

# Interstate 5 Transportation Concept Report

## *Corridor Management and Funding*

### **Corridor Goals**

This section discusses the management strategies and funding options associated with the I-5 corridor in Northern Sacramento Valley.

The primary goal of the I-5 TCR is to craft a consensus-based vision for the future of the corridor and to develop

strategies to address short-, medium-, and long-term transportation capacity needs along the corridor. Additional goals that can be met with successful collaboration include: supporting the economy, enhancing public safety and security, reflecting community values and enhancing the environment.

### **Management Strategies**

The following strategies will be used to obtain these above goals and manage I-5 over the next 20 years:

- **Facility Expansion.** The focus is to improve mobility and reliability, reduce congestion, improve safety and facilitate goods movement by expanding and managing the existing system. In the next 20 years, it will be necessary to increase the number of lanes from four to six between South Red Bluff and Mountain Gate.
- **Interchange Upgrades.** The focus is to redesign and modernize interchanges to reduce restraints to smooth traffic flow. Regional and local agencies take the lead on improving these interchanges. These upgrades could include improvements on local roads, auxiliary lanes, weave sections, ramps, ramp metering, signage, and signals at ramps.
- **Parallel Road Network Development.** The focus is to increase the capacity on the parallel road network to take traffic off I-5.
- **Operational Improvements.** The focus is to add auxiliary lanes, ramp improvements, ramp metering, better signage and lighting, and other system refinements in order to reduce delay, preserve and enhance existing services, and improve safety. In locations between South Red Bluff and Mountain Gate where six lanes are not achieved within twenty years, implementation of ramp metering will be necessary to maintain the Concept LOS of C/D.



*I-5 TEHAMA. Truck climbing lane near Wilcox Road.*



*TRANSPORTATION MANAGEMENT CENTER . Located at Caltrans District 2 in Redding*

Ramp metering will be developed and implemented consisted with the District 2 Directive DP-09 “Freeway Ramp Metering Implementation.”

- **Modal Options.** The focus is to provide viable transportation options for all users. Greater opportunity to use other transportation modes reduces vehicle demand on I-5. Facilitate and support the use of rail, transit, bicycle, and pedestrian into an integrated and coordinated multimodal transportation system.
- **Intelligent Transportation Systems (ITS)/Traveler Information/Traffic Management/ Incident Management.** The focus is to upgrade communication to enable deployment of advanced transportation systems to improve safety, incident response, and traveler information. Real time traveler information allows travelers to make more informed decisions regarding trip planning, route choices and mode selection. Traffic management reduces congestion through the use of technologies such as collision warning systems and advanced traffic management systems. Incidents are the primary cause of unexpected and variable delay. By improving incident management and response time, reductions occur in congestion and travel delay.

ITS Architecture and Strategic Plans are road maps for the implementation of ITS within the District/ Region. All of these plans are based on transportation needs and concerns articulated by stakeholders in the region

- **Land Use/Transportation Demand Management.** The focus is to reduce congestion by encouraging land uses that support shorter trips, increase use of transit and rail, and improve bicycle and pedestrian access. Encouraging carpools, ridesharing, and telecommuting can also change the demand. The way communities are planned and designed has an impact on our travel behavior. Land use decisions and transportation must be more closely linked in the future.

To achieve this strategy, Caltrans will partner with local agencies and review and comment during the Local Development Review process. This process has two main elements: general plans (which guide development) and development projects (specific land development activities).

An additional opportunity to partner and facilitate smart land use is the Regional Blueprint Program. The Program was designed to integrate long-range planning for transportation, land-use, housing, environmental resources, and infrastructure. The Program started in 2007 and employs GIS-based growth modeling software to facilitate regional decision-making. The ultimate goal of blueprint planning is to facilitate consensus around a regional vision and preferred land use scenario that will enable the region to accommodate future growth while minimizing adverse impacts. All regional agencies are encouraged to apply for this program.

