

CITY COUNCIL AGENDA: AUGUST 6, 2013

SUBJECT: ACCEPTANCE OF THE STATE ROUTE 190 CORRIDOR STUDY  
AND COMMENCEMENT OF NEAR TERM PROJECTS.

SOURCE: PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION &  
COMMUNITY DEVELOPMENT DEPARTMENT - PLANNING  
DIVISION

**Background:**

The City of Porterville updated its General Plan in 2008 establishing policies and implementation strategies to guide the City's growth over the next twenty plus years. A major component of the General Plan is establishing a comprehensive circulation network throughout the City and surrounding County areas. The Circulation Element of the General Plan responds to the requirements of Government Code §65302 (b), which requires the identification of the "location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan."

The preparation of the Circulation Element in concert with the Land Use Element forms the roadmap for growth of the community. The vision for the growth of Porterville was cast into the plan through a significant public participation process and is being implemented with each development and public works project constructed in the city. State Routes 65 and 190, within the Porterville area, are regional connectors linking Porterville with the surrounding areas of the County and other communities. This study focuses on the future improvements to the SR 190 corridor.

State Route 190 is the major east-west transportation corridor in Porterville. Extending from State Route 99 near Tipton at its westerly terminus to Quaking Aspen Camp near Ponderosa, State Route 190 provides Tulare County a regional transportation corridor. The regional connectivity of State Route 190 intersects with facilities to extend Porterville's reach for importing and exporting goods beyond the region, throughout California, and beyond.

The importance of State Route 190 to the economic future and growth of Porterville cannot be understated. Employment opportunities associated with agricultural exports and ease of access to other elements of the state highway system generate significant annual tax revenues and create jobs for the City. Tourism drawn to the Sequoia National Forest includes visitors to the Eagle Mountain Casino on the Tule River Indian Reservation, and is an additional benefit to the local economy.

**SR 190 Corridor Study Process**

Staff has been working with the California Department of Transportation (Caltrans) to review the current function of SR 190 and consider different alternatives to accommodate the growth projected in the City's General Plan. The General Plan anticipated a series of

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improvements to SR 190, including new interchanges at Westwood Street, Hillcrest Street, and Road 284 (Reservation Road), and improvements to the interchange at Main Street. Grade separations considered in the General Plan were at Newcomb Street, Plano Street, and Indiana Street. For the last twenty-four months, City staff and Caltrans staff have looked in more detail at the opportunities and constraints associated with accessibility to SR 190 at key intersections. A series of modeling efforts have resulted in projected needs for immediate improvements, interim improvements, and ultimate designs that would function through the term of the General Plan.

The City's Circulation Element is a component of the General Plan and is a broad study of the planned circulation system within the City and the surrounding planning area. The Circulation Element, specifically related to the SR 190 corridor, has designated interchanges and grade separated crossing at all planned intersections along the corridor, except Jaye Street. An analysis of the highway segment's capacity indicates the need to widen SR 190 from two (2) lanes to four (4) lanes between Westwood Street and SR 65, widen from four (4) lanes to six (6) lanes from SR 65 to Plano Street, and widening from two (2) lanes to four (4) lanes from Plano Street to Reservation Road.

The State of California has statutorily identified the roadway system for the entire state. SR 190 is designated as part of the Freeway and Expressway System and a Scenic Highway between SR 65 and Death Valley, and State Highway from SR 99 to SR 65. As urbanization occurs between Westwood and SR 65, Expressway and Freeway Standards apply, which limit access to County roads, remove or significantly limit private driveway access and result in the closure of access at Newcomb Street and Prospect Street at its ultimate configuration. In the case of Porterville, this ultimate configuration will require the construction of frontage roads for the developed areas, as well as those areas yet to develop.

SR 190 from SR 65 to Reservation Road is considered a suburban, high-speed highway with slightly less stringent design standards than the Expressway or Freeway. Due to the tight spacing of surface streets intersecting with SR 190, improvements to one intersection or interchange results in required improvements to other connections. As a result, the series of improvements to be discussed for the high-speed highway east of SR 65 need to be discussed collectively. One project cannot be considered independent of the others. Having a suburban high-speed highway designation for the segment east of SR 65 would allow for private property access directly to the State Highway System where it is normally restricted and provide for at-grade, high-volume City street connections such as Jaye Street and potentially Blue Heron Parkway.

However, there remain important design guidelines that must be addressed as improvements are made along this segment of SR 190. For example, if the existing partial Main Street interchange is converted to a full access interchange, then the access to and from Plano Street must be severed. This is a result of the short distance between the Plano intersection and Main Street ramp access points that induce traffic weaving issues; traffic weaving is the process where vehicle cross lanes while entering and exiting the roadway. Closure of Plano Street would then require creating a new access point at the Hillcrest Street alignment as designated in the current adopted Circulation Element.



As a result of the mitigation improvements required by the Riverwalk Phase II EIR traffic study, and the need to follow through with the City's requirement per the Measure R Expenditure Plan, staff believes it was important to have a focused traffic study of the SR 190 corridor. Therefore, Caltrans has been commissioned, by TCAG, to perform this study and provide a logical plan to improve the corridor while wisely expending taxpayer dollars.

### **SR 190 Corridor Study Result**

As a result of Caltrans' efforts, it was determined that the existing and projected traffic volumes are less than envisioned initially by the adopted Circulation Element of the General Plan. With this determination, Caltrans provided information based on a three (3) tiered approach. The tiered approach allows flexibility in implementing corridor improvements from the near future to ultimate designation. A brief description of the tiered concept follows:

1. Near Term Projects - Improvements along SR 190 that need immediate attention and planning.
2. Interim Projects - Improvements along SR 190 that will experience failures during the life of the General Plan (2030).
3. Ultimate Projects - Those projects defined by the General Plan that will effectively serve the City well beyond the current 2030 General Plan horizon.

The concept was presented at the December 12, 2012, City Council Study Session. Caltrans has completed the corridor study and a copy of the document is attached for Council's review. The attached study, in concept, is substantially the same as presented to City Council during the Study Session. Staff is seeking Council's acceptance of the document and permission to "lock-in" funding sources for the necessary projects. The necessary projects are defined as **Near Term Project** in the corridor study and they are:

<b>Location</b>	<b>Description</b>
Westwood/SR 190 Intersection	Construct temporary improvements to improve access at this intersection. These improvements may entail a widened intersection controlled by a traffic signal or a roundabout.
Westbound Auxiliary Lane from Jaye St. to SR 65.	Extend the existing outside lane for westbound SR 190 from Jaye Street to SR 65 northbound ramp.
Plano/SR 190 Intersection	Construct 4 lanes on Plano St. with dual left turn and dedicated right turn lanes on all approaches w/ new traffic signals.
Main/SR 190 Intersection	Signalize the Ramp Terminals at Main St., construct dedicated left and right turn lanes for the eastbound off ramp.

In light of the recent passage of Amendment No. 3 to the 2006 1/2 Transportation "Measure R" Expenditure Plan, staff has had several conversations with Caltrans and TCAG regarding the next step in the process. TCAG is requesting that City Council accept the State Route Corridor Study and authorize TCAG to program the listed **Near Term Projects** in the upcoming State Transportation Improvement Program (STIP). In order to accomplish this, Caltrans will need to complete a Project Initiation Document (PID) by November of 2013.

A PID is a streamlined process using the Project Study Report-Project Development Support (PSR-PDS) as the baseline PID. The relatively new process will expedite the funding of projects through Project Approval-Environmental Document (PA-ED). It is also a necessary step in securing State and/or Measure R Regional funds. An approved PID is a required for any major work on the State Highway System (SHS) regardless of how it is funded.

Execution of a Cooperative Agreement between Caltrans and the City is a requirement before Caltrans will proceed with the preparation of the PID. A draft agreement is attached for Council's review. The cost to prepare the document is solely borne by the City and the fee is anticipated to be \$120,000. TCAG has partnered with the City on all efforts associated with the Highway 190 Corridor Study and has budgeted for the \$120,000 fee from TCAG Reserves.

### **SR 190 Corridor Right of Way Preservation**

Caltrans issued a Director's Policy Memo DP-91-1, "Transportation Corridor Preservation," dated January 9, 1991, that requires the Department of Transportation to work on a partnership basis with local land authorities to identify transportation corridors early, like the SR 190 Corridor Study, and to explore all appropriate means for acquisition and preservation of those corridors.

Caltrans Right of Way Department works with the Transportation Planning Department to preserve corridors through a variety of means including:

- Donations.
- Dedications.
- Transportation Impact Mitigations.
- Advanced Right of Way Purchases.

Effective July 1, 1993, Government Code Section 65081.3 and the Public Resource Code Section 33910 authorizes the Department to acquire land located within a designated corridor, like SR 190, of statewide or regional priority to be held and maintained for future transportation purposes. Caltrans Right of Way can acquire property for corridor preservation under AB 3719 only when authorized by the local entity. Moving forward with right of way acquisitions is good planning and will lessen the burden on tax payers as the properties are acquired to preserve the corridor.



**RECOMMENDATION:** That City Council:

- 1) Accept Caltrans' State Route 190 Corridor Study;
- 2) Approve moving forward with the **Near Term Projects**;
- 3) Approve entering into Cooperative Agreement or Agreements with Caltrans for the preparation of Project Initiation Document or Documents;
- 4) Authorize the Mayor and City Manager to execute the Cooperative Agreement or Agreements;
- 5) Authorize the Mayor and City Manager to execute a “draw down” agreement, if requested by TCAG, to access the \$120,000 Project Initiation Document (PID) fee offered by TCAG; and
- 6) Approve, in concept, the preservation of State Route 190 right of way between Westwood Street and Reservation Road; and
- 7) Authorize staff to work with the appropriate agencies to implement a State Route 190 Corridor Preservation Plan for Council's consideration at a later date.

**ATTACHMENTS:** State Route 190 Corridor Study/Feasibility Study  
**Near Term Projects** Conceptual Intersection Designs  
Sample Cooperative Agreement  
Government Code Section 65081.3

State Route 190 Corridor Study  
City of Porterville  
Traffic Engineering Feasibility Study

April 2013



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AM

PM

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**Preliminary Cost Estimate** – Construct a 4 lane roadway with a 14 foot median, and a signalized intersection at Route 190. Curb-gutter and sidewalk, street lights, a water main and limited storm drainage system improvements.

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2011 – AM/PM

2020 – AM/PM

2025 – AM/PM

2035 – AM/PM

## 1. INTRODUCTION

**1.1 Project Overview:** The purpose of this study is to determine the future transportation needs on State Route (SR) 190 from Westwood Street (PM 13.448) to Reservation Road (PM 21.10) which will jointly serve the planning needs of the California Department of Transportation (Caltrans) and complement the City of Porterville's General Plan. These limits represent the City of Porterville's 2030 General Plan planning area boundary along SR 190 most affected by development. Portions of this area are within the County of Tulare and would be subject to joint planning unless annexation occurred (See Figure 1 – Porterville General Plan, 2030 Circulation Network). The Study provides decision makers with general time frames when improvements are needed, right of way needed to mitigate increasing traffic volumes, as well as planning level cost for improvements along SR 190. Recommendations are provided regarding reasonable and practical solutions consistent with and complementary to the City's General Plan.

This study outlines general time frames for improvements that can be used to develop funding mechanisms. The uncertainty of the travel demand forecasting process and the duration of the current recession make it difficult to accurately predict the exact year improvements would be needed. The California Environmental Quality Act (CEQA) process will require local development to study potential impacts to the State Highway System. The City and Caltrans will be able to observe the rate of development and to appropriately time improvements through traffic impact studies and mitigation monitoring.

**1.2 Background:** The Tulare County Association of Governments (TCAG) proposed this study in response to the City's desire to complete the existing partial interchange at SR 190 and Main Street. The study was expanded to consider needs within the 2030 General Plan planning boundary consistent with the General Plan Circulation element. The 2030 roadway network included interchanges at four county roads connecting to SR 190. When the forecast volumes did not support interchanges by the 2035 study horizon year, near-term and interim improvements were included in the study, which consisted of intersection and roadway segment improvements.

The TCAG travel demand model was used to forecast future traffic volumes to the 2035 horizon year. The 2035 model is consistent with the 2030 General Plan roadway network; however, it uses 2035 socio-



economic data. Where the forecast volumes indicate roadway improvements would be needed, conceptual geometric designs were created, in general, to define the near-term, interim and long-term improvements along SR 190, unless otherwise noted. A planning level operational analysis was developed using Highway Capacity Manual algorithms. Cost estimates were developed for the purpose of comparing alternatives and for establishing budgets. All costs are in current dollars and would be subject to standard escalation rates.

The near-term concepts include enough detail to establish the scope to be used in a Project Initiation Document (PID), which would define in greater detail the cost, scope and schedule. The PID is a formal scoping document that is used in programming and leads to the environmental study and approval document, i.e. Project Approval and Environmental Document (PA&ED). The PA&ED is where detailed engineering analysis and environmental studies occur. Depending on the complexity of a project, PA&ED could be 12 to 24 months for small project, to more than 4 years for large projects.

## 2. EXISTING CONDITIONS

2.1 Land Use, Demographics and the Environment: Tulare County includes eight incorporated cities. Visalia is the largest with 124,000 people, followed by Tulare at 59,300 and Porterville with 54,200. East Porterville, a county island, includes approximately 6,800 people that when added to the City's population, makes the Porterville Urban Area the second largest in Tulare County.

