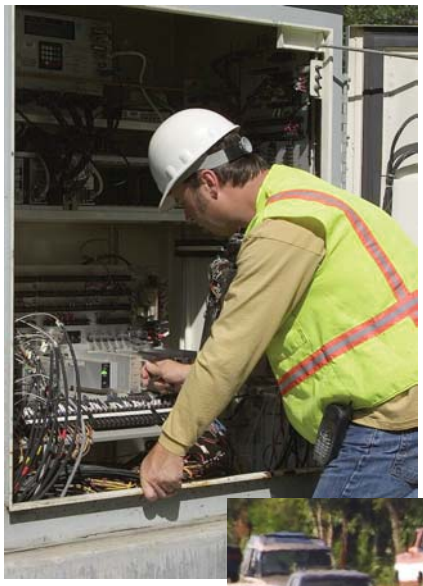
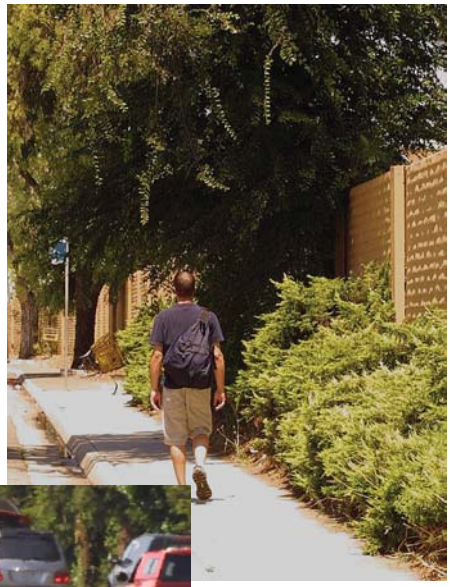
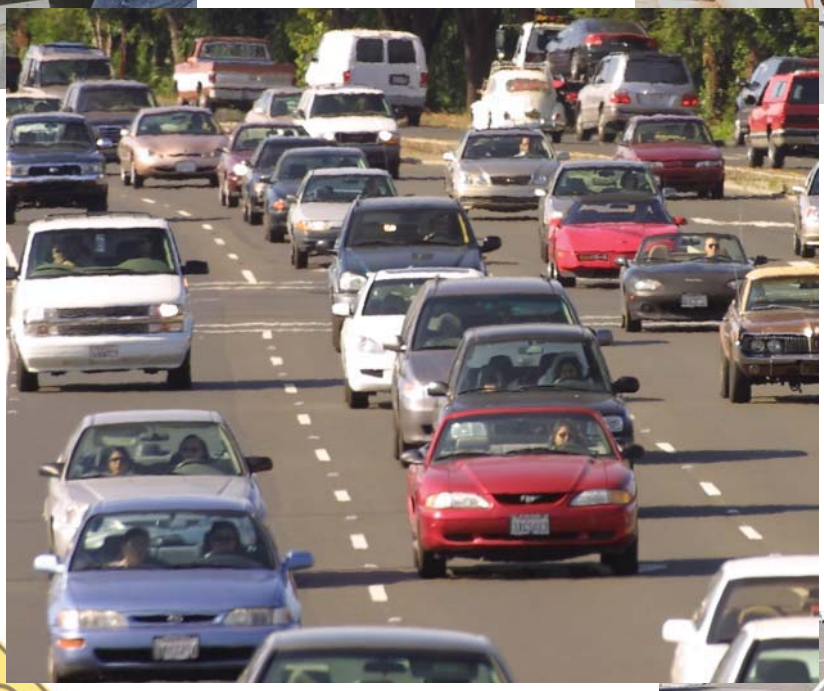
EXECUTIVE SUMMARY







EXPRESSWAY STUDY IMPLEMENTATION PLAN

EXECUTIVE SUMMARY

The Comprehensive County Expressway Planning Study was undertaken to provide a long-term plan for the improvement and maintenance of the County Expressway System. The study took almost two years to complete and culminated in the development of the *Implementation Plan*. The *Implementation Plan* provides a basis for and guides the investment of money and other resources in the expressways. The plan:

