

# **SHASTA METROPOLITAN IMPROVEMENT PROGRAM**

**APPROVED**

**June 28, 2011**

**SHASTA COUNTY REGIONAL TRANSPORTATION  
PLANNING AGENCY (MPO)**

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# I. Introduction

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## Purpose of this Report

The Shasta Metro Program provides a comprehensive list of improvements and prospective funding sources needed to address congestion on Shasta County's regional transportation system, including freeways, interchanges, and key arterials. While individual elements of the Shasta Metro Program are called out within the Shasta County Regional Transportation Plan (RTP), this effort provides a subset of regionally significant projects in the south-central urban region (SCUR, see **Figure 1**) needed for analysis and quantification of system performance with and without proposed improvements. This effort includes a general funding analysis for strategic and coordinated use of local, state and federal funding.

The Shasta Metro Program reflects the need to evolve and adapt to the new reality of transportation funding. Interstate highway improvements were once entirely funded by the state and federal government; in recent years it has become necessary for regions to become a financial partner to fund vital transportation projects.

California regions have typically waited until congestion becomes acute, mobility is restricted, and economic productivity suffers, before seeking comprehensive solutions. The failure to address congestion in step with growth has created a logjam of transportation system deficiencies in many regions that is difficult to recover from, and leaves fewer potential solutions from which to choose. Shasta County communities hope to benefit from the experiences and mistakes of other regions and are discussing best management practices and funding strategies before an inconvenience becomes a crisis.

## The Role of Regional Transportation Infrastructure in Shasta County

Mobility is the backbone of Shasta County's economy and quality of life. Businesses count on the regional network for access to goods and customers. Residents rely upon the regional transportation system network for access to jobs, commerce, recreation, and various other needs. According to a recent survey conducted in Shasta and Tehama Counties, 83 percent of voter households use the freeway on a weekly basis and nearly fifty percent use it on a daily basis.<sup>1</sup>

Unfortunately, regional and interregional transportation infrastructure is often taken for granted until the system begins to fail. Many regions choose to ride the wave of prior investments, failing to recognize that degradation of system performance is not a linear decline. As travel demand on critical portions of the regional network approaches maximum capacity, a rapid and acute decline in mobility follows. **Appendix 1** provides an illustration of the Vehicle to Capacity ratio on the Shasta County roadway system. It is easy to see from the model that in 2030 our system will

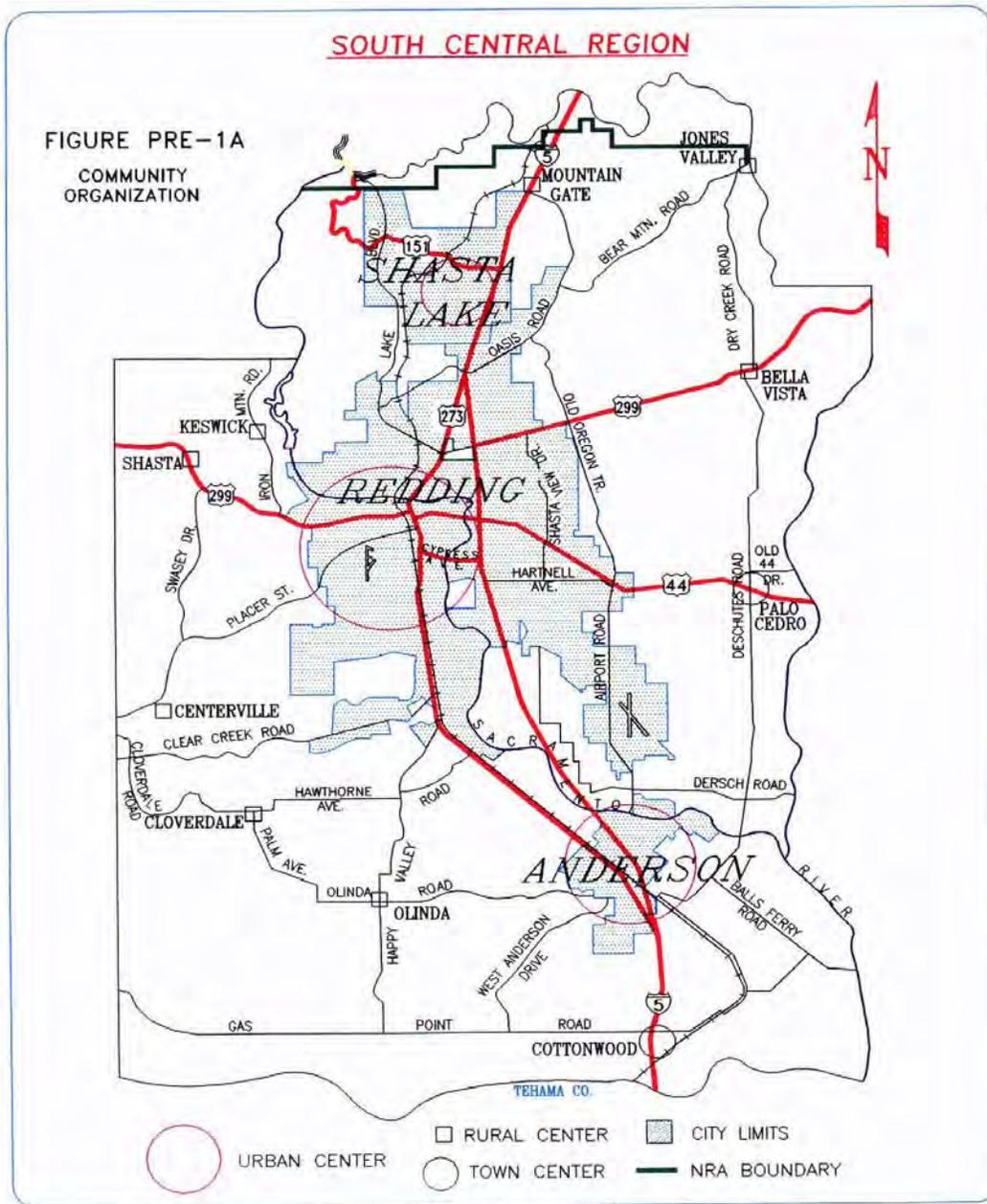
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<sup>1</sup> Godbe Research, August 2007.