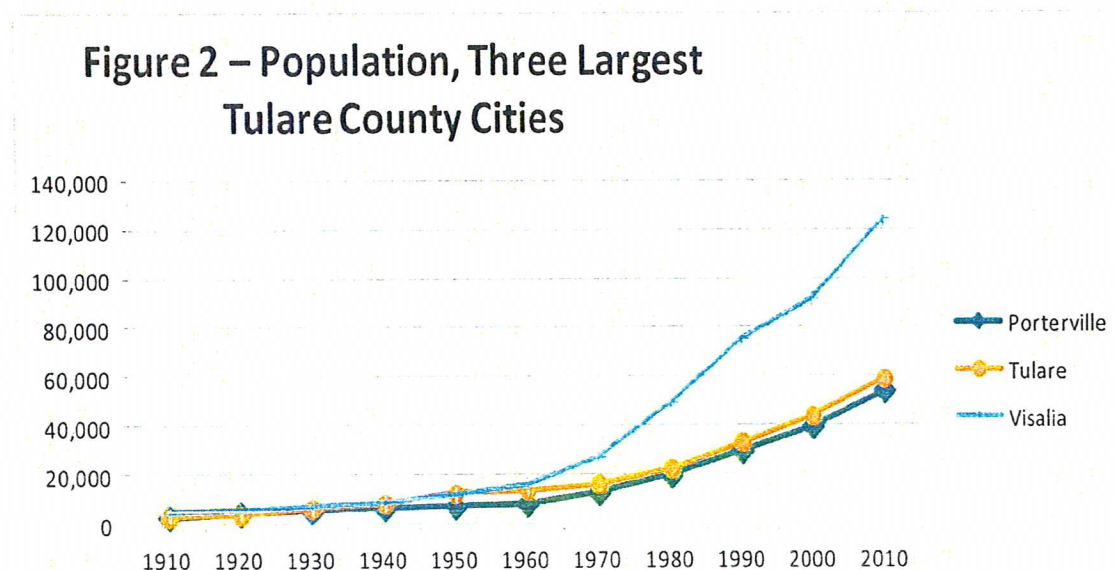


Figure 4-1  
2030 Circulation Network

- State Highway
- Major Arterial (6 lanes)
- Major Arterial (4 lanes)
- Parkway
- Minor Arterial (2 lanes)
- Collector
- Potential Interchange Improvements
- Grade Separation
- New Bridge
- Other Road
- Planning Area

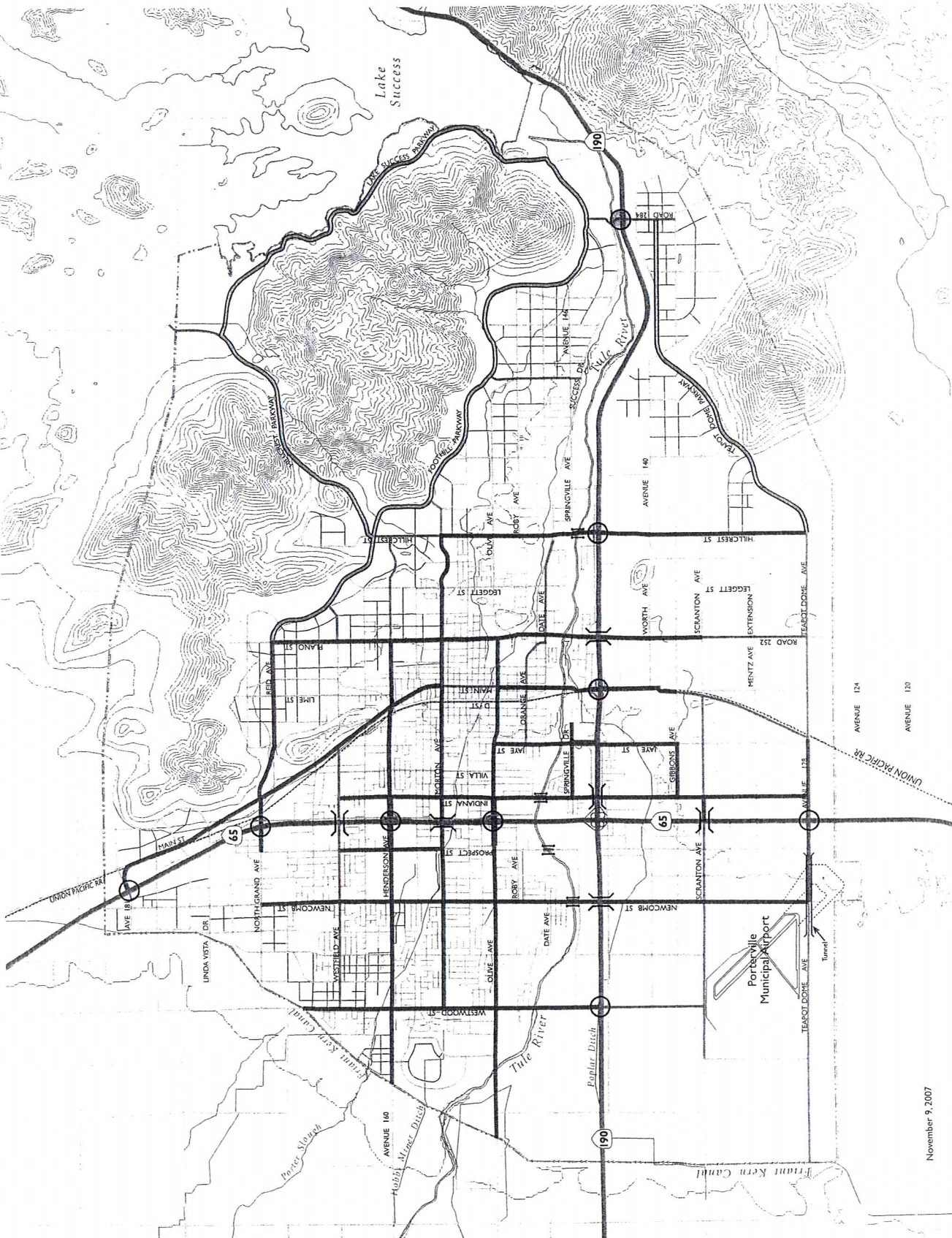
Note: Proposed roads are conceptual, subject to further engineering and environmental review.

Source: Dyett & Bhatia; Omni Means; 2007

Figure 1. Source: City of Porterville, California. Porterville 2030 General Plan, 2008. Figure 4-1, 2030 Circulation Network, p 69.



November 9, 2007





As reported by the California Data Research Center - Demographic Research Unit, the City of Porterville has grown at approximately four percent per year between 1960 and 1990, and three percent between 1990 and 2010. Continued growth could be expected at not less than 2.5 to 3.0 percent, leading to 2035 population estimates of 100,000 to 113,000, respectively.

The City of Porterville is bordered by natural and manmade features. On the western boundary is the Friant-Kern Canal, to the east is Lake Success and the beautiful Sierra Nevada Mountains. The City is bifurcated by SR 190 and SR 65, the Tule River and numerous sloughs or ditches. In addition, the abandoned San Joaquin Valley Railroad (old SPRR) paralleling Main Street and the Atchison, Topeka and Santa Fe Railway, which crosses SR 190 east of Plano Street also divides the City of Porterville along historic lines. These features have had and will continue to have significant effects on the circulation system and development patterns.

Currently, urbanization is located principally north of the Tule River. Large areas of agriculture, rural residential and conservation land are south of the Tule River with some urbanization south of SR 190 near Prospect, Jaye, Main and Plano Streets. The Jaye Street and SR 190 location includes the Riverwalk Market Place Shopping Center, the Walmart Distribution Center, Beckman Industry, and some medium and low-density residential housing. The Porterville College and Porterville Development Center are located south of SR 190, on Main Street and Blue Heron Parkway, respectively.

Travel patterns along SR 190 reflect the diverse character of the community - from commercial, industrial and agricultural trucking using the corridor; to recreational travelers accessing Lake Success and the Sierra Nevada Mountains; and to mineral resources like Porterville Rock. Peak hour traffic patterns using the SR 190/65 freeway-to-freeway interchange show a jobs-to-housing commuter pattern between the northern section of Porterville and East Porterville.

**2.2 Road Facilities:** SR 190 is eligible for designation as part of the Scenic Highway System from SR 65, east to SR 127 near Death Valley. The section between SR 99 and Balch Park Road is part of the Federal Aid Primary State Highway; it is designated as a Terminal Access Route providing Surface Transportation Assistance Act (STAA) truck access between SR 99 and SR 65 – and east to near Springville. It is the intent of the Legislature that this route serve the state's heavily traveled rural and urban areas, that it connect Porterville and other communities to regions of the state, and that it serve the state's economy by connecting centers of commerce, industry, agriculture, mineral wealth and recreation.

Today SR 190, between SR 99 to SR 65 is a two-lane conventional highway. At-grade intersections are located, in general, at one-mile spacing. Within the study limits beginning near Westwood Street (Road 224), left-turn channelization occurs on SR 190 at Newcomb Street (Road 232) and Prospect Street; the side streets do not include left-turn channelization. Westwood Street is the only four-way stop controlled intersection. The lanes on SR 190 are 12-feet wide and the outside shoulders are eight-feet wide. Land use along this segment is typically rural farmland with some rural residential abutting the highway. There is a rural residential area of development accessing SR 190 from Prospect Street that includes a community health center.

SR 190 between SR 65 and Blue Heron Parkway (Hospital Road) is a four-lane expressway with a partial interchange at Main Street and intersections located in general at one mile spacing. There are signalized intersections at Jaye Street and Plano Street with left-turn channelization on all legs. Side street stop controls occur at Martin Street and Blue Heron Parkway with left-turn channelization on SR 190. The lanes are 12-feet wide, outside shoulders eight-feet wide and the inside shoulder vary from one to five feet wide. Land use along this segment is urbanized.

Between Blue Heron Parkway and Reservation Road (Road 284), SR 190 is a limited access two-lane highway with some expressway characteristics. Utilities are principally located outside of the state right of way. The lanes are 12-feet wide and the outside shoulders are eight-feet wide. Reservation Road is under two-way stop control. A single lane roundabout has been programmed through the State Highway Operations and Protection Program (SHOPP) at this intersection with a target Construction date of 2015. Land use along this segment is rural residential and farmland. Very few private driveways connect to the state highway.

The City has a traditional hierarchy of street types or classifications including freeways, highway, arterials, parkways collectors and local streets. In and near SR 190 the following local road classifications are planned (existing conditions are typically less what are listed here):

- Westwood Street 4-lane arterial
- Newcomb Street 4-lane arterial
- Prospect Street 4-lane arterial
- Jaye Street 6-lane arterial north of SR 190 and 4-lane arterial south of SR 190
- Main Street 4-lane arterial
- Plano Street 4-lane arterial
- Hillcrest Street 4-lane arterial



There are three bridges within the study limits, Poplar Ditch (PM 13.69, Bridge Number 46-0052), SR 190/65 Separation (PM R15.210, Bridge Number 46-0225) and South Porterville/Main Street OH (PM 16.45, Bridge Number 46-002).

2.3 Roadway Volumes: The 2010/2011 SR 190 roadway volumes are shown below.

**Table 1 – Existing Segment And Ramp Volumes (2010/2011)**

LOCATION	AM		PM		ADT		TRUCK % TOT VEH
	EB	WB	EB	WB	EB	WB	
West of Westwood Street	202	209	287	193	3,103	2,900	
Westwood Street to SR 65	418	310	399	377	4,968	4,911	9.0%
EB Slip Off Ramp to SB SR 65	51		35		447		
EB Loop On Ramp from SB SR 65	448		421		5,682		
WB Slip On Ramp from SB SR 65		107		85		1,274	
WB Loop Off Ramp to SB SR 65		124		100		1,638	
EB Loop Off Ramp to NB SR 65	57		121		1,126		
EB Slip On Ramp from NB SR 65	57		154		1,448		
WB Loop On Ramp from NB SR 65		31		51		460	
WB Slip Off Ramp to NB SR 65		242		501		4,903	
SR 65 to Jaye Street	1,204	772	1,050	1,049	14,248	12,149	
Jaye to Main Street	932	969	876	1,123	11,655	13,432	
WB Loop On Ramp from Main Street		159		246		2,764	
EB Loop Off Ramp to Main Street	199		167		2,650		
Main to Plano Street	733	585	651	710	9,005	9,230	
Plano to Blue Heron Parkway	461	474	489	559	6,634	6,835	
East of Blue Heron Parkway	281	454	408	325	5,045	4,844	

**Table 2 – Existing Conditions (2011/2012) SR 190 Segment Levels Of Service (LOS)**

LOCATION	FACILITY	PEAK HOUR PERIOD	LOS	V/C
Westwood St to SR 65	2 Lane Conventional	AM	C	0.30
		PM	C	0.31
Blue Heron Parkway to Reservation Road	2 Lane Conventional	AM	D	0.31
		PM	D	0.34

HCS+ (Highway Capacity Software) Two-Lane was used for this analysis.

**Table 3 – Existing Conditions Intersection Levels Of Service (LOS)\***

LOCATION	STOP CONTROL	YEAR	PEAK HOUR PERIOD	LOS	DELAY (sec/veh)
Westwood St & SR 190	All-Way Stop Control	2012	AM	B	10.5
			PM	C	21.3
Jaye St & SR 190**	Signal	2008	AM	C	25.2
			PM	C	24.7
Main St & SR 190 WB On-Ramp (North)**	Side-Street Stop Control	2008	AM	-	0.7
			PM	-	0.8
Main St & SR 190 EB Off-Ramp (South)**	Side-Street Stop Control	2008	AM	-	5.0
			PM	-	2.4
Plano St & SR 190**	Signal	2008	AM	C	31.6
			PM	C	32.7
Blue Heron Parkway & SR 190	Side-Street Stop Control	2012	AM	B	14.2
			PM	C	18.0
Reservation Road	Two-Way Stop Control		AM	***	***
			PM	***	***

\*Synchro 6 was used for signal analysis and HCS+T7F for unsignalized stop controls.

\*\* Source of intersection traffic volumes: Ruettgers & Schuler Civil Engineers, Prepared for Impact Sciences, Inc. Traffic Study: Riverwalk Marketplace Phase 2 at Jaye Street and Vandalia Avenue, Porterville, California. March 4, 2010.

\*\*\* Roundabout is being constructed under SHOPP.

This study utilized existing traffic volume turn counts and traffic census data. The census data came from the 2010/11 federal fiscal year. The existing turn count data came from land use development



studies, dating back to 2008/09. Caltrans collected count data at Westwood Street, Blue Heron Parkway and Reservation Road.