- **Maintenance and Preservation.** The focus is maintenance and preservation designed to get a full return on system investments, reduce traveler costs, and reduced traveler and goods delay. Work in this area would include fully implementing the pavement management system, using innovations that improve the quality and durability of pavement, and incorporating higher-performance, lower-maintenance facility features.
- **System Monitoring and Evaluation.** The focus is to improve real-time detection and to enhance data analysis and assessment. This allows for better management of existing traffic, as well as development of projects that better alleviate problems.



EXAMPLE OF RAMP METERING.

### Freeway Expansion Costs: City of Corning to Mountain Gate

**Figure 3** (Sheet 1 and 2) provides planning level cost estimates for expansion of I-5 from four to six lanes between the City of Corning and the Mountain Gate interchange. The cost estimates are broken down by sections and include both construction and support costs for roadway and structures (2006 dollars). The cost estimates include only the minimum improvements required to add the additional northbound and southbound lanes on mainline I-5. The cost estimates do not include modifications to interchanges (other than the costs necessary to add the mainline lanes), ITS deployment, maintenance, or areas outside the Northern Sacramento Valley region (City of Corning to the Mountain Gate Interchange). The total estimated cost (2006 dollars) for the expansion to six lanes is approximately \$750 million.

The cost to upgrade 61-miles (City of Corning to Mountain Gate interchange) of I-5 to 6 lanes is approximately \$750 million (2006 dollars).

### Funding

Transportation in California is funded from a variety of federal, state, local, and private fund sources. Federal funds consist mainly of the federal gasoline and diesel fuel excise taxes. State funds consist of state sales tax on gasoline, state gasoline and diesel fuels taxes (18 cents per gallon) and truck weight fees. Local funds consist of a one-quarter percent share of the state general sales tax and local general funds. Additional sources available at the local level upon adoption include local sales tax measures for transportation and traffic impact fees. Combined local sales tax measures for transportation and traffic impact fees produce more than the one-quarter percent share state general sales tax and local general funds. Revenues generated from state and federal taxes, fees and federal appropriations for the purpose of funding transportation projects are held in the State Highway Account (SHA).

The total investment necessary to expand and maintain all 175 miles of I-5 within District 2 over the next two decades will exceed one billion dollars. Existing funding programs are not sufficient to meet this level of need. To attain the regional vision for I-5, a combination of federal, state, local, and private funds from both existing and new funding programs will be needed.

#### Existing Funding Sources

The following are primary existing sources of funding that are available for use of the State Highway System and I-5 in District 2. Transportation funding programs are quite complex. The following descriptions are only intended to provide a basic description of each program.

**State Highway Operations & Protection Program (SHOPP):** The SHOPP is a four-year program of projects updated every two years. The purpose of the SHOPP is to preserve the integrity of the State highway system, primarily associated with safety, rehabilitation, and operational improvements. SHOPP funds cannot be used for capacity-increasing projects. SHOPP receives priority funding from the SHA.

**State Transportation Improvement Program (STIP):** The STIP is a biennial program adopted no later than April 1 of each even numbered year. Each STIP will cover a five-year period and add two new years of programming capacity. The STIP consists of two broad programs, the Regional Transportation Improvement Program (RTIP) funded from 75% of new STIP funding and the Interregional Transportation Improvement Program (ITIP) funded from 25% of new STIP funding. The 75% regional program is further subdivided by formula into county shares. County shares are available for projects nominated by regional agencies in their RTIPs. The Caltrans ITIP will nominate projects for the interregional program. The STIP is primarily used to fund projects that increase the capacity of the highway system. Some examples of capital projects include additional through travel lanes, auxiliary lanes, high occupancy vehicle (HOV) lanes, and transportation enhancement activities.

State highway project costs in the STIP will include all Caltrans project support costs and all project listings will specify costs for each of the following four components: (1) completion of all permits and environmental studies; (2) preparation of plans, specifications, and estimates; (3) right of way acquisition; and (4) construction and construction management and engineering, including surveys and inspection.