<sup>1</sup> TRIP. "The Interstate Highway System in California." June 29, 2006.

reach capacity if no improvements are made. Bottlenecks and/or gridlock at any point in the system will quickly overflow onto local streets and roads. On the other hand, the economic value attributed to the proper maintenance and timely expansion of regional transportation infrastructure can be measured in the millions – as a result of jobs created, increased productivity, fuel efficiency, traffic safety, and so forth.<sup>2</sup>

**Figure 1: South Central Urban Region (SCUR) Program Area**



<sup>2</sup> TRIP. "The Interstate Highway System in California." June 29, 2006.

## II. Growth Projections and Level of Service

### Population, Employment and Land Use

Based on Department of Finance data with adjustment factors provided by local jurisdictions, growth in Shasta County is expected to occur at rates ranging from 0.78 percent to 2.24 percent annually depending on development type. Residential development is forecast to grow at 1.4 percent annually. **Appendix 2** provides further breakdown, including both 2007 and 2030 compound annual growth rates by development type and land use assumptions.

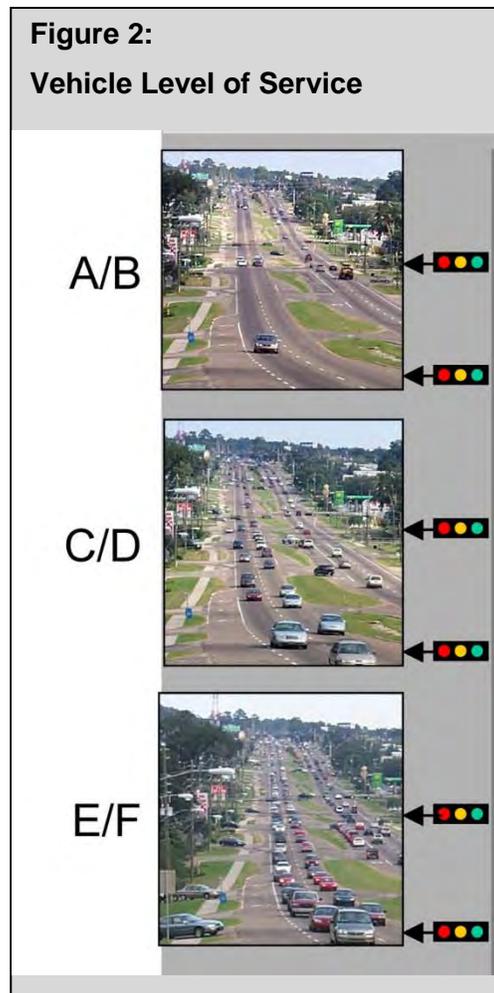
The Shasta County Traffic Demand Model (TDM) utilizes these inputs and assumptions in conjunction with known correlations between economic activity, housing and population, land use patterns, and transportation in order to distribute population growth, new development, and corresponding travel demand across the regional network.