#### 2.4 Existing Collision Data:

**Table 4 – Caltrans Traffic Accident Surveillance & Analysis System (TASAS) Summary  
County of Tulare, SR 190 Collision Data from October 1, 2007 - September 30, 2010**

LOCATION DESCRIPTION	POSTMILE LIMITS	COLLISION DATA SUMMARY			
		TOTAL	FATAL	INJURY	F+I
Westwood Street to SR 65	13.438 - R14.875	16	0	8	8
SR 65 to Blue Heron Parkway	R14.875 - 18.453	74	3	34	37
Westwood Street to Blue Heron Parkway	13.438 - 18.453	90	3	42	45

LOCATION DESCRIPTION	COLLISION RATES (COLLISIONS/mvm)					
	Actual			AVERAGE		
	FATAL	F+I	TOTAL	FATAL	F+I	TOTAL
Westwood Street to SR 65	0.000	0.64	1.29	0.025	0.34	0.80
SR 65 to Blue Heron Parkway	0.042	0.52	1.04	0.011	0.43	1.05
Westwood Street to Blue Heron Parkway	0.036	0.54	1.07	0.015	0.40	0.97

TASAS Table B shows a summary of collisions for the 3 year period from October 1, 2007 to September 30, 2010 for the limits of Westwood Street to Blue Heron Parkway (PM 13.438 – 18.453). Between Westwood Street and SR 65, the 2-lane conventional highway segment, there were a total of 16 accidents, no fatalities, 8 injury and 8 property damage collisions. The Actual Fatal rate in million vehicle miles (MVM) for this segment was below the Statewide average, while the Actual Fatal plus Injury and Total rates were above the Statewide averages for similar roadways. The primary collision factors were Other Violations with 6, and Speeding with 5, followed by Improper Turn and Failure to Yield with 3 and 2, respectively. The majority of the collisions were Broadside and Hit Object occurring principally during daylight and dry conditions.

Along the expressway segment, from SR 65 to Blue Heron Parkway (Hospital Road), there were a total of 74 accidents, 3 fatalities, 34 injury, and 37 property damage only collisions. The Actual Fatal and Fatal plus Injury rates were above the Statewide average rates, while the Total rate was slightly below the Statewide average. The primary collision factors are Other Violations with 19, Speeding with 19, and

Improper Turn with 17, followed closely by Influence of Alcohol with 11. The majority of the collisions were Hit Object, Rear End and Broadside occurring principally during daylight and dry conditions. Ten accidents occurred during roadway construction.

### 3. TRAFFIC VOLUME FORECASTING

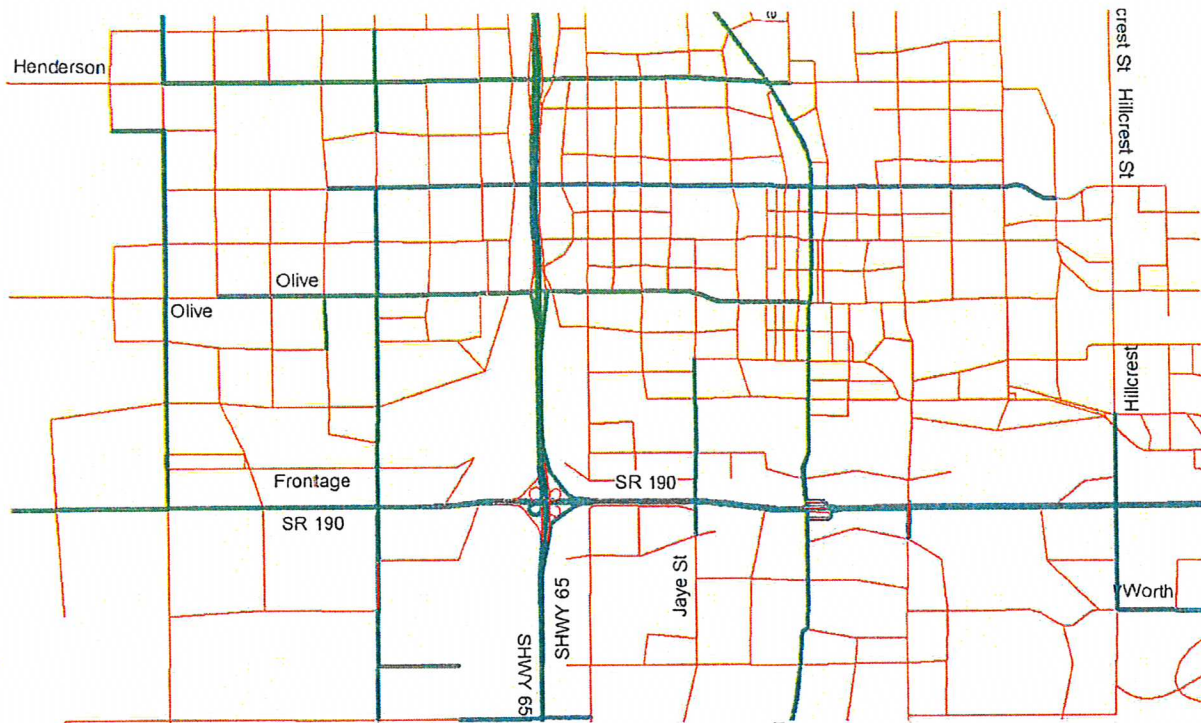
3.1 Travel Demand Model: Tulare County Association of Governments (TCAG) maintains and runs a travel demand forecast model for the Tulare County region. The model is used to forecast the demand for future transportation infrastructure by predicting future travel patterns based on a variety of factors including locally approved general plan land use entitlements, input from local planning departments on socio-economic growth areas, and state and federal data sources. Some of the forecast input variables include population, households, employment, school enrollment, income, traffic counts, speed, intersection configurations, and existing or planned transportation networks.

The current Tulare CAG model was updated in 2010. The model was calibrated to 2007 population, employment and traffic count data and back-checked or validated against socio-economic data. At the time of this study, Tulare CAG was developing a new 2040 model as part of an eight county San Joaquin Valley Model Improvement Program (MIP) effort. The eight SJ Valley Metropolitan Planning Organizations (MPOs) face the challenge of SB 375, California's law requiring the coordination of land use and transportation planning to support mandated greenhouse gas emission reductions. It is unlikely the new model will report significantly lower traffic volumes than the current model. While we expect different volumes from the new model, the anticipated differences should not be significant and as such should not change the character of the conceptual improvements; rather, only when improvements would need to be implemented and then, only from a planning perspective. Mitigation monitoring will be used to understand traffic volumes created by development and to more accurately define implementation of these or other improvements. Tulare CAG's MIP model may be available for use around July 2013.

Figure 3 below is from the 2035 model. The green lines are high volume roadways as shown in the model. SR 190 and SR 65 serve as the backbone of the City circulation system and provide connectivity to high volume local roads like Grand, Henderson, Olive, Westwood, Jaye, Main, Plano and Hillcrest Streets. These roadways would be subject to significant congestion without proper sizing.



**Figure 3 –Tulare CAG 2035 Travel Demand Forecast Model Roadway Network Screenshot (SR 190, City of Porterville)**



If the rate of growth in the City slows, the needed improvements could be delayed; conversely, if the rate of development occurs faster than expected, improvements could be needed sooner. In general, the needed improvements will not change, only the year of implementation.

**3.2 Roadway Network:** Highway network assumptions form a critical input insofar as the future year network behavior. The planned highway system starts with the locally approved and adopted Regional Transportation Plan (RTP). The regional transportation plan is a long-range transportation plan covering a 20+ year time span. A planning study such as this uses the RTP future network of roads and tests various scenarios in an attempt to meet the circulation needs of the City. This study details issues along SR 190 and does not consider needed improvements on other regionally significant roadways.

## 4. TRAFFIC OPERATIONAL ANALYSIS

**4.1 Overview:** This corridor study assesses the need for improvements for the 20-year planning horizon ending in 2035. Improvements range from the near-term needs of modifying the four-way stop

controlled intersection at Westwood Street to full freeway improvements shown in the 2030 General Plan Circulation Network. The options studied and summarized in this section address near-term, interim and long-term (ultimate) improvements. Each location was evaluated based on the criteria listed below:

- **Time frame** – near-term, interim and long-term. In general, near-term is from now to approximately 2015. Interim is approximately 2015 to 2035. Long-term is after 2035. The forecast volumes for these time frames were based on linear regression.
- **Operational Measures of Effectiveness (MOE)** – Acceptable operations are defined and operational needs are identified by measures of effectiveness for both highway segments and intersections. Highway segments are evaluated using Level of Service (LOS) and Volume/Capacity (V/C) ratio. Intersection LOS and the associated delay, both signalized and unsignalized, are reported in tables below for the entire intersection. More detailed analysis by lane groups provides an effective way to identify operational needs and geometric design solutions to meet these needs. Improvements and the timing of improvements are proposed based on critical lane group MOEs including delay, 95% queue length, and V/C ratio.

Level of service (LOS) is a qualitative measure used to gauge traffic operational performance by describing the driver's experience within a traffic stream in terms of speed and travel time, maneuverability in the traffic stream, interruptions and delay, and comfort and convenience. Six levels of service are defined by the Highway Capacity Manual (HCM) version 2010. Letters designate each level, from LOS "A" indicating traffic flow with little to no delay to LOS "F" denoting over-saturated conditions where traffic flow exceeds capacity, resulting in excessive delays and long queues. The HCM level of service criteria for intersections and freeways are presented in the following table.



**Table 5 – Level of Service Definitions for Intersections**

LOS	DESCRIPTION	CONTROL DELAY PER VEHICLE (sec/veh)	
		UNSIGNALIZED	SIGNALIZED
A	Traffic flows with very little delay and optimal speeds. Most vehicles do not stop at all.	0-10	<10
B	Traffic flows with very little delay and speeds may be slightly reduced. Very infrequent and short waits at traffic signals. More vehicles stop at intersections than for LOS A.	>10-15	>10-20
C	Traffic speeds continue to slow. Some vehicles may stop at this level, although many vehicles still pass through the intersection without stopping.	>15-25	>20-35
D	Congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	>25-35	>35-55
E	Low speeds and traffic backups at intersections. Often considered to be the limit of acceptable delay.	>35-50	>55-80
F	Very slow speeds and congestion. Long traffic backups. Very likely to wait for multiple greens to get through an intersection. This is considered to be unacceptable for most drivers.	>50	>80

Source: Highway Capacity Manual 2000

At this time, roundabouts use the same average control delay as unsignalized intersections. There is however no standard characterization of delay for roundabouts.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities. This target LOS is for a 20-year planning horizon which is normally required for capacity increasing projects. It begins on the date when constructed improvements are open to public use and end 20 years into the future. Caltrans defines the 20 year future date as the “design year.” Caltrans acknowledges that this may not always be feasible and recommends that lead agencies consult with Caltrans to determine the appropriate target LOS. At present, there are no constraints identified in this report that prohibit achieving the target LOS C/D. Caltrans will consider a 10-year “design period” for a special class of projects called operational improvement projects. These are improvements that typically address operational needs at spot locations such as adding a turn lane to an intersection.

The volume/capacity (V/C) ratio estimates the ability of a roadway to accommodate traffic volume demand. It compares roadway demand (vehicle volumes) with roadway supply carrying capacity. Volume refers to the number of vehicles using a roadway at the peak commute times, while capacity is its ability to support that volume based on the geometric design and number of lanes. V/C ratio is a principal measure of effectiveness for critical lane groups or the intersection as a whole. Critical lanes group is that portion of the roadway whose behavioral attributes (MOE) are distinctly different and operationally deficient in comparison to the intersection as a whole. The tables below show intersection LOS, which do not necessarily indicate acceptable operational attributes on each approach. Critical lane groups could indicate excessive delay or queuing problems under representing operational deficiencies. In general, a V/C ratio greater than 0.8 is near capacity and would require further analysis of other measures of effectiveness; V/C ratios greater than 0.9 is at capacity and above 1.0 is over capacity. This is true for the whole intersection or for critical lane groups.

Caltrans design criteria includes the 95<sup>th</sup>-percentile queue length when practicable. The 95th-percentile queue is defined to be the queue length (in vehicles) that has only a 5-percent probability of being exceeded during the analysis time period. It is a useful parameter for determining the appropriate length of turn pockets. Proper queue length sizing is a critical to prevent "queue blocking."

Delay is defined in the Highway Capacity Manual 2010 as "additional time experienced by a driver, passenger, bicyclist, or pedestrian beyond that required to travel at the desired speed." The delay encountered by a traveler at a signalized intersection constitutes the largest part of his or her travel time on non-freeway segments. Delay can be measured for lane groups or for the intersection as a whole. While the tables provide intersection delay, critical lane groups are evaluated by the engineer when considering the performance of an intersection. In general, delay has three main components: uniform stop delay, over-saturated delay and the stop delay caused by the initial queue from the previous cycles.

Delay associated with free flow conditions is evaluated in the report; it is proportional to the difference between free-flow speeds and congested speeds. Applicability of this measure of effectiveness would apply to long stretches of highway and freeway and has little bearing on the study limits.



Based on current and forecasted traffic volumes, the LOS for the various time frames was calculated using Highway Capacity Software or the equivalent in Synchro. Where roundabouts have been conceptually proposed, HCM 2010 methodologies were used. These methodologies are sufficient at a Planning level but could be improved upon with greater effort and detail at the project study phase.

- **Purpose and Need** - The purpose and need section is in many ways the most important chapter of an environmental document. It establishes why an agency is proposing to spend large amounts of taxpayers' money while at the same time causing potentially significant environmental impacts. A clear, well-justified purpose and need section explains to the public and decision makers that the expenditure of funds is necessary and worthwhile, and that the priority given to the project within a family of other needed highway projects warrants the expenditure. Without improvements, increasing traffic volumes would lead to congestion and excessive delay. The improvements are consistent with the General Plan Circulation Element and Caltrans Transportation Concept Report and are needed to mitigate increasing traffic volumes as the City grows. The need for the project is implicit and that excessive delay or congestion would occur without improvements. The purpose would be to address growing traffic volumes due to General Plan development.
- **Operational improvement or capacity increasing projects** – Geometric designs of conceptual projects are included in the appendix.
- **Cost** - Construction, right of way and support are included unless specifically noted. Support cost includes environmental, right of way, engineering, and construction. Environmental mitigation has not been considered. Cost is provided as a range.
- **Right of way impacts** – Right of way impacts are shown in the appendix and are roughly estimated based on current land use. Where land use or the underlying zoning were to change, the cost would likely increase especially where the existing land use is range land or farmland.

Beginning at Westwood Street and progressing to the east, the following was studied.

#### 4.2 Westwood Street:

Currently, Westwood Street is a four-way stop controlled intersection. Both SR 190 and Westwood Street are 2-lane roadways. The City General Plan designates Westwood Street as a future 4-lane arterial. This would be needed to support growth on the west side and mitigate limitations to the roadway network created by the Tule River and where state highway system expressway Standards on SR 190 preclude driveways and local road connections between Westwood and SR 65. Westwood Street forecast volumes indicate a morning commuter pattern of southbound Westwood to eastbound SR 190. The evening commuter pattern is a reciprocal of the morning, with large westbound SR 190 to northbound Westwood right turn movements. This study does not evaluate the MOEs of Westwood Street.