- Projects conditions and evaluates need over a 30-year timeframe to be compatible with other regional planning documents and to provide a long-term perspective on expressway system needs.
- Identifies capital improvement project needs ranging from short sidewalk segments to extensive expressway segment improvements to freeway interchange reconstruction.
- Identifies maintenance and operational improvement needs varying from signal coordination expansion to enhanced street sweeping intervals to infrastructure replacement.
- Provides immediately useful information by including recommendations for improvements to signal timing plans and modifications to high-occupancy vehicle (HOV) lane operations, and by recommending design guidelines for bicycle accommodation on the expressways.
- Relates project benefits and potential for delivery to priorities expressed through a tier structure, with the highest priority Tier1A roadway projects expected to be funded through existing revenue sources.
- Proposes a funding strategy to achieve plan implementation.
- Considers roadway improvement needs in South County, where Gilroy is constructing Santa Teresa Boulevard to expressway standards.

Expressway Study Process

A collaborative planning process was used during the study to ensure the local cities and their residents would support the *Implementation Plan*. The foundation for the collaborative process was a solid technical analysis process. The study collected traffic data; provided analysis of existing conditions; projected 2025 traffic conditions; developed conceptual improvement strategies and designs; and used experts for block-by-block evaluation of study elements for pedestrian, bicycle, and sound wall needs and proposed improvements.

Study progress and direction was monitored and guided by a Policy Advisory Board (PAB). PAB membership consisted of two county supervisors, one councilmember each from twelve cities, two VTA board members, and two members of the County Roads Commission. The PAB met as a whole every two to three months to discuss study and systemwide issues and met twice in small groups to discuss issues and recommendations for individual expressways. County Supervisor James T. Beall, Jr., a leading advocate of the Expressway Study, served as the chair of the PAB.

A Technical Working Group (TWG) provided review and input to both study staff and the PAB. The TWG members included staff from twelve cities, Caltrans, Metropolitan Transportation Commission (MTC), and Santa Clara Valley Transportation Authority (VTA). TWG meetings occurred every one to two months to prepare for PAB meetings, address specific issues, and achieve technical and administrative consensus.

Expressway System Overview

The expressways were designed to relieve local streets and supplement the freeway system. In addition to single-occupant automobiles, bicycles, pedestrians, carpools, and transit use the expressways. Key statistics about the system include:

- **8** expressways, **5** of which have HOV lanes
- **62** centerline miles of expressway, traveling through **11** cities
- **134** signalized intersections
- **55** bridges

- **150,000** feet of existing sound walls
- **1.5 million** vehicles use expressways daily
- **55%** of Santa Clara County residents use an expressway daily (based on 2001 telephone survey)

Key findings about expressway characteristics and traffic conditions include:

- The highest use expressways are Capitol, Lawrence, and Montague with 280,000 to 300,000 daily users. San Tomas is close behind at 220,000. Central, Foothill, and Almaden are in the mid-range (110,000 to 150,000) and Oregon-Page Mill is the lowest used expressway at 50,000.
- The posted speed limit is 45 or 50 miles per hour (mph) for all but Oregon-Page Mill Expressway. However, due to congestion and signal wait times, the average speed during commute hours is generally much lower. Montague and Lawrence experience the lowest average speeds (12 and 17 mph, respectively) due to high demand, limited capacity, and the resulting congestion levels.
- Residential land uses, mixed with some commercial, are predominant along three of the expressways while one expressway is surrounded mostly by industrial uses. The remaining four expressways serve a fairly equal mix of residential/commercial and industrial land uses.
- Almaden, Capitol, Lawrence, Montague, and San Tomas users expressed the greatest dissatisfaction with congestion levels (over 70% of surveyed respondents), while Foothill and Central were seen as less of a congestion problem (around 55%), and Oregon-Page Mill fell in the middle (61%). (2001 telephone survey)
- Out of the 134 signalized intersections, 30 intersections were operating at level of service (LOS) F in 2001. The number of LOS F intersections is projected to increase to 50 by 2025. San Tomas has the highest number of existing LOS F intersections (9 intersections) with Montague close behind (8). Lawrence and San Tomas tied for the highest number of 2025 LOS F intersections (12 each).

- Montague Expressway currently operates at LOS F corridor-wide and portions of Capitol and Central expressways are expected to degrade to corridor LOS F conditions by 2025.

Expansion of the Expressway System

Almaden Expressway – Almaden will eventually be extended to Bailey Avenue. The timing of the extension will be determined by San Jose land use decisions with the