The TDM is updated periodically to reflect the most up-to-date data and assumptions. The next update and release of the TDM is anticipated by late 2011.

### Growth-related Impacts on the Regional Network Level of Service

Information on the origin, destination, purpose, and timing of vehicle trips (and the current transportation network's responsiveness to these needs) is used to calculate level of service (LOS) standards for Shasta County Metro Program enhancements. **Figure 2** provides a visual depiction of the relative quantity of vehicles in each of the LOS levels. LOS "A", "B", and "C" suggest that delays are insignificant to acceptable. LOS "D" suggests delays are higher and some short-term back-ups occur. LOS "E" and "F" represent greatly restricted speeds and significant delays as traffic volumes meet or exceed the maximum capacity of the facility. Minimum standards for LOS among local jurisdictions are all within the C-D range.

**Figure 2:**  
**Vehicle Level of Service**



## Levels of Service for Road Transportation

In general, most regional transportation facilities are presently meeting adopted LOS standards. However, as growth and development, fuel, travel demand, and network capacity become increasingly strained, so will prompt delivery of the improvements described in this report.

Most key segments of the transportation network will fall below acceptable LOS standards prior to 2030. Although a number of variables may accelerate, or push-out congestion a few years beyond best forecasts, this does not alter the need, impacts, and therefore strategies needed to address congestion.

## Trip Type and Accountability

Travel demand in Shasta County is divided into the following trip types:

- Internal-internal – the trip origin and destination is within the region. For example, an Anderson resident traveling to Shasta College.
- Internal-external/external-internal – the trip origin is within the region while the trip destination is outside the region (or vice-versa). For example, a Tehama County resident commuting to Redding for work.
- External-external – the trip origin and destination both occur outside of the region. For example, a truck traveling from Sacramento to the north coast via I-5 and highway 299 without stopping in Shasta County.

Based on trip type, the benefit and responsibility of that trip may be accounted for differently. The federal government, for instance, has a vested interest in maintaining an acceptable level of service for interregional trips (external-external), truck access to ports, and military movements for national security purposes. Local agencies have a vested interest in the regional network for travel outside of Shasta County (internal-external) for business and personal trips as well as for intra-regional trips (internal-internal) for congestion relief on local streets and roads.

A clear understanding of trip purpose, origin, and destination provides a starting point for discussions of appropriate financial responsibility among partner agencies.

### III. Planned Improvements

#### Project Data

Planned improvements are based upon recent study findings<sup>3</sup> which focus on the most cost effective and efficient strategy for maintaining acceptable level of service and traffic throughput. A detailed list of planned improvements is provided below.

**Table 1: Shasta Metro Program Project List**

Location Description	Total Cost (\$M)	Current LOS 2005	Unimproved LOS 2030	Improved LOS 2030
<b>Freeway Segments</b>				
PM 0.0 to 4th Street OC	22.3	C	F	C
Fourth St OC/ SR 273	funded	D	F	C
SR 273/ Riverside Ave OC	69.9	C	F	C
Riverside Ave OC/S. Bonnyview OC	38.1	C	F	D
S Bonnyview OC/Central Redding IC	funded	C	F	D
Central Redding IC / N. Redding	34.3	D	F	D
SR 151/Mountain Gate OC	22.9	B	D	D
<b>Interchanges</b>				
Main Street Interchange	9.8	B	D	C
Gas Point Rd Interchange	12.2	C/F	D/F	C
Knighton Interchange	20.0	A	n/a	n/a
Oasis Rd Interchange	30.5	n/a	n/a	n/a
S. Bonnyview Interchange	10.0	C	E	C
Airport Rd/ SR 44 Interchange	18.0	A/B	F	A/B
Ox Yoke/ Riverside Ave Corridor/IC	33.4	A/D	E/F	A/C
Deschutes Road Interchange	17.2	A/C	F	n/a
<b>Roadway Improvements</b>				
Airport Road Widening	50.0	n/a	n/a	n/a
Shasta Gateway to Cascade Ave.	11.2	n/a	n/a	n/a
<b>Project Cost Total</b>	<b>399.8</b>			