**Table 6 – Existing And Future Levels Of Service For SR 190 And Westwood St Intersection Without Improvements (All-Way Stop Control)**

YEAR	PEAK HOUR PERIOD	LOS	DELAY (sec/veh)
2012	AM	B	10.5
	PM	C	21.3
2015	AM	C	17.0
	PM	F	75.1
2020	AM	F	121.4
	PM	F	253.2

HCS All-Way Stop Control Analysis was used for this table.

The HCM analysis indicates that the existing four-way stop control intersection will experience excessive delays in 2015. Today, the westbound SR 190 to northbound Westwood Street right-turn movement occurs outside of the designated lane, on the right shoulder. Drivers have created in part a de facto right-turn lane. While the shoulder is not intended to function this way, drivers experience less delay when they use the shoulder. The HCM analysis indicates the 2015 LOS F is caused in large part by this right-turn movement. All of this suggests, the HCM predicted 2015 LOS of F could be slightly premature. By 2020, multiple movements fail leading to excessive delays. Where Caltrans requires a 10- or 20-year design life, postponing improvements to a later year would lead to larger, more costly improvements in the near term.



A single-lane roundabout was considered as a near-term operational improvement. The cost for a single-lane roundabout is estimated at \$3.0M, including engineering and right of way. Roundabouts normally operate with shorter vehicle delays compared to other traffic control and intersection types. In roundabouts, traffic no longer needs to stop. Roundabouts are based on the concept of yielding to traffic circulating within the roundabout. All approach movements are treated equally. Roundabouts have fewer conflict points than a signalized intersection and typically result in fewer severe accidents.

Roundabouts were evaluated using FHWA algorithms that were incorporated into the 2010 version of HCM, which are based on American drivers and their somewhat limited experience with roundabouts. As such, FHWA's estimates are slightly conservative.

A single-lane roundabout with two minor bypass legs should be evaluated in greater detail by 2015. A single-lane roundabout is predicted to fail before 2025. As we prepare this report, the high turn volumes predicted in the model are causing significant operational problems both with the near-term and interim improvements. If development on the west side of Porterville is not realized or if the commuter pattern is different from what is predicted in the model, the roundabout might provide the required minimum 10-year design life. At this point, the 2025 roundabout LOS would be F with a delay of 80.4 sec/veh in the morning and 51.0 sec/veh in the afternoon. Caltrans requires operational improvements, like a small intersection improvement project, to operate within the LOS D range for a minimum of 10 years. The preliminary concept does not meet the design period or LOS policies indicating more costly improvements could be needed.

Signalization might provide better operations along SR 190 and as such might be more beneficial for goods movement and commerce by favoring east-west travelers along SR 190. A signalized intersection was analyzed using the same volumes as the roundabout. The 2025 forecast volume, if validated at the project study phase, would require dual left-turn lanes from southbound Westwood to eastbound SR 190. Dual left-turn lanes require two receiving lanes on SR 190. This concept is presented as an interim Westwood improvement in the appendix. The interim cost estimate for this option is \$12.8M. Both roundabout and signalized intersection options would typically be considered as part of the project studies, which are incorporated in the Project Initiation Document (PID).

Whether it is a signalized intersection or a roundabout, the southbound to eastbound SR 190 turn volumes are defining the scope and need for improvements. This will eventually lead to the need for a 2-lane roundabout with 2 approach and departure lanes on SR 190 or a large signalized intersection.



The time frame is fairly consistent with the need to widen SR 190 between Westwood and SR 65, which when based on a “segment” analysis, showed the need for widening from a 2-lane conventional highway (2C) to a 4-lane expressway (4E) near 2025.

Every reasonable effort was made to try to separate the segment improvements (widening SR 190 to 4 lanes) from the intersection improvements because of the high cost to widen SR 190 to 4 lanes. It is the proposed development in west Porterville that is driving the need for improvements to the intersection and the SR 190 segment between Westwood and SR 65.

**Table 7 – 2035 Level of Service for the SR 190 and Westwood Street Intersection with a Four-Lane Signalized Improvement**

PEAK HOUR PERIOD	LOS	DELAY (sec/veh)
AM	C	28.6
PM	D	45.5

Synchro 8 was used for this analysis.

**Table 8 – 2035 Level of Service for the SR 190 and Westwood Street Intersection with a Multi-Lane Roundabout Improvement**

PEAK HOUR PERIOD	LOS	DELAY (sec/veh)
AM	F	110.7
PM	E	40.3

Synchro 8 was used for this analysis.

The long-term concept for this location is an interchange. An interchange will be warranted when the intersection can no longer serve the traffic volumes without excessive delay. Excessive delay is typically related to high turn volumes, suggesting the interchange will be needed after 2035. As such, an interchange is considered a long-term improvement. Preserving the interchange right of way from development would save the City, the County of Tulare, Tulare CAG, Caltrans, and the public between 20 and 40 percent of the cost of this interchange. Preventing development in the interchange right of way is important as well to private property owners who invest their money in the community. The present cost of an interchange is \$35M to \$40M, assuming minimal right of way costs.

#### 4.3 SR 190 from Westwood Street to SR 65 (2C to 4E Widening):

The existing two-lane conventional highway will need to be widened to four lanes in the interim period. Intersection improvements at Westwood Street would mitigate intersection delays in the near-term while the roadway segment would need added capacity. It is estimated that widening from a two-lane conventional highway (2C) to a four-lane divided expressway (4E) would be needed between 2020 and 2025, when the LOS drops to E. Caltrans and the City of Porterville will monitor development impacts through CEQA, over time leading to widening of the roadway. This study could be used to work with Tulare CAG to look for funding solutions and to preserve right of way. A divided expressway was chosen over a conventional highway because it is safer and will provide better mobility.

The table below estimates the two-lane conventional highway level of service.

**Table 9 – Existing and Future Levels of Service for SR 190 From Westwood Street To SR 65 without Improvements (Two-Way Two-Lane Highway Segment Analysis)**

YEAR	PERIOD	LOS	V/C
2011	AM	C	0.30
	PM	C	0.31
2015	AM	D	0.41
	PM	D	0.43
2020	AM	D	0.53
	PM	D	0.56
2025	AM	E	0.67
	PM	E	0.70
2030	AM	E	0.80
	PM	E	0.82
2035	AM	E	0.90
	PM	E	0.95

Highway Capacity Software (HCS) was used for this analysis.

The option to widen to the south of the existing roadbed was selected since it has the least impact on existing structures such as houses and can make the most use of the existing roadbed.

When the facility is widened to 4 lanes, Newcomb Street will likely need to be converted from an at-grade intersection to a grade separation, either as an undercrossing or overcrossing. Additionally, the Prospect Street and SR 190 intersection would be closed. Closure of these two at-grade intersections

would be required for safety and operational reasons. Land use planning should consider this ultimate condition; frontage roads would need to be built to serve existing development near Prospect and to provide connectivity to Westwood Street. A frontage road might extend the period of time that these intersections can remain open, potentially diverting some traffic away from the Newcomb and Prospect intersections. The present cost of a Newcomb Street grade separation is estimated at \$18M to \$20M.

#### 4.4 The SR 190-65 Interchange:

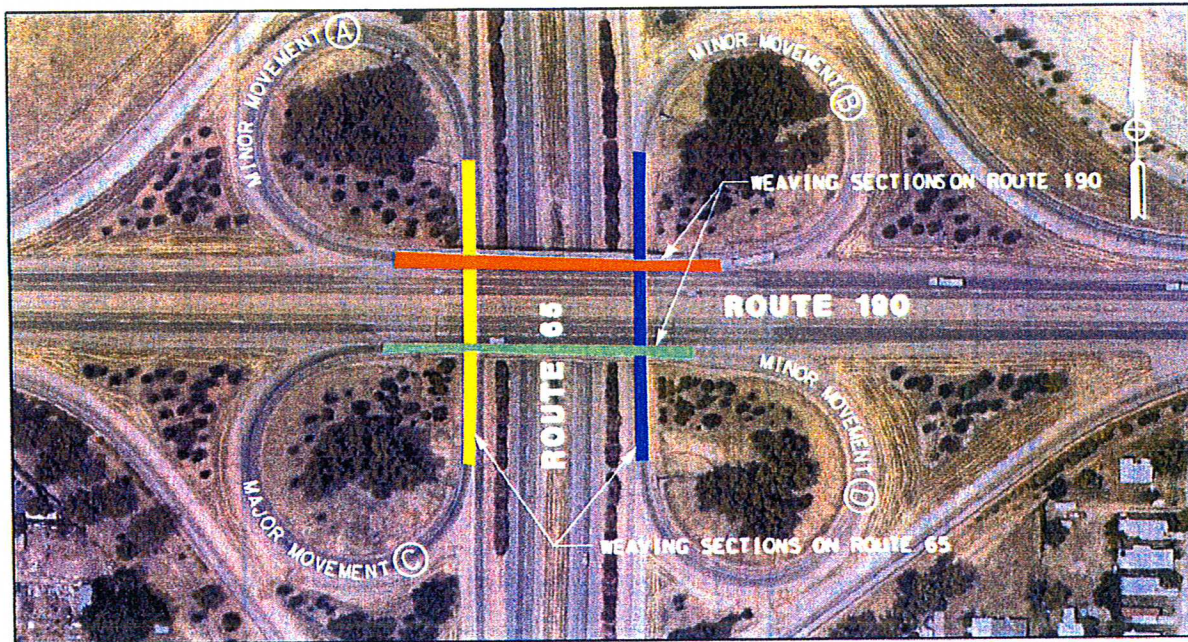
In general, cloverleaf interchanges were developed as low cost, compact designs that provided free-flow movements. It has four circular or loop ramps that provide for left-turn movements and 4 slip ramps for right-turn movements. This cloverleaf interchange has provided years of acceptable operations and should continue to do so for many more years. Today, two ramps carry the dominant volumes: the southbound SR 65 to eastbound SR 190 loop ramp, and the westbound SR 190 to northbound SR 65 slip ramp. The northern section of Porterville and East Porterville use these two ramps, balancing home-to-work or work-to-home commute hour trips.

As the City grows, traffic volumes in the interchange including the existing low volume loop ramps that provide connectivity to west Porterville, and south toward the airport will also grow. As they do, improvements to mitigate operational issues related to weaving that will occur on the short segment of road between the two loop ramps will be needed. Cloverleaf interchanges fail operationally when weaving volumes exceed the capacity of the weaving section and a rolling queue occurs. A rolling queue could occur on either SR 190 or the SR 65 frontage roads, where approach traffic slows to make room for entering loop ramp traffic. In the Bay Area and elsewhere, one or more of cloverleaf loop ramps have been replaced with high speed branch connectors, also known as flyovers.



The picture below shows the weaving sections.

**Figure 4 – State Route 190 – State Route 65 Interchange Weaving Sections**



The estimated volumes for the southbound SR 65 to eastbound SR 190 movement, identified as *major movement C*, will eventually grow beyond the capacity of its weaving section – the yellow segment above. As volumes grow, successfully moving the traffic through the yellow segment will then impact the downstream green segment on SR 190. Today, many of the loop ramps have very low traffic volumes. If urbanization occurs as proposed to the south and west, the minor loop ramp volumes will increase and weaving operations will degrade. Freeway-to-freeway ramp traffic volumes can be the most error-prone part of a travel forecasting. This is because the model often assigns traffic along the shortest travel path, not necessarily the fastest travel path, which is often an out-of-direction path when going through a freeway-to-freeway interchange. The table below shows the estimated traffic volumes and weaving level of service (LOS).

As the confluence of two inter-regional corridors, assistance from Tulare CAG would be needed to fund improvements.

**Table 10 – Levels of Service for SR 190 and SR 65 Interchange Weaving Segments, 2035**

Weaving Section	Peak Hour Period	Volume	LOS
Westbound (Orange)	AM	727	C
	PM	545	C
Eastbound (Green)	AM	1,153	D
	PM	1,111	D
Southbound (Yellow)	AM	1,381	E
	PM	1,128	B
Northbound (Blue)	AM	499	A
	PM	528	A

Solutions to the poor weaving sections include:

1. Create a collector-distributor road system on SR 190. Collector-distributor (CD) roads, an outer roadbed, move the operational breakdown away from the through lanes. Today, collector-distributor roads are on SR 65 but not on SR 190. This type of improvement can successfully manage poor operations as long as the CD road does not queue back into the freeway.
2. Eliminate one of the movements. This would typically mean taking the highest volume loop ramp and replacing it with a high speed branch. By eliminating the high volume conflict, two weaving segments are typically improved, leaving behind the lower volume loop ramps and permanently eliminating the weaving segment. Flyovers can be quite costly, typically \$45M to \$55M.
3. The third possible solution is to braid the high volume movement with one or more of the conflicting movements (low volume loop ramps). This could significantly lengthen the life of the cloverleaf, but it would depend on the downstream minor volume loop ramp and weaving that would remain. The probability of successfully improving this clover leaf with a single braided ramp appears low.

