td>TBD</td>
<td>To Be Determined</td>
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<tr>
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<td>Tuolumne County Transportation Council</td>
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<tr>
<td>TCR</td>
<td>Transportation Concept Report</td>
</tr>
<tr>
<td>TDM</td>
<td>Travel Demand Model</td>
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<tr>
<td>TMS</td>
<td>Traffic Monitoring Station/Transportation Management System</td>
</tr>
<tr>
<td>TUO</td>
<td>Tuolumne</td>
</tr>
<tr>
<td>UC</td>
<td>Under-crossing</td>
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<tr>
<td>UTC</td>
<td>Ultimate Transportation Corridor</td>
</tr>
<tr>
<td>VIC</td>
<td>Volume to Capacity</td>
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<tr>
<td>VMT</td>
<td>Vehicle Miles Traveled</td>
</tr>
<tr>
<td>WB</td>
<td>Westbound</td>
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