<sup>3</sup> Shasta County Regional Improvement Program (SCRIP)

If funded, projects in the Shasta Metro Program would effectively maintain LOS standards through the 2030 planning horizon and beyond. In addition to improved LOS, Shasta Metro Program project benefits include, but are not limited to, the following:

- Time value of money/construction costs – The relative cost of construction and materials is increasing at a higher rate than inflation. Early and proactive improvements to the network are less expensive and more cost effective.
- Reduced mobile source emissions – Vehicles emissions increase as congestion and hours of delay increases. Maintaining acceptable LOS on the regional transportation network will be instrumental in maintaining air quality compliance status. Air quality non-conformance would restrict transportation system expansion and compromise the region's ability to approve new development.
- Continued economic growth and development – A region's economic vitality is directly tied to its ability to deliver adequate mobility to businesses and residents. Each person-hour spent in congestion equals lost productivity. Any additional direct costs for travel effectively decrease individual net income.
- Improved safety/reduced traffic accidents – Cost savings as a result of reduced vehicle-related injury, death, personal property damage, and associated travel delay help mitigate the cost of transportation improvements.

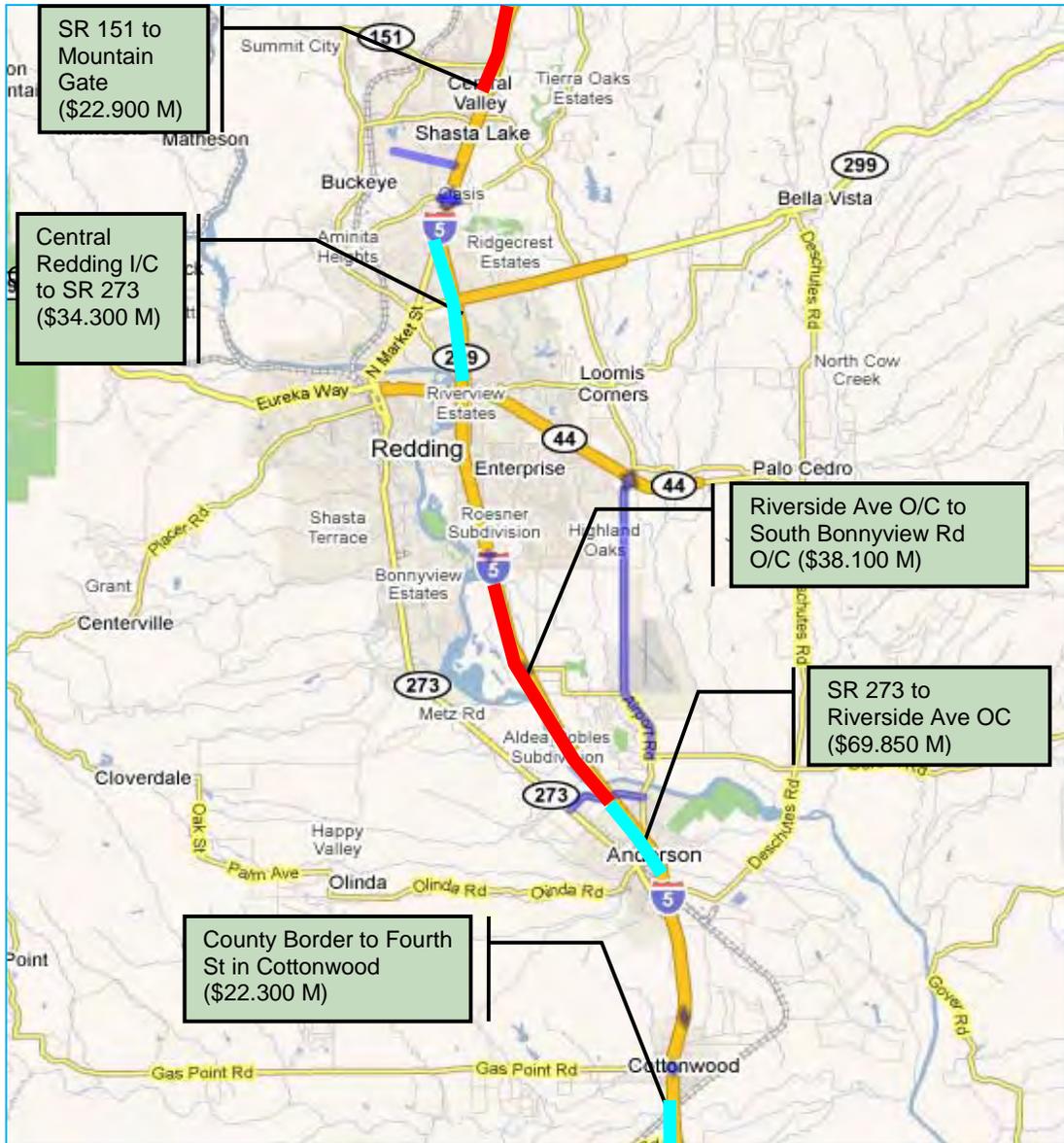
## IV. Cost and Revenue

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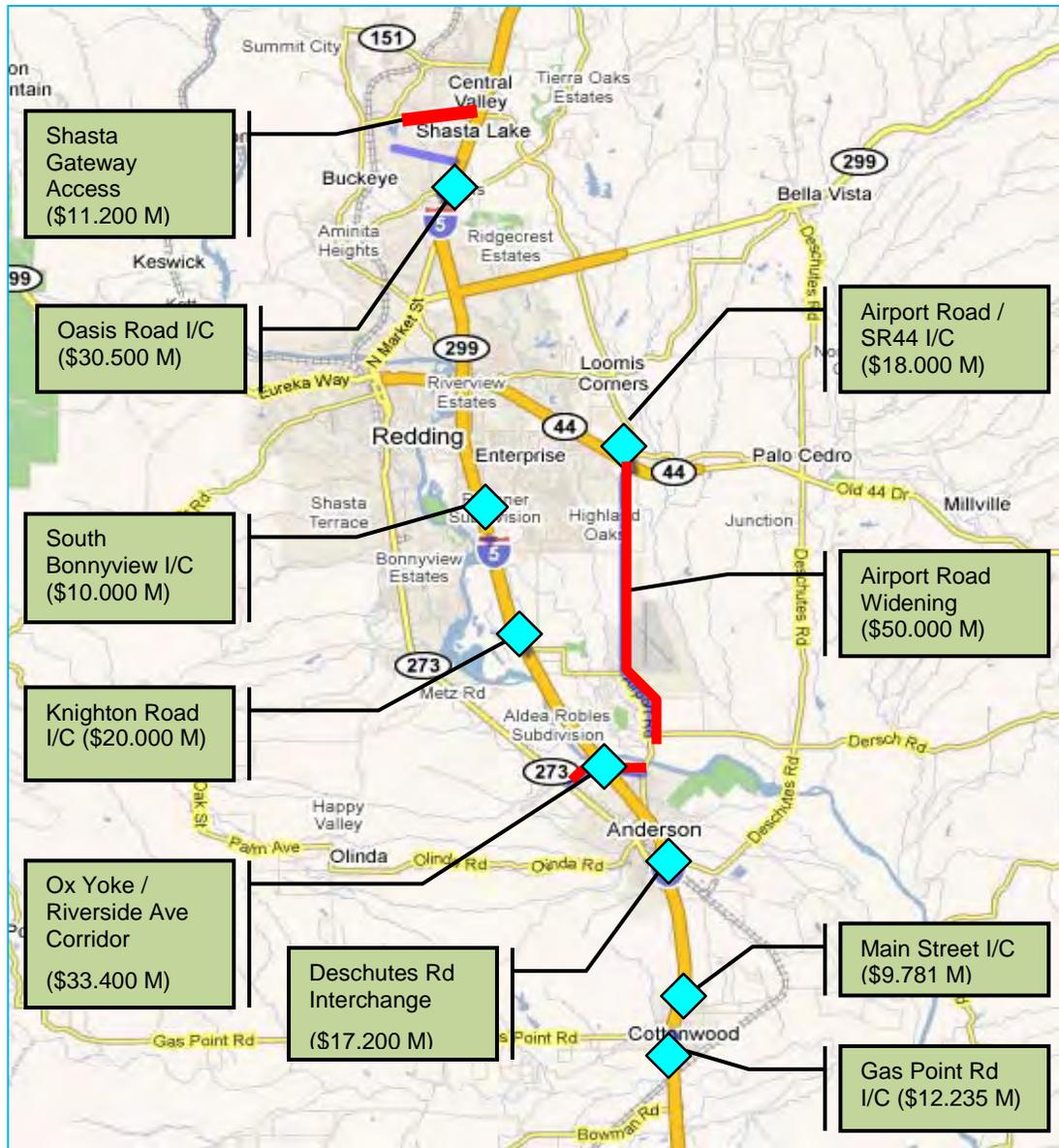
Cost estimates are broken down by project or segment (see **Figures 3 & 4**). Estimates include construction costs and support costs for project design, engineering, and environmental review, but are planning level estimates only. Actual project costs will be determined when project specifics are better identified. Project estimates are not adjusted for inflation.