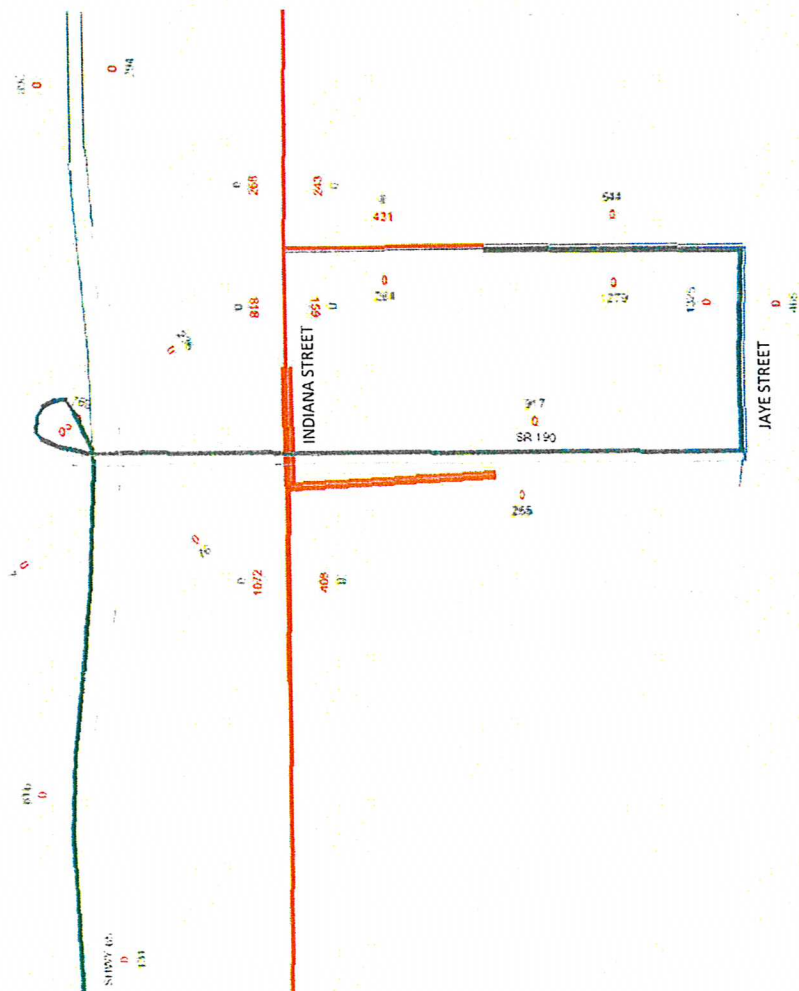
This study purposefully limits the analysis associated with improvements to the freeway-to-freeway interchange. The forecast volumes might under represent the demand and as such the need for improvements. To minimize costly improvements at this location, a strong local road system would provide the means for drivers to choose alternative and potentially shorter paths. The 2035 LOS estimates indicate an acceptable LOS on all but one movement. The queue was not analyzed and would



be the principal MOE. Special software like Free Queue or micro-simulation software would be employed to analyze the queue and was not used at this time.

4.5 Indiana Street Grade Separation – Overcrossing or Undercrossing: The 2030 General Plan Circulation Network includes a proposed grade separation of Indiana Street and SR 190. A grade separation at this location would connect small portions of the city – those south of Olive Street and north of Scranton Street. Long distance travelers would typically use SR 65 to avoid the narrow roadway and low-speed conflicts along Indiana Street. A model difference plot is shown below.

**Figure 5 – Indiana Ave Difference Plot using 2007 and 2035 TCAG Travel Demand Forecast Models**





The model difference measures the volume of traffic “with” and “without” the overcrossing. Red indicates increasing volumes along Indiana Street and green reflects decreasing traffic volumes at Jaye Street and SR 190. Today, all roadways are sized based on peak hour traffic volumes, as compared to AADT. The peak hour volume difference “with” Indiana Street was estimated at 192 AM trips and 248 PM trips. These are very low volumes and would not significantly benefit the Jaye Street - SR 190 intersection. The estimated daily volume (AADT) using the overcrossing was low at approximately 1500 vehicles. An overcrossing would cost approximately \$20M, not including the right of way cost that includes 22 residential houses and a portion of the new Walmart parking lot and access thereto. Based on engineering judgment, we would not recommend this roadway improvement but would defer to the residents and the elected officials as the benefits are more localized than interregional. Revisiting the overcrossing and its merits could occur with future General Plans as changing conditions might justify the overcrossing expense and impacts. We strongly support local road overcrossings with the state highway system and recommend overcrossings at not greater than ½ mile intervals.

#### 4.6 Jaye Street Intersection and SR 190 between SR 65 and Jaye Street:

The travel demand model indicates large peak hour traffic volumes will travel between the northern section of Porterville and East Porterville via the SR 65 freeway-to-freeway interchange. The forecasted volumes indicate the outer lanes (lane 3) should be connected to the Route 65 interchange ramp. An auxiliary lane will be needed in the westbound direction for route continuity and as part of balancing the traffic volume using the westbound to northbound branch connector. The outside lane would be connected as a “trap” lane to the northbound on ramp to Route 65. An eastbound auxiliary lane is needed at the Jaye Street intersection and would be connected to the southbound to eastbound SR 65 loop ramp.

Improvements along the south side of SR 190 assume the need for soundwalls because of the close proximity of residential housing. Typically, noise mitigation is needed and should be required as part of roadway widening or residential development in this area. Soundwalls are not used where retail, industrial or commercial property abuts the state right of way.

**Table 11 – Existing and Future Levels of Service for SR 190 and Jaye St Intersection Without Improvements (Signal Traffic Control)**

YEAR	PEAK HOUR PERIOD	LOS	DELAY (sec/veh)	V/C Ratio $\geq 0.80$	Queue length 95th (ft)
2008	AM	C	25.2		
	PM	C	24.7		
2015	AM	C	29.3		
	PM	C	29.5		
2020	AM	C	32.5		WBL-#208, NBL-#218
	PM	C	34.2		EBL-#196, NBL-#241
2025	AM	D	37.2	EBT-0.87, NBL-0.83	EBL-#178, EBT-#626, WBL-#263, NBL-#264
	PM	D	40.6	EBL-0.89, WBL-0.81, WBT-0.89, NBL-0.90	EBL-#240, WBL-#232, WBT-#655, NBL-#317
2030	AM	D	44.4	EBL-0.92, EBT-0.93, WBL-0.96, WBT-0.89, NBL-0.92	EBL-#215, EBT-#717, WBL-#325, WBT-#659, NBL-#320
	PM	D	53.4	EBL-0.98, EBT-0.88, WBL-0.80, WBT-1.02, NBL-1.03, SBL-0.81	EBL-#271, EBT-#643, WBL-#234, WBT-#797, NBL-#377, SBL-#181
2035	AM	E	60.5	EBL-1.01, EBT-1.04, WBL-1.06, WBT-1.01, NBL-1.02	EBL-#241, EBT-#844, WBL-#361, WBT-#849, NBL-#364
	PM	E	75.8	EBL-1.14, EBT-0.99, WBL-0.98, WBT-1.14, NBL-1.11, SBL-0.84, SBT-0.82	EBL-#314, EBT-#766, WBL-#292, WBT-#935, NBL-#425, SBL-#198, SBT-#217

Synchro 6 was used for signal analysis.

**Table 12 –Future Levels of Service for SR 190 and Jaye St Signalized Intersection With Improvements**

YEAR	Scenario	PEAK HOUR PERIOD	LOS	DELAY (sec/veh)	V/C Ratio $\geq 0.80$	Queue length 95th (ft)
2030	Add 3rd EBT and WBT Lanes, Add 2nd WBL Lane	AM	C	32.6		
		PM	D	38.0	EBL-0.80, WBT-0.84, NBL-0.85	EBL-#236, NBL-#312
2035	with 2030 Improvements	AM	D	36.3	WBT-0.83, NBL-0.84	EBL-#194, WBL-#148, NBL-#299
		PM	D	43.3	EBL-0.94, WBT-0.91, NBL-0.93, SBT-0.82	EBL-#279, WBT-#528, NBL-#382, SBT-#217

Synchro 6 signal analysis was used for this table.

Tables 11 and 12 provide the intersection LOS and delay, which are the principal indicators of the intersection MOEs. Additionally, where V/C ratios of approach movements exceed 0.8, often excessive queuing and delay on the same movements indicate poor operations on a portion of the intersection.



Over time, the number of lane(s) or lane groups that have V/C greater than 0.8 and the number of lane(s) or lane groups indicated with the “#” sign that the 95% queue is exceeded, signifies excessive delay is occurring leading to poor operations. Table 11 in the 2025 PM row, depicts 4 lanes or lane groups will have V/C ratios above 0.8 and these movements will experience excessive queues and delays. The intersection operations are failing by 2025 and some congestion is expected by 2020

A 2035 operational analysis of the Jaye Street intersection, Table 12, indicates three through lanes, dual left-turn lanes and dedicated right-turn lanes will be needed to maintain an acceptable LOS. Where three lanes are provided, as noted above between Jaye Street and SR 65, widening east of Jaye Street is needed as well. The easterly limits of the third lane can only be defined based on the City’s plan for the Main Street interchange. If the City plans to maintain access to Main Street and to improve or complete the existing partial interchange at Main Street; the westbound third lanes would likely begin at the westbound loop on ramp. In the eastbound direction, a lane reduction (dropping a lane) is a more complex issue. The decision regarding where to drop the lane will depend in large part on two variables:

1. What is the plan for the eastbound off ramp to the Main Street interchange?
2. Where do the eastbound traffic volumes decrease, at Main Street or Plano Street?

Accurately defining the eastbound lane drop location can only occur in the future when the issues related to Main and Plano Streets are resolved.

4.7 Main Street Partial Interchange and the Plano Street At-Grade Intersection: The City expressed a desire to complete the partial interchange at Main Street. A full interchange at Main Street would add the eastbound on ramp and westbound off ramp, and would require closure of the at-grade Plano intersection due to operational concerns and in compliance with Caltrans Standards. The loss of access resulting from the closure of the Plano at-grade intersection could be mitigated in part with the construction of a grade separation, either an undercrossing or overcrossing thereby permitting north-south movements on Plano Street.

Alternatives developed for this location tried to minimize direct and indirect impacts to Porterville College, Vandalia Elementary School and Pioneer Middle School.

Main Street is important to the downtown community. Today, the downtown area obtains access from SR 65 via Olive Street and Henderson Street, and internally from other local roads like Morton Street.



The Main Street traffic volumes going to and returning from downtown are fairly small today and are not expected to increase significantly at the Main Street interchange ramp termini. Most downtown areas generate destination trips, more than “pass-by” or “convenience” trips. If the volumes on Main Street were higher, completion of the partial interchange at Main Street could be warranted to meet traffic needs, without regard to the issues related to downtown.

If the City elected to place an interchange at Plano Street and remove the existing ramps at Main Street, instead of completing the partial interchange at Main Street, there could be local road and land use benefits that Caltrans cannot define at this time. We see potentially greater connectivity at Plano than at Main Street as the interchange would serve a larger area and because Main Street narrows to two lanes in the downtown area. The decision should include developing local circulation between Main Street and Jaye Street as well. Now that the railroad west of Main Street is abandoned, is there sufficient opportunity to backfill the local road grid between Jaye and Main Streets? Caltrans has no vested interest in the near-term decision and would defer to the elected officials and City staff in cooperation with the people of Porterville. Over time, the Plano Street at-grade intersection LOS will degrade, warranting a reevaluation of Main and Plano Streets interchange and grade separation issues. While vacant land exists at both Plano and Main Streets, it would be extremely beneficial to make a decision before development encroaches on the future interchange locations. Purchasing developed property is costly and could have a significant effect on individuals and business. Caltrans would encourage the City to continue discussion on this issue. Caltrans prepared a conceptual interchange design at Plano. No cost estimate was prepared. A very preliminary estimate would be \$45M to \$50M, which includes \$5M for right of way.

**Table 13 – Existing and Future Levels of Service for SR 190 and Plano St Intersection Without Improvements (Signal Traffic Control)**

YEAR	PEAK HOUR PERIOD	LOS	DELAY (sec/veh)	V/C Ratio > 0.80	Queue length 95th (ft)
2008	AM	C	31.6		
	PM	C	32.3		
2015	AM	D	38.0	SBT - 0.85	
	PM	D	39.4	EBL-0.83, NBT-0.88	EBL-#297, NBT-#395, SBL-#251
2020	AM	D	43.5	EBL-0.83, NBL-0.84, SBL-0.81, SBT-0.91	EBL-#270, WBT-#357, NBL-#294, SBL-#252, SBT-#491
	PM	D	47.4	EBL-0.92, NBL-0.83, NBT-0.94, SBL-0.89	EBL-#360, WBT-#372, NBL-#262, NBT-#524, SBL-#286
2025	AM	D	52.7	EBL-0.97, WBT-0.89, NBL-0.96, NBT-0.83, SBL-0.84, SBT-0.96	EBL-#337, WBL-#137, WBT-#433, NBL-#361, NBT-#503, SBL-#258, SBT-#583
	PM	E	60.0	EBL-1.02, WBT-0.94, NBL-0.96, NBT-1.02, SBL-1.01, SBT-0.80	EBL-#409, WBT-#460, NBL-#338, NBT-#664, SBL-#315, SBT-433
2030	AM	E	67.8	EBL-1.07, WBT-1.05, NBL-1.05, NBT-0.87, SBL-0.95, SBT-1.05	EBL-#376, WBL-#148, WBT-#554, NBL-#399, NBT-#565, SBL-#281, SBT-#675
	PM	F	80.3	EBL-1.15, WBT-1.04, NBL-1.04, NBT-1.13, SBL-1.19, SBT-0.99	EBL-#461, WBT-#549, NBL-#390, NBT-#801, SBL-#343, SBT-583
2035	AM	F	87.9	EBL-1.25, EBT-0.83, WBT-1.10, NBL-1.21, NBT-1.00, SBL-1.01, SBT-1.19	EBL-#429, WBL-#161, WBT-#641, NBL-#455, NBT-#677, SBL-#285, SBT-#777
	PM	F	108.9	EBL-1.37, WBT-1.09, NBL-1.32, NBT-1.26, SBL-1.31, SBT-1.08	EBL-#523, WBL-#114, WBT-#623, NBL-#475, NBT-#947, SBL-#357, SBT-694

Synchro 6 was used for signal analysis.

An interchange at this location was not evaluated

Table 13 indicates the intersection LOS in 2025 is E. The early onset of operational failure is occurring today on the northbound approach where queue blocking and excessive delay occur in the morning for a short period. Improvements at this location will be needed before 2020 as multiple approach movements fail.

The proposed near-term improvements at Plano Street include two through lanes and two left turn lanes on each approach with dedicated right turn lanes. This type of improvement if implemented by 2015 should provide the required 20-year “design period.” The cost for at-grade intersection improvements at Plano Street is estimated to be \$7M.