**Corridor Mobility Improvement Account (CMIA):** The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by the voters as part of Proposition 1B on November 7, 2006, includes a program of one-time funding of \$4.5 billion to be deposited in the Corridor Mobility Improvement Account (CMIA). The funds in the CMIA are to be available to the California Transportation Commission (CTC), upon appropriation in the annual Budget Bill by the Legislature, for allocation for performance improvements on the State Highway System or major access routes to the State Highway System. The CMIA was adopted in 2007 and the Cottonwood Hills Climbing Lane Project (SHA 5 1.2/R4.2) was awarded \$27 million

Other existing programs that could be used to benefit I-5 include:

**Public Transportation Account (PTA):** The purpose of the PTA is to promote the development of a public transportation infrastructure by providing a source of funds to local and state transportation agencies primarily for transit (including bus and rail) purposes. The sales taxes on diesel and gasoline are the two main sources of PTA revenues. The PTA primarily supports state transit assistance, intercity rail, and transit capital improvements. The remaining funds in the PTA support various other public transportation purposes, including: intercity rail service, capital improvements of transit systems, rail and mass transportation planning and support, high speed rail development, passenger rail safety, and transportation research.

**Bicycle Transportation Account (BTA):** The BTA provides State funds for city and county projects that improve safety and convenience for bicycle commuters. To be eligible, a local agency must have an adopted Bicycle Transportation Plan. Eligible projects include but are not limited to: new bikeways serving major transportation corridors; new bikeways removing travel barriers to bicycle commuters; bicycle-carrying facilities on public transportation vehicles; installation of traffic control devices to improve safety and efficiency of bicycle travel; improvement and maintenance of bikeways and planning.

**Transportation Enhancements (TE) Program:** The TE program is a competitive grant program to fund environmental and alternative transportation projects that enhance the transportation system. Projects must have a direct relationship to the intermodal transportation system by function, proximity, or impact. Also, projects must be over and above required project environmental mitigation and fall within the established categories for project eligibility. Eligible projects include: facilities for pedestrians and bicycles; acquisition of scenic easements and scenic or historic sites; scenic or historic highway programs; landscaping and other scenic beautification; historic preservation; rehabilitation and operation of historic transportation buildings, structures, or facilities; preservation of abandoned railway corridors (including conversion and use as pedestrian or bicycle trails); control and removal of outdoor advertising; archaeological planning and research; and mitigation of water pollution caused by highway runoff. TE is available in two categories: state and local.

#### **Potential Future Funding Sources:**

The following are either existing funding programs that may become available for improvements on I-5 in the future or could be adopted by local agencies or the public.

**Traffic Impact Fees:** Traffic impact fees are one-time fees typically paid when a building permit is issued and paid by development projects to local agencies (cities and counties) responsible for regulating land use in order to mitigate their traffic impacts. To guide the implementation of the public facilities fees, the State Legislature adopted the Mitigation Fee Act (Act) with Assembly Bill 1600 in 1987 and subsequent amendments. The Act, contained in California Government Code Sections 66000 through 66025, establishes requirements on local agencies for the imposition and administration of a fee program.

One specific impact fee program being considered for this region is the Fix 5 Partnership. The Fix 5 Partnership is a joint effort by seven jurisdictions along a 52-mile stretch of Interstate 5 between the cities of Corning and Shasta Lake created expressly to manage mobility on I-5 via a comprehensive corridor approach. The main goal of this partnership is to add a third lane in both directions between the City of Corning and Mountain Gate. Key deliverables of the Fix 5 Partnership include: mainline I-5 funding plan, regional traffic impact fee program, and cumulative impact assessment. Utilizing a mix of local, state, and federal revenue sources, the Fix 5 Partnership would develop a comprehensive package of transportation projects on the I-5 corridor as viewed from a system perspective. Based on a regionally agreeable fair-share formula, traffic impact fees would ensure that new development pays a fair and equitable contribution toward improvements on mainline I-5 that are necessary to address local growth. City and county governments have not adopted this traffic impact fee program as of June 2008.