The successful funding of the 'Cottonwood Hills Truck Climbing Lanes' and 'South Redding Six Lane' projects via the competitive Proposition 1B bond process is indicative of the ability to leverage state and federal funding sources through regional planning efforts. Excluding these two projects from the total program cost, approximately \$400 million will be needed over the next 20 years to complete the program of projects.

Figure 3: Mainline Interstate 5 Regional Improvement Projects (\$187.450 M)



**Figure 4: Non-Mainline Regional Improvement Projects (\$212.316 M)**



The following funding sources may be available to complete the Shasta Metro Program projects, categorized by agency with discretion over spending:

- Shasta County Regional Transportation Planning Agency (RTPA) – The Regional Improvement Program (RIP) consists of funds from the State Transportation Improvement Program (STIP) that is allocated to regional transportation planning agencies. Regional agencies have discretion over expenditure of these funds and may allocate all funding to Metro Program project improvements, based on locally determined

priorities. The Shasta County RTPA estimates \$110 million in available STIP funding through 2030, which will be administered through the Regional Transportation Improvement Plan (RTIP).

- California Transportation Commission (CTC) – The share of the STIP not allocated to RIP funding is the Interregional Improvement Program (IIP). This funding source is controlled by the CTC and is dedicated to interregional improvements such as I-5 capacity expansion. The CTC normally has project needs that exceed funding availability. To maximize the effectiveness of IIP allocations, the CTC increasingly dedicates funding to regions prepared to leverage regional funds with local funding.

The CTC also controls the State Highway Operation and Protection Plan (SHOPP). The SHOPP funds the maintenance of the state highway system through rehabilitation (roadways and bridges), maintenance, safety, storm damage, and other maintenance programs.

- State Legislature – The Highway Safety, Traffic Reduction, Air Quality, and Port Security Fund of 2006 (Proposition 1B) provided about \$20 billion from bond sales devoted to transportation projects. Additional bond offerings remain a potential revenue source for the future, but cannot be relied upon.
- Federal Funding – In addition to the transportation authorization bill, other federal funding also becomes available for selected transportation improvements. Recent examples are the American Recovery and Reinvestment Act (ARRA and TIGER funds) and the Corridors of the Future Program (CFP), which provides funding for corridor improvements that reduce congestion. As with other funding opportunities, the region's ability to attract federal funding is enhanced by a local contribution.
- Local Funding – The region has a number of funding sources committed to public improvements. Some are public fees that are permitted by the mitigation fee act.
  - ✓ City of Redding municipal code contains provisions to implement the North Redding Traffic Benefit District (NRTBD) and Citywide fees. These fees generate revenue to support improvements to the regional transportation system as needed to serve new development.
  - ✓ Shasta County developed the South County Impact Fee program, among others, to generate revenue from new development in the South County Region.
  - ✓ Shasta Lake City and Anderson implement Traffic Impact Fee Programs.
  - ✓ The Shastec Redevelopment Agency provides funding for improvements in areas defined by their implementation plan.
  - ✓ CEQA mitigation, including project contributions, project construction, and right of way dedications.

Table 2 below details project costs, available funding, and the resulting financial need to fully fund the projects. The total project costs are **\$399.766** million with a total regional unmet need of **\$252.582** million.

This comprehensive list of projects that maximizes the use of all revenue sources, including fee revenue, local, state and federal funding, enables the region to go forward with a complete funding package. Working to attract funding as a region will continue to give Shasta County a competitive edge as we compete for state and federal funds.