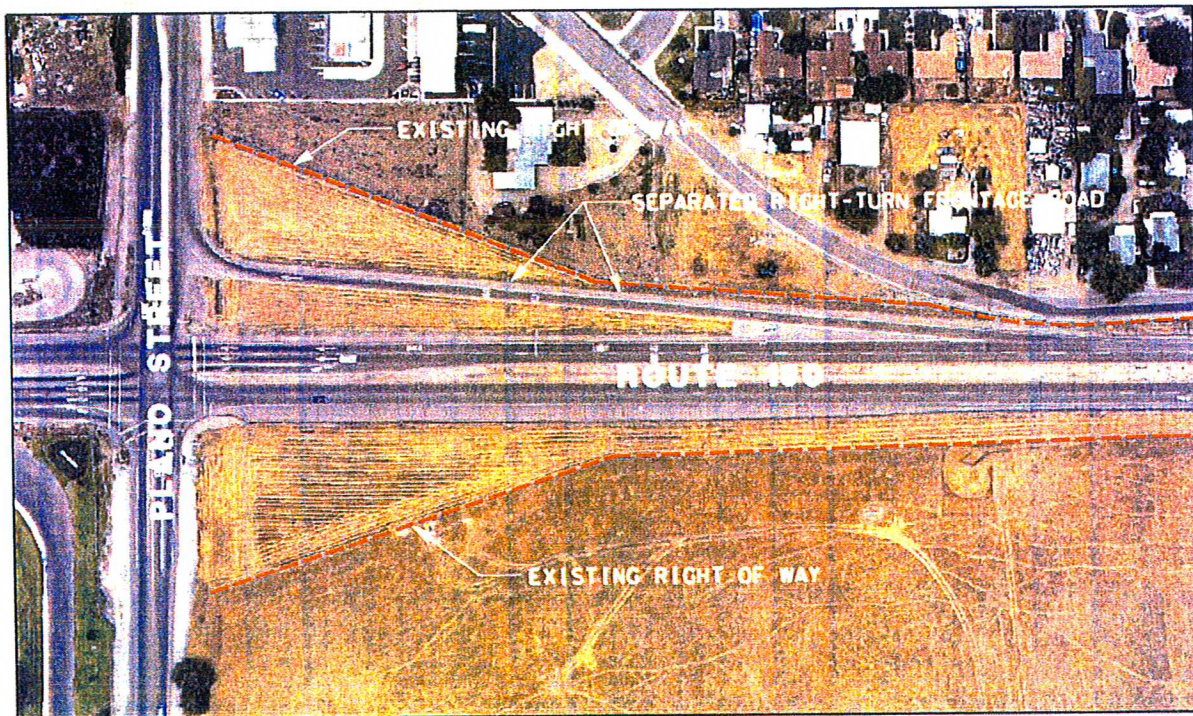
Beyond 2035, the City would need to widen the corridor to six lanes or would need to convert this segment to a four-lane freeway. Widening to six lanes would exceed the available right of way and



would be costly. The recommendation is to revisit this issue at the next General Plan and to setback development from the freeway for noise and air quality reasons, and to permit future widening should it be needed. Good planning should minimize impacts to homes and businesses whenever possible.

Noteworthy is the existing right of way at Plano Street. The right of way is flared out for what appears to be provisions for a future westbound off ramp and eastbound on ramps. This additional right of way suggests the original concept could have been to develop a split interchange: two movements (WB on ramp and EB off ramp) would occur at Main Street and two movements (WB off ramp and EB on ramp) would occur at Plano Street. Today, westbound SR 190 traffic has access to downtown Porterville through Plano Street via a separate frontage road similar to an off ramp, see figure below.

**Figure 6 – Existing Right of Way at Plano Street**



The split interchange concept is an approved Caltrans Standard, type L-5 (see HDM Figure 502.2 and following). This type of interchange uses frontage roads to connect traffic between Plano and Main Streets. The frontage roads function as part of an interchange system. At this location, there are no frontage roads apart from the east-west roadways of Vandalia Street to the north and College Street to the south. These two streets are poor representations of connecting roads that would complete a split interchange concept. Vandalia Street is a narrow residential street that if used would create cut-



through traffic. College Street runs along Pioneer Middle School and Porterville College. The L-5 concept or derivatives thereof is not considered viable because of the frontage road issues.

#### 4.8 Hillcrest Street At-Grade Intersection:

The City's 2030 General Plan Circulation Network proposes an interchange at Hillcrest Street. Caltrans would not be opposed to an interchange at Hillcrest Street. Caltrans would consider an at-grade intersection as an interim alternative. Adding access at Hillcrest Street would require a Tule River crossing, which would be expensive. Access at Hillcrest would extend the life of the at-grade Plano intersection by shifting some traffic to Hillcrest Street. Caltrans would require Martin Street to be closed, thereby moving the Martin Street traffic via frontage roads to Plano and Hillcrest Streets. Blue Heron Parkway might need to be closed as well, but could only be defined during formal project studies and as part of the "request for access" at Hillcrest Street.

As with other locations, the interim alternatives should include a roundabout along with a signalized intersection. Project costs are estimated to be \$20.3M for the roundabout and \$19.5M for the signalized intersection.

4.9 SR 190 – Blue Heron Parkway to Reservation Road (2C to 4C Widening): SR 190, East of Blue Heron Parkway to Reservation Road will need to be widened to four lanes. Along this segment, the current exclusion of utilities and the limited private property access is typical of expressways. The existing two-lane roadbed is located asymmetrical in the existing right of way suggesting two new lanes should be added south of the existing roadbed. This could only be accomplished within the existing right of way with a narrow, highway median. Expressways and freeways typically have wider medians and would be associated with higher speed or rural settings. The highway median alternative is proposed; however, approvability of the narrower median would occur at the project study phase. The suburban characteristics suggest the use of highway standards might be approvable as a slightly lower speed might be expected. The proposal for this segment of SR 190 is a high quality, limited access highway that could be built within the existing right of way.

Table 14 depicts the LOS and V/C ratio for various years. After 2020 the LOS falls to "E" warranting widening from 2 lanes to 4 lanes.

**Table 14 – Existing and Future Levels of Service for SR 190 from Blue Heron Parkway to Reservation Road without Improvements (Two-Way Two-Lane Highway Segment Analysis)**

YEAR	PERIOD	LOS	V/C
2012	AM	D	0.31
	PM	D	0.34
2015	AM	D	0.36
	PM	D	0.39
2020	AM	D	0.43
	PM	D	0.47
2025	AM	E	0.51
	PM	E	0.56
2030	AM	E	0.59
	PM	E	0.64
2035	AM	E	0.67
	PM	E	0.72

Highway Capacity Software (HCS) was used for this analysis.

If development is proposed along this segment, access should be taken from local roads. If residential housing is proposed adjacent to the highway, homes should be setback to minimize the effects of highway noise and air quality concerns. Soundwalls are typically used when urban residential housing is contiguous to the right of way. Soundwalls would block the view shed of the mountains and the scenic value of the river corridor. As such, rural ranchette or significant residential setbacks are encouraged to maintain the view shed and community identity.

The General Plan proposed an interchange at Road 284 (Worth Road) and SR 190. The traffic volumes do not warrant an interchange. Caltrans is in the process of developing a single-lane roundabout through the SHOPP. Over time, the roundabout would need modifications to add capacity. This study did not evaluate intersection improvements that could be needed once the roundabout is complete. Caltrans will work with the City and County through the intergovernmental review process (IGR) and development studies for future intersection improvements.

## 5. COSTS

Cost estimates were developed for each location for near-term, interim and long term improvements. The cost estimates use Caltrans six-page format, which at this stage can imply more accuracy than is available at this time. The unit cost used to estimate these projects is based on recessionary unit prices, from Caltrans 2009-2011 database. The right of way estimates came from internet real estate websites. All costs are in current dollars and would be subject to standard escalation rates. The current escalation rate is 3% per year. No separate inflationary index for real estate is available or provided.

Changes in land use have a potentially greater affect on the project cost than the inflation index and as such right of way preservation and irrevocable offers of dedication should be used to minimize runaway pricing. Under the California Subdivision Map Act (Government Code 66410-66499.38), the land use approval agency can approve development on the condition that the developer dedicate land for the circulation element. State and local agencies should make every reasonable effort to plan in such a way so as to minimize purchasing private homes or businesses and to develop adequate setbacks.

The cost estimates can be used to compare alternatives, to look for funding or as the basis of budgeting and to establish priorities. The table 15 below summarizes the six page estimates and alternatives by location and time. The appendix contains a more comprehensive break down of the cost estimates and the alternatives.

## 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Overview: Much of SR 190 is rural or suburban as noted by the existing two lane highway and typically rural land use characteristics, except between SR 65 and Blue Heron Parkway. If the land use changes, consistent with the General Plan, the forecast volumes along the corridor could easily be realized. The conceptual geometric designs developed and discussed above are based on the 2035 horizon year. If implementation of the near-term improvements are delayed much beyond 2015, the "design year" would move beyond 2035 and the forecast volumes would grow potentially affecting the scope and cost. As such, the near-term projects are more sensitive to changes in scope. In comparison interim and ultimate projects will be reevaluated in the future and the concepts provided are more useful for planning rather than programming.



Listed below are the proposed improvements for each time frame. They are listed in a suggested order of importance. They are presented without bias and do not represent Caltrans' position or priorities. Caltrans is required by law to review development impact studies through the CEQA process. Based on this study, the City can work with Tulare COG to develop RTP fiscally constrained projects and develop funding strategies that include local development contributions. Where projects are predetermined in the RTP and fiscally constrained, the development community and the City of Porterville can more easily move through the CEQA process with Caltrans.

**Table 15 – Conceptual Roadway Improvements And Total Project Capital Outlay Costs**

	Near Term present - 2015		Interim 2015-2035		Ultimate beyond 2035	
	Roadway Improvements	Cost (\$M)	Roadway Improvements	Cost (\$M)	Roadway Improvements	Cost (\$M)
Westwood St	Construct Temporary Improvements	\$3.0	Widen and Signalize	\$12.8	Construct Interchange	\$35.2
Newcomb St			Construct Overcrossing	\$17.7		
Prospect St			Remove Access			
SR 190 from Westwood St to SR 65			Widen from 2C to 4E	\$32.9		
SR 190 from SR 65 to Jaye St	Construct WB Auxiliary Lane	\$1.2	Construct EB Auxiliary Lane	\$8.7		
Jaye St			Upgrade Intersection			
Main St			Signalize Ramp Terminals	\$1.1	Complete Partial IC (double cloverleaf)	\$34.4
					or Complete Partial IC (partial cloverleaf/diamond)	\$37.4
Plano St	Widen and Signalize	\$7.0			Construct Undercrossing	\$24.9
					or Construct Interchange	\$45.0
Martin St			Remove Access			
Blue Heron Parkway			*			
Hillcrest St			Construct 4L, and Signalize or Construct Roundabout	\$25.3	Construct Interchange	\$44.6
Hillcrest St to Reservation Rd			Widen from 2C to 4E	\$22.3		

\*To be evaluated at a later time.

6.2 Near-Term Improvements: The study results show the following priorities for near-term improvement 1) Improve the at-grade Plano intersection. Increasing the capacity of this intersection could potentially extend the life of the intersection until 2035. 2) Improve the Westwood Street at-grade intersection at SR 190. 3) Finally, extend the westbound auxiliary lane between Jaye Street and SR 65.

6.3 Interim Improvements: The interim improvement projects are typically larger and much costlier.

1) The Main Street off ramp queue and delay will become problematic. As traffic volumes increase on Main Street, the gap for cars to clear the ramp terminal will decrease resulting in excessive delay. The scope for improving the ramp(s) is small and as such is not expensive or time consuming. A possible funding source for the City is fair share mitigation fees from development.

2) The Hillcrest Drive river crossing and at-grade intersection with SR 190 would significantly improve East Porterville circulation. Caltrans freeway agreement would need to be modified to permit a new access opening. In addition, this project would be quite costly.

3) The third priority is the roadway segment and intersection improvements between SR 65 and Westwood. This includes both widening SR 190 from 2 lanes to 4 lanes and improving the Westwood intersection beyond the near-term improvements listed above; it also includes the Newcomb Street overcrossing. This will be a regionally significant and costly improvement that is important to the development community and local circulation. As development occurs south of the river and west of SR 65, the right of way for SR 190 should be set aside in the tentative map phase. Owning the right of way will significantly reduce the project cost.

Area wide fee structures are much better than "fair share" contributions that occur on a project by project basis. Where a local traffic impact fee structure is comprehensive, traffic impact studies can be streamlined permitting development to precede quickly and with reduced CEQA development costs. A traffic impact mitigation fee program is the most reasonable way to approach large improvement projects and to leverage Tulare CAG's funding sources.



4) An eastbound auxiliary lane will be needed between SR 65 and Jaye Street. This improvement would extend the life of the weaving section on SR 190 at the freeway-to-freeway interchange and address the need for additional capacity at the Jaye Street intersection. Further engineering studies will be needed to determine where to drop the eastbound lane, east of Jaye Street. This study indicates that near 2025, the Jaye Street intersection will need capacity increasing improvements. If West Porterville does not develop as projected, this improvement could be prioritized above the interim priority 3, listed above.

#### 6.4 Ultimate Concepts:

The 2035 population projections for Porterville exceed 100,000 people. State Routes 65 and 190 represent a significant, historic investment in the circulation system. As the City grows, additional interchanges will be needed to manage traffic linking the local road network to the state highway system. It will be critical for the City of Porterville to protect the right of way when farmland is rezoned or subdivision maps are created. To minimize unnecessary impacts associated with high costs and adverse taking of homes and businesses, right of way needs to be dedicated in accordance with associated government codes. Some local agencies in the area have successfully built multi-lane urban freeways without taking any homes and businesses using good planning.

The interchange geometric design concepts are provided to meet the operational needs of the City and represent a basis for protecting right of way.

One present concern is the capacity of Westwood to manage the yet unknown north-south volumes along with the interchange traffic. The land use incorporated in the 2035 model does not represent build out of the area; moreover, the forecast volumes along Westwood are quite low. Where possible, the City should limit direct access to Westwood (no driveways and limited city street connections), reducing operational impediments along Westwood. Interchanges are typically more compatible with limited access arterials rather than collectors because of the cross-freeway traffic volume and the high volumes accessing SR 190. This would be an important consideration in the City's evaluation of land use planning on Westwood.

This study considered the options of completing the Main Street partial interchange or constructing an interchange at Plano St. The City of Porterville can use this study to define a local preference in their circulation element.. Doing so would permit inclusion of the project in



the Regional Transportation Plan (RTP) and the City can work toward protecting the right of way and developing a funding mechanism.