**Sales Tax Measures:** The opportunity for local sales tax measure is provided in the California State Constitution (Government Code §§66000-66025) and authorizes cities and counties to impose up to one percent additional local sales taxes if approved by the voters in the local jurisdiction. Nineteen counties in California (representing over three-fourths of the state's population) have "self-help" transportation sales tax measures. Together, the transportation sales tax measures in these counties generate about 6 billion dollars annually.

**High Priority (Demonstration) Projects:** The High Priority Projects Program provides designated funding for specific projects (commonly referred to as demonstration projects) identified by Congress during the reauthorization of the Federal Transportation Act. The designated funding can only be used for the project as described in the law.

**Congestion Mitigation and Air Quality (CMAQ) Funds:** This program directs funds toward transportation projects and programs in non-attainment areas for air quality. Projects eligible for CMAQ funding include planning and development activities that lead to construction of facilities or new services and programs that improve air quality. Typical projects are public transit improvements, HOV lanes; employer-based transportation management plans and incentives; traffic flow improvement programs (signal coordination); fringe parking facilities serving multiple occupancy vehicles; shared ride services; bicycle and pedestrian facilities; and flexible work-hour programs. At this time, the three counties along I-5 are declared attainment for air quality, but if this designation changes to "non-attainment" this funding would be available for I-5.

**Toll Roads:** Tolls allow the financing of the construction, operation or maintenance of roadway facilities. This is a more common source of funding for bridges, tunnels, and turnpikes primarily in the eastern portion of the United States. In California, toll roads exist in Orange County only. For new facilities, it provides a means of generating up-front debt funding to construct transportation facilities without disturbing existing governmental agency budgets and programs, or requiring new or additional taxes. The financing costs in terms of interest on debt over the period that bonds are outstanding can be substantial. After the toll facility is completed, tolls usually provide income to operate and maintain the facility, as well as amortize the outstanding debt. With the new emerging electronic technologies of toll collection, toll roads may be more feasible than before.

**Vehicle Miles Traveled (VMT) Fee:** This fee is levied based on the number of miles driven. It is a "user fee." This type of fee has the potential to generate substantial revenues, especially given that Californians continue to drive more miles each year. Unlike gas taxes, VMT fees also capture revenues from the growing fleet of alternative fuel vehicles within the state. A VMT fee program could be linked to the vehicle smog certification program and would require state legislation.

**Emissions Fee:** An emissions fee could work in a manner similar to the VMT fee program except that user charges would be based on the levels of emissions rather than miles traveled. This program could be utilized at the time the vehicle is smog checked and the driver would pay a fee based on a sliding scale. Revenue formulas would have to be adjusted due to the fact that the California vehicle fleet is becoming cleaner, as older, more polluting vehicles are retired and replaced with vehicles that have improved emission technology. Not all counties in California require smog certifications.