**Table 2. Regional Project Funding Scenarios for a 20-year horizon (2030)**

<b>City of Shasta Lake</b>	
<b>Shasta Gateway to Cascade Blvd</b>	\$11.200 M
Estimated Impact Fee Revenue:	0.603 M
Property Tax Increment:	<u>1.000 M</u>
Estimated Funding Need:	\$ 9.597 M
<b>Shasta County</b>	
<b>Main St Interchange</b>	\$ 9.781 M
<b>Gas Point Rd Interchange</b>	12.235 M
<b>Knighton Interchange</b>	20.000 M
Projects Total:	42.016 M
Estimated Impact Fee Revenue:	<u>19.590 M</u>
Estimated Funding Need:	\$ 22.426 M
<b>City of Redding</b>	
<b>Oasis Rd Interchange</b>	\$30.500 M
<b>South Bonnyview Interchange</b>	10.000 M
<b>Airport/44 Interchange</b>	18.000 M
<b>Airport Road widening</b>	50.000 M
Projects Total:	108.500 M
Shastec Revenue:	11.500 M
Estimated Impact Fee Revenue:	<u>1.286 M</u>
Estimated Funding Need:	\$ 95.714 M
<b>City of Anderson</b>	
<b>Ox Yoke/Riverside Ave Corridor/Interchange</b>	\$33.400 M
<b>Deschutes Interchange</b>	17.200 M
Projects Total:	50.600 M
Shastec Revenue:	0.800 M
Estimated Impact Fee Revenue:	2.405 M
Estimated Funding Need:	\$47.395 M
<b>Mainline - - - Add lanes to I-5</b>	
<b>Riverside OC to Bonnyview</b>	\$ 38.100 M
<b>SR44 to SR 273 (North Redding)</b>	34.300 M
<b>SR 273 to Riverside Ave OC</b>	69.850 M
<b>PM 0.0 to 4th Street OC</b>	22.300 M
<b>SR 151 to Mountain Gate</b>	22.900 M
Projects Total:	187.450 M
Estimated STIP Total:	110.000 M
Estimated Funding Need:	\$ 77.450 M
<b>Grand Totals</b>	
<b>Total Projects Cost:</b>	<b>\$ 399.766 M</b>
<b>Total Revenue:</b>	<b>\$ 147.184 M</b>
<b>Total Funding Need:</b>	<b>\$ 252.582 M</b>

## V. Findings

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State and federal transportation funding is diminishing. Discretionary funding programs are becoming more competitive and require leveraging of local or other funding sources.