**SR 190 Corridor, City of Porterville  
Project Cost Estimate Summary**

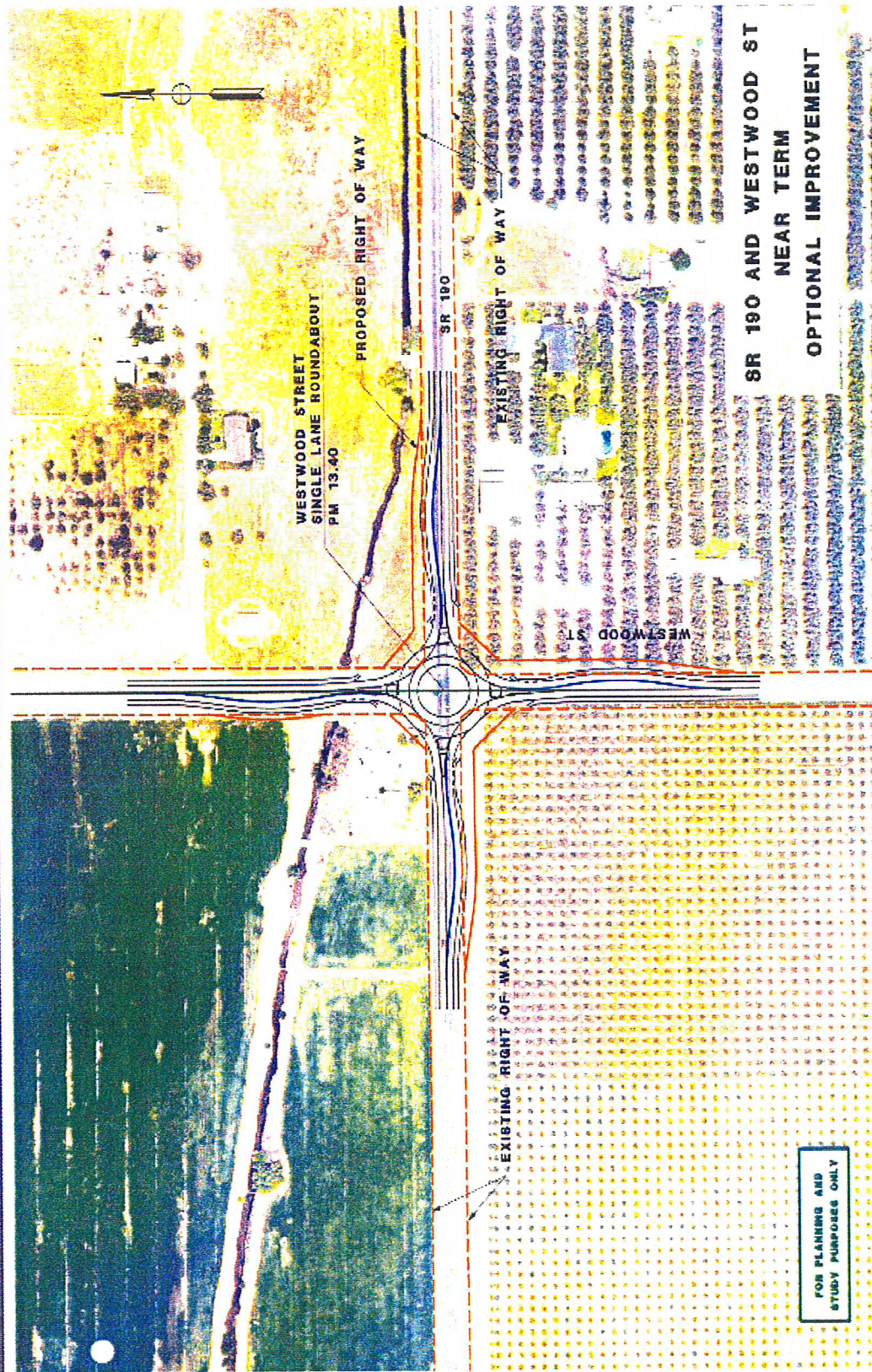
Legend	Near Term
	Interim
	Ultimate

Present Worth Values Provided											
Location	Limits	Description	Roadway Items	Roadside Items	Roadway Additions	Total Roadway	Total Structures	Subtotal Construction Costs	Total Right of Way	Support Cost	Total Project Capital Outlay Costs
Westwood	PM 13.4 Intersection	Construct a temporary improvement to mitigate near term impacts	\$ 920,000	\$ 450,000	\$ 310,000	\$ 1,680,000	\$ -	\$ 1,680,000	\$ 235,000	\$1,053,250	\$ 2,968,250
Westwood	PM 13.4 1000 ft north and 1000 ft south on Westwood Street at SR 190	Widen from 2 lanes to a 4-lane roadway and a signalized at-grade intersection at Route 190 with dual left-turn lanes on all approaches. Provide curb-gutter, sidewalk, street lights on Westwood St.	\$ 4,102,850	\$ 354,000	\$ 2,406,699	\$ 6,863,549	\$ -	\$ 6,864,000	\$ 2,984,000	\$2,954,400	\$ 12,802,400
Westwood	PM 13.4 Westwood Street Interchange	Construct spread diamond interchange at Westwood Street, realign the canal and relocate utilities.	\$ 11,397,050	\$ 440,000	\$ 7,043,045	\$ 18,880,095	\$ 4,950,000	\$ 23,831,000	\$ 3,204,000	\$8,110,500	\$ 35,145,500
Newcomb	Newcomb St Overcrossing from south of the Tule River on the north, to just south of the Poplar ditch to the south (PM 14.4)	Construct a 4 lane overcrossing with a 18 foot median, curb-gutter, sidewalk, street lights, and realignment of sewer line in Newcomb.	\$ 5,263,520	\$ 210,000	\$ 3,256,744	\$ 8,730,264	\$ 4,230,000	\$ 12,961,000	\$ 670,000	\$4,089,300	\$ 17,720,300
SR 190 Widening from Westwood to SR 65	SR 190 from 3000 ft west of Westwood St to SR 65	Widen SR 190 from 2 Lane Conventional to 4 Lane Expressway	\$ 12,526,204	\$ 662,000	\$ 7,846,981	\$ 21,035,185	\$ -	\$ 21,035,185	\$ 4,281,000	\$7,594,856	\$ 32,911,041
WB Auxiliary Lane	From the WB Route 190 to Route 65 off ramp departure point, to 2000 feet east.	Construct an auxiliary lane and new shoulder.	\$ 539,451	\$ 5,000	\$ 198,725	\$ 743,176		\$ 744,000	\$ 13,000	\$454,200	\$ 1,211,200
EB Auxiliary Lane	From the Loop Ramp at Route 65 to the Jaye Street Intersection	Construct an auxiliary lane and new shoulder, add retaining walls and soundwalls, and reconstruction part of the NB Route 65 to EB Route 190 slip ramp.	\$ 4,672,395	\$ 5,000	\$ 1,952,812	\$ 6,630,207		\$ 6,631,000	\$ 35,000	\$1,999,800	\$ 8,665,800
Jaye Street											
Main Street	PM 16.4 Main Street Partial Interchange ramp terminals	Construct an eastbound off ramp right-turn lane, handicap ramps, and signalize the eastbound off ramp as well as the westbound on ramp termini.	\$ 534,825	\$ -	\$ 167,133	\$ 701,957	\$ -	\$ 702,000	\$ 13,000	\$429,000	\$ 1,144,000

Location	Limits	Description	Roadway Items	Roadside Items	Roadway Additions	Total Roadway	Total Structures	Subtotal Construction Costs	Total Right of Way	Support Cost	Total Project	
											Capital Outlay	Costs
Main Street	PM 16.4 Route 190 at Main Street, complete the partial interchange	Construct double cloverleaf interchange, with loop on ramps in the northeast and southwest quadrants. The existing bridge would be widened on the north and south side of Route 190.	\$ 11,662,466	\$ 230,000	\$ 6,421,932	\$ 18,314,398	\$ 5,136,250	\$ 23,451,000	\$ 2,981,000	\$7,929,600	\$ 34,361,600	
Main Street	PM 16.4 Route 190 at Main Street, complete the partial interchange	Construct partial cloverleaf interchange north of Route 190, and a diamond interchange south of Route 190. The existing bridge would be widened on the north side of Route 190.	\$ 13,104,306	\$ 255,000	\$ 7,214,025	\$ 20,573,331	\$ 3,138,750	\$ 23,713,000	\$ 5,085,000	\$8,639,400	\$ 37,437,400	
Plano Street	PM 16.9 Plano Street Under Crossing	Excavate along the existing Plano roadbed and adjacent parcels, to construct a divided 4 lane collector. A raised 12 foot median, (4) 12-foot lanes, 8-foot shoulders and sidewalks.	\$ 5,329,950	\$ 324,000	\$ 3,053,133	\$ 8,707,083	\$ 4,929,000	\$ 13,637,000	\$ 5,490,000	\$5,738,100	\$ 24,865,100	
Plano Street	PM 16.9 Plano Street At-Grade intersection Improvements	Construction 4 lanes on Plano with dual left and dedicated right turn lanes on all approaches. Signalize the intersection.	\$ 2,770,300	\$ 40,000	\$ 1,517,562	\$ 4,327,862	\$ -	\$ 4,327,862	\$ 485,000	\$2,213,917	\$ 7,026,779	
Hillcrest Drive	Hillcrest Drive from Lake Success Road to Worth. Close Martin Street. Connect Vandalia to Hillcrest and improve Pettis, Starks and Pike Streets.	Construct a 4 lane roadway with a 14 foot median on Hillcrest with a signalized intersection at Route 190. Curb-gutter and sidewalk, street lights, a water main and limited storm drainage system improvements.	\$ 5,306,300	\$ 78,000	\$ 2,907,522	\$ 8,291,822	\$ 8,602,000	\$ 16,894,000	\$ 2,577,000	\$5,841,300	\$ 25,312,300	
Hillcrest Drive	PM 17.9 1100 feet north and south of Route 190 at Hillcrest	Construct double cloverleaf interchange, with loop on ramps in the northeast and southwest quadrants.	\$ 13,928,600	\$ 490,000	\$ 8,795,346	\$ 23,213,946	\$ 6,292,000	\$ 29,506,000	\$ 4,778,000	\$10,285,200	\$ 44,569,200	
SR 190 Widening from 2 lanes to 4 lanes.	Hillcrest PM 17.9 to Reservation Road PM 21.1	Widen from 2 lanes to 4 lanes with a divided median.	\$ 10,204,672	\$ 512,000	\$ 6,376,420	\$ 17,093,092	\$ -	\$ 17,093,092	\$ 26,000	\$5,135,728	\$ 22,254,820	