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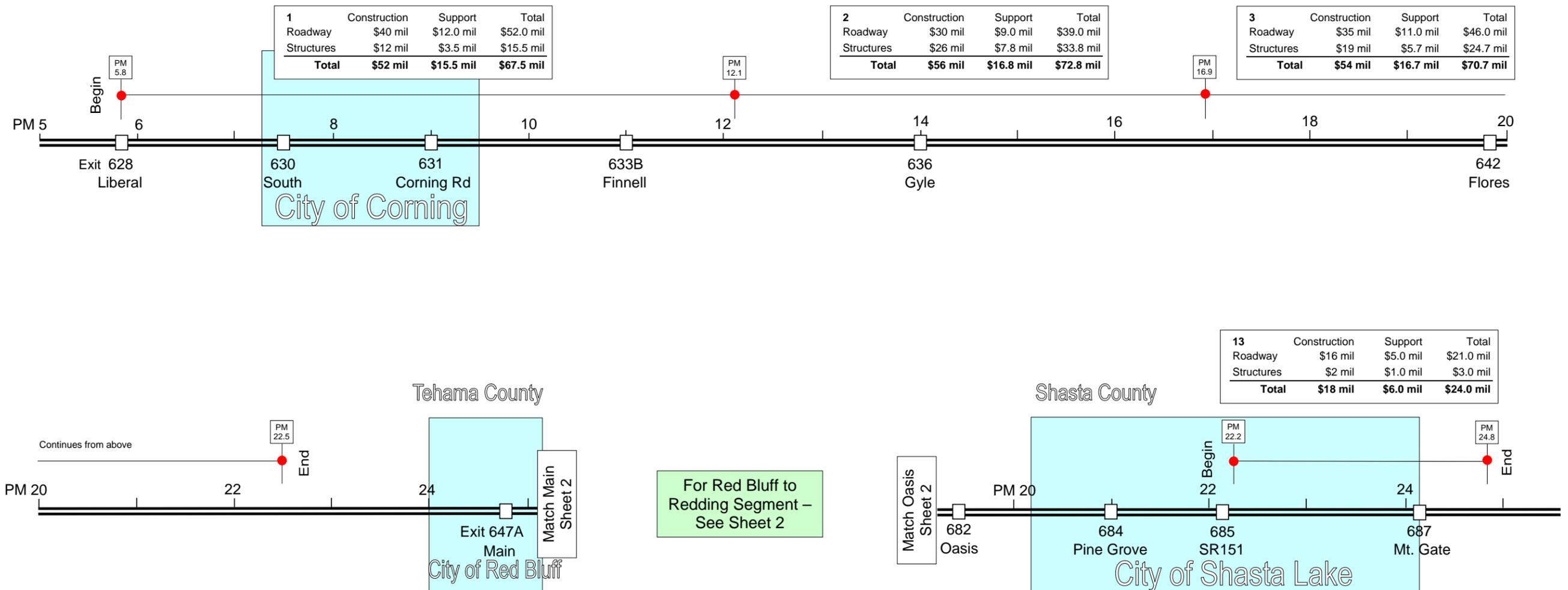


**Figure 3**  
**Planning Level Cost Estimates for Expanding to 6-Lanes**  
**Coming to Mountain Gate**

	Tehama County Total (36.2 centerline miles)			Shasta County Total (24.8 centerline miles)			Project Total (61 centerline miles)		
	Construction	Support	Total	Construction	Support	Total	Construction	Support	Total
Roadway	\$219 mil	\$66 mil	\$285 mil	\$132 mil	\$40 mil	\$172 mil	\$351 mil	\$106 mil	\$457 mil
Structures	\$177 mil	\$53 mil	\$230 mil	\$52 mil	\$16 mil	\$68 mil	\$229 mil	\$69 mil	\$298 mil
<b>Total</b>	<b>\$396 mil</b>	<b>\$119 mil</b>	<b>\$515 mil</b>	<b>\$184 mil</b>	<b>\$56 mil</b>	<b>\$240 mil</b>	<b>\$580 mil</b>	<b>\$175 mil</b>	<b>\$755 mil</b>

- Notes / Details for Sheets 1 and 2:**
1. Add a third lane northbound and southbound (most locations)
  2. All lanes added in the median unless otherwise noted
  3. Outside widening for Segments 1, 2, 3, and 13, which have a narrow median, would cost about the same as median widening – plus right of way.
  4. Net result is to have 3-through lanes each way from Corning to Mountain Gate
  5. Includes full replacements of the Sacramento River bridges at South Red Bluff (\$50 mil) and North Red Bluff (\$40 mil), and at Deschutes UC (\$15 mil) interchange
  6. Estimates do not include any capacity increasing work at the interchanges
  7. Does not include rehabilitation needs for any structures or regular mainline I-5
  8. Does not include ITS elements.
  9. Cost estimate for Tehama County total is for Segments 1 through 7, Shasta County total is for Segments 8 through 13
  10. Support costs estimated @ 30% of construction costs
  11. Order of priority for implementation not depicted

Sheet 1  
TEH 5.8 to SHA 24.8



For Red Bluff to Redding Segment – See Sheet 2