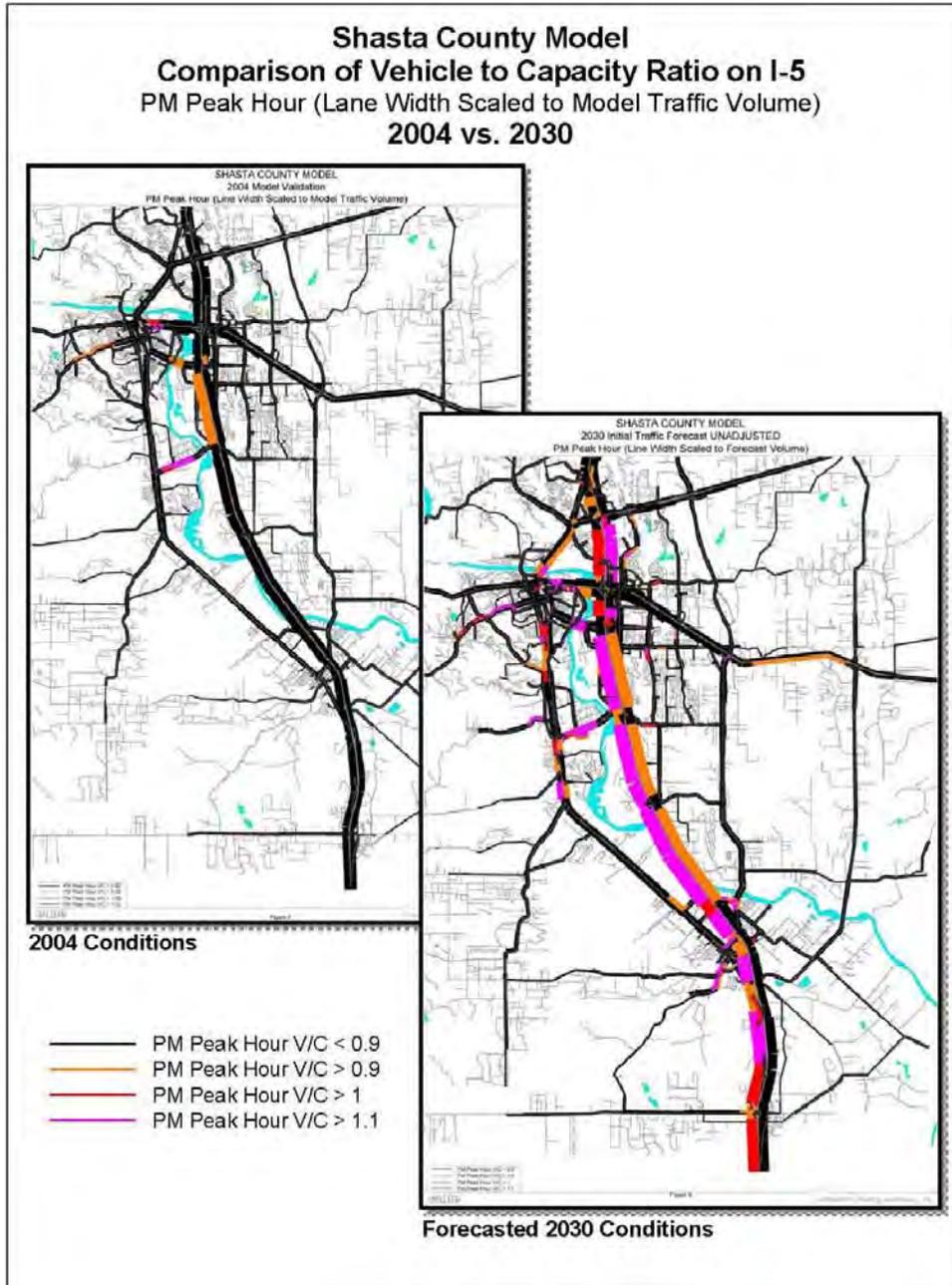
Shasta County agencies will be better prepared and positioned to receive funds if regionally significant transportation improvements are presented as a unified and interdependent program of projects. In the quest to fully fund transportation projects, partnerships between state, federal and local agencies have become imperative to shore up funding for projects.

The Shasta Metro Program provides a comprehensive list of improvements, estimated costs, and prospective funding sources to address congestion on Shasta County's regional transportation network, including freeways, interchanges, and key arterials.

The Metro Program is a program of 15 projects totaling \$399.766 million dollars. Revenue sources identified here include \$24.281 million in impact fee revenue and \$110 million in STIP revenue. The remaining \$252.582 million needed to construct these improvements can be attained from other fee revenue, state and federal sources, project contributions, and through innovative financing and strategic alliances.

The Shasta Metro Program is not a policy document nor does it assign priority to any specific project over another. It is a living document that will be updated as new information and data becomes available, as assumptions change, and as project specifics are flushed out.

# Appendix 1: Vehicle to Capacity V/C Ratio



## Appendix 2: Development Projections

	Dwelling Units		Number of Jobs			Building Square Feet (thousands)		
	Single Family	Multi-Family <sup>1</sup>	Commercial	Office <sup>2</sup>	Industrial	Commercial	Office <sup>2</sup>	Industrial
<b><i>Shasta County SCUR</i></b>								
Current Development (2007)	45,500	20,500	13,100	33,500	12,300	6,500	22,000	13,600
Total Projected Development (2030)	65,600	24,500	20,100	55,800	16,900	10,000	36,600	18,700
Projected Growth (2007-2030)	20,100	4,000	7,000	22,300	4,600	3,500	14,600	5,100
Compound Annual Growth Rate	1.60%	0.78%	1.88%	2.24%	1.39%	1.89%	2.24%	1.39%

<sup>1</sup> Single family attached dwelling units included in DOF figures are classified as multi-family in this analysis for consistency with RTPA projections.

<sup>2</sup> Excludes local government employment.

Sources: Table 1; State of California Department of Finance (DOF); State of California Employment Development Division (EDD), Labor Information Division; Shasta County Regional Transportation Planning Agency (RTPA) Traffic Demand Model; Willdan Financial Services

# Appendix 3: References

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