# Westwood St. - "Near Term" Project (Single Lane roundabout)



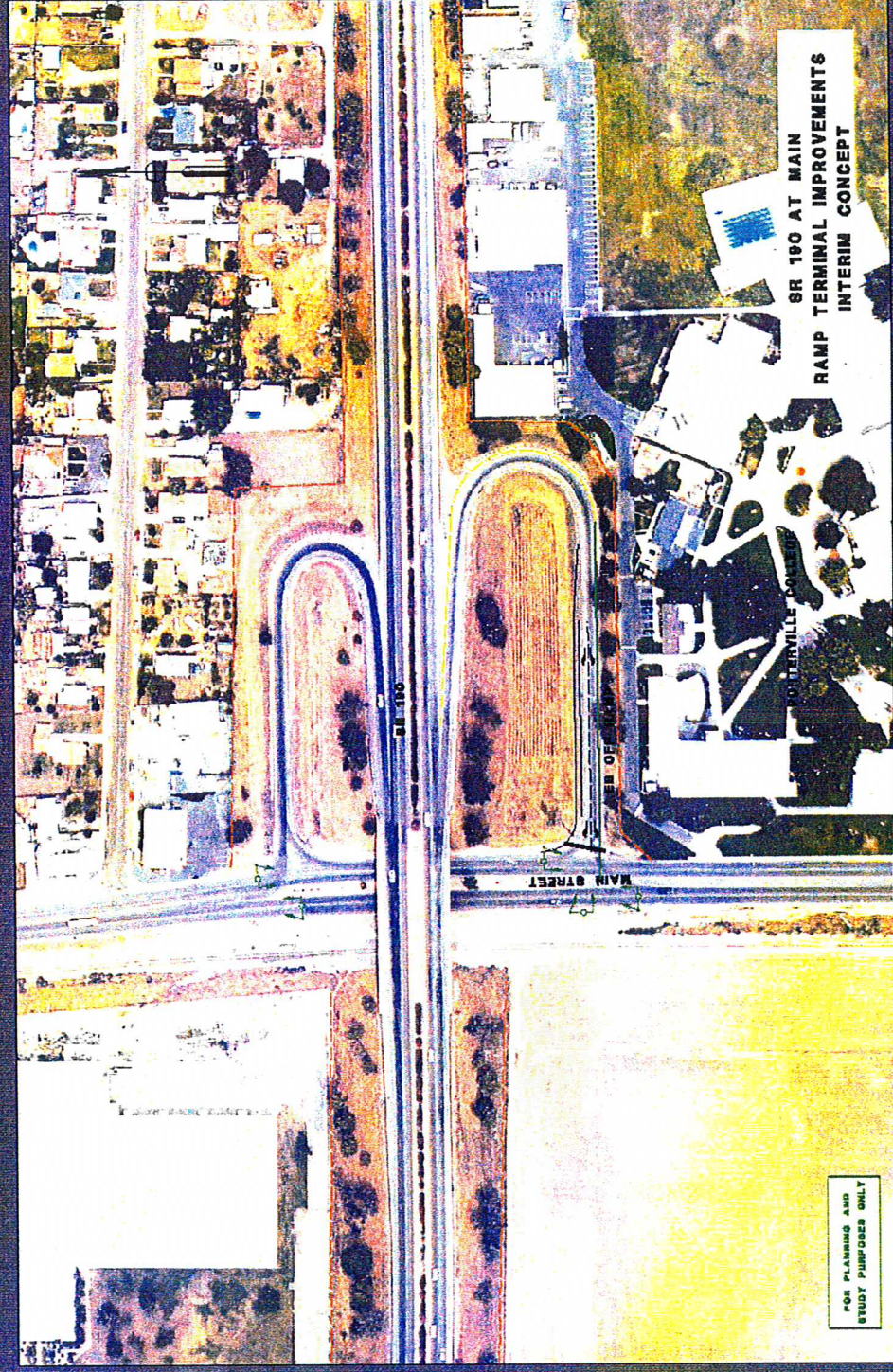


# Westbound Auxiliary Lane – “Near Term” Project (Jaye Street to SR 65)



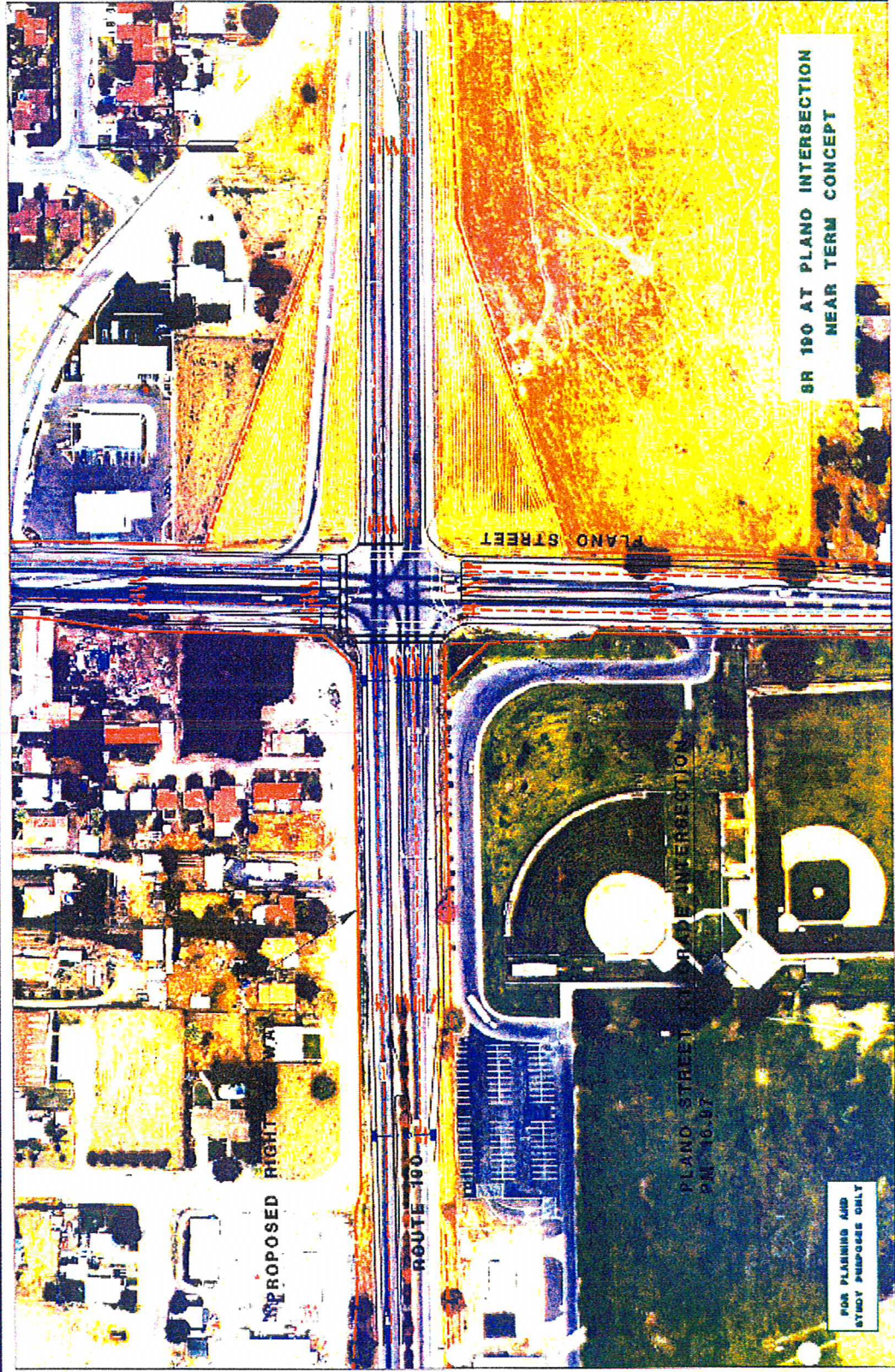


# Signalization of Existing Main Street On and Off Ramps w/ Dedicated Right and Left Turn Lanes for Off Ramp – “Near Term” Project





# Plano St. – “Near Term” Project – Signalized Intersection





## **COOPERATIVE AGREEMENT**

### **Project Study Report – Project Development Support (PSR-PDS)**

This Agreement, effective on \_\_\_\_\_, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

City of Porterville, a body politic and municipal corporation or chartered city of the State of California, referred to hereinafter as CITY.

#### **RECITALS**

1. PARTNERS are authorized to enter into a cooperative agreement for improvements to the state highway system (SHS) per Government Code 65086.5.
2. CITY desires that a project initiation document (PID) is developed for operational improvements at four locations on State Route (SR) 190 including; westbound auxiliary lane from SR 65 to Jaye Street, intersection improvements at SR 190 and Westwood, and intersection improvement at SR 190 and Plano, and Main Street ramp terminus improvements, within the SHS and is referred to herein as PROJECT.
3. PARTNERS acknowledge that this Agreement is only applicable for a Project Study Report-Project Development Support (PSR-PDS) PID.
4. CITY requests CALTRANS to develop the PID and CITY is willing to fund one hundred percent (100%) of the costs and fees of the PID and the costs to reimburse CALTRANS.  
  
CALTRANS will develop, review and approve the PID as reimbursed work.
5. PARTNERS hereby set forth the terms, covenants, and conditions of this Agreement, under which they will complete the PID.

#### **ROLES AND RESPONSIBILITIES**

6. CALTRANS will prepare a PID for PROJECT at CITY's sole cost and expense and at no cost to CALTRANS.
7. CALTRANS will complete the work elements that are assigned to it on the SCOPE SUMMARY which is attached to and made a part of this Agreement by reference. CITY will complete the work elements assigned to it on the SCOPE SUMMARY. Work elements marked with "N/A" on the SCOPE SUMMARY are not included within this Agreement. Work elements are outlined in the *Workplan Standards Guide for the Delivery of Capital Projects* available at [www.dot.ca.gov/hq/projmgmt/guidance.htm](http://www.dot.ca.gov/hq/projmgmt/guidance.htm).



8. CALTRANS has no obligation to perform work if funds to perform work are withheld or unavailable.

### **INVOICE AND PAYMENT**

9. CITY agrees to pay CALTRANS, an amount not to exceed \$120,000.
11. The cost of any engineering support performed by CALTRANS will be charged according to current law.
12. CALTRANS will invoice CITY for a deposit of \$20,000 after execution of this Agreement and thirty (30) working days prior to the commencement of PROJECT expenditures.
13. Thereafter, CALTRANS will invoice CITY for actual cost of work performed based on prior month's expenditures.
14. After PARTNERS agree that all work is complete for the PROJECT, CALTRANS will submit a final accounting for all costs. Based on the final accounting, CALTRANS will refund or invoice as necessary in order to satisfy the financial commitments of this Agreement.
15. If an executed Program Supplement Agreement (PSA) or STIP Planning, Programming, and Monitoring Program Fund Transfer Agreement (PPM) exists for this PROJECT then CITY will abide by the billing and payment conditions detailed for the fund types identified in the PSA or PPM.
16. If CITY has received Electronic Funds Transfer (EFT) certification from CALTRANS then CITY will use the EFT mechanism and follow all EFT procedures to pay all invoices issued from CALTRANS.
17. Except as otherwise provided in this Agreement, PARTNERS will pay invoices within 30 calendar days of receipt of invoice.

### **GENERAL CONDITIONS**

18. Per Chapter 603, amending item 2660-001-0042 of Section 2.00 of the State Budget Act of 2012, the cost of any engineering services performed by CALTRANS towards any local government agency-sponsored PID project will only include direct costs. Indirect or overhead costs will not be applied during the development of the PID document.
19. If HM-1 or HM-2 is found within the PROJECT limits, CALTRANS will notify CITY.
20. CITY, independent of PROJECT, is responsible for any HM-1 found within PROJECT limits and outside the existing SHS right of way. CITY will undertake or cause to be

undertaken HM MANAGEMENT ACTIVITIES related to HM-1 with minimum impact to PROJECT schedule.

21. PARTNERS agree to consider alternatives to PROJECT scope and/or alignment, to the extent practicable, in an effort to avoid any known hazardous materials within the proposed PROJECT limits.
22. CALTRANS' acquisition or acceptance of title to any property on which any HM-1 or HM-2 is found will proceed in accordance with CALTRANS' policy on such acquisition.
23. CALTRANS, independent of PROJECT, is responsible for any HM-1 found within the existing SHS right of way and will pay, or cause to be paid, all costs for HM MANAGEMENT ACTIVITIES related to HM-1. CALTRANS will undertake, or cause to be undertaken, HM MANAGEMENT ACTIVITIES related to HM-1 with minimum impact to PROJECT schedule.
24. CALTRANS' obligations under this Agreement are subject to the appropriations of resources by the Legislature, the State Budget Act authority, and the allocation of funds by the California Transportation commission.
25. Neither CITY nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS or under this Agreement. It is understood and agreed that CALTRANS, to the extent permitted by law, will defend, indemnify, and save harmless CITY and all of its officers and employees from all claims, suits, or actions of every name, kind and description brought forth under, including, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under this Agreement.
26. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by CITY and/or its agents under or in connection with any work, authority, or jurisdiction conferred upon CITY or under this Agreement. It is understood and agreed that CITY, to the extent permitted by law, will defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind and description brought forth under, including, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CITY and/or its agents under this Agreement.
27. This Agreement is intended to be PARTNERS' final expression and supersedes all prior oral understanding pertaining to PROJECT.
28. This Agreement will terminate 180 days after PID is signed by PARTNERS or as mutually agreed by PARTNERS in writing. However, all indemnification articles will remain in effect until terminated or modified in writing by mutual agreement.



## DEFINITIONS

**HM-1** – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law whether it is disturbed by PROJECT or not.

**HM-2** – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law only if disturbed by PROJECT.

**HM MANAGEMENT ACTIVITIES** – Management activities related to either HM-1 or HM-2 including, without limitation, any necessary manifest requirements and disposal facility designations.

**PARTNER** – Any individual signatory party to this Agreement.

**PARTNERS** – The term that collectively references all of the signatory agencies to this Agreement. This term only describes the relationship between these agencies to work together to achieve a mutually beneficial goal. It is not used in the traditional legal sense in which one PARTNER's individual actions legally bind the other parties.

**SCOPE SUMMARY** – The attachment in which each PARTNER designates its responsibility for the completion of specific work elements as outlined by the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at <http://www.dot.ca.gov/hq/projmgmt/guidance.htm>.

## **CONTACT INFORMATION**

The information provided below indicates the primary contact information for each PARTNER to this Agreement. PARTNERS will notify each other in writing of any personnel or location changes. Contact information changes do not require an amendment to this Agreement.

**The primary Agreement contact person for CALTRANS is:**

Garth Fernandez, Project Manager  
2015 East Shields, Suite 100  
Fresno, CA 93726

Office Phone: (559) 243-8012

**The primary Agreement contact person for CITY is:**

Mike Reed, Deputy Public Works Director, City Engineer  
291 N Main Street  
Porterville, CA 93257

Office Phone: (559) 782-7462



## SIGNATURES

PARTNERS declare that:

1. Each PARTNER is an authorized legal entity under California state law.
2. Each PARTNER has the authority to enter into this Agreement.
3. The people signing this Agreement have the authority to do so on behalf of their public agencies.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

By: \_\_\_\_\_  
Sharri Bender Ehlert  
DISTRICT DIRECTOR

**Certified as to funds:**

By: \_\_\_\_\_  
William Etherton  
BUDGET MANAGER

CITY OF PORTERVILLE

By: \_\_\_\_\_  
Name Tbd  
Title TBD

**Attest:**

By: \_\_\_\_\_  
Name Tbd  
Title TBD

**Approved as to form and procedure:**

By: \_\_\_\_\_  
Name Tbd  
Title TBD

## SCOPE SUMMARY

WORK ELEMENT	CALTRANS	CITY	N/A
0.100.05.05.xx - Quality Management Plan			X
0.100.05.05.xx - Risk Management Plan			X
0.100.05.05.xx - Communication Plan			X
0.100.05.10.xx - Cooperative Agreement for PA&ED Phase	X		
0.100.05.10.xx - Independent Quality Assurance (IQA)			X
0.100.05.10.xx - Project Development Team Meetings	X		
1.150.05.05 - Review of Existing Reports Studies and Mapping	X		
1.150.05.05.xx - Provision of Existing Reports, Data, Studies, and Mapping			X
1.150.05.10 - Geological Hazards Review	X		
1.150.05.10.xx - Provision of Existing Geological Information			X
1.150.05.15 - Utility Search	X		
1.150.05.15.xx - Provision of Existing Utility Information			X
1.150.05.20 - Environmental Constraints Identification	X		
1.150.05.20.xx - Provision of Environmental Constraints Information			X
1.150.05.25 - Traffic Forecasts/Modeling			
1.150.05.25.xx - Provision of Existing Traffic Forecasts/Modeling Information			X
1.150.05.30 - Surveys and Maps for PID	X		
1.150.05.30.xx - Provision of Existing Surveys and Mapping			X
1.150.05.35 - Problem Definition	X		
1.150.05.45 - As-Built Centerline and Existing Right of Way	X		
1.150.05.xx - Provision of Existing District Geotechnical Information	X		
1.150.10.05 - Public/Local Agency Input	X		
1.150.15.05 - Right of Way Data Sheets	X		
1.150.15.10 - Utility Relocation Requirements Assessment	X		
1.150.15.15 - Railroad Involvement Determination	X		
1.150.15.25 - Preliminary Materials Report	X		
1.150.15.35 - Multimodal Review	X		
1.150.15.40 - Hydraulic Review	X		
1.150.15.50 - Traffic Studies	X		
1.150.15.55 - Construction Estimates	X		
1.150.20.05 - Initial Noise Study	X		
1.150.20.10 - Hazardous Waste Initial Site Assessment	X		
1.150.20.15 - Scenic Resource and Landscape Architecture Review	X		
1.150.20.30 - Initial Records and Literature Search for Cultural Resources	X		
1.150.20.50 - Initial Water Quality Studies	X		
1.150.20.60 - Preliminary Environmental Analysis Report Preparation	X		
1.150.20.65 - Initial Paleontology Study	X		
1.150.25.05 - Draft PID	X		
1.150.25.20 - PID Circulation, Review, and Approval	X		
1.150.25.25 - Storm Water Data Report	X		



WORK ELEMENT	CALTRANS	CITY	N/A
1.150.35 - Required Permits During PID Development	X		
1.150.40 - Permit Identification During PID Development	X		
1.150.45 - Base Maps and Plan Sheets for PID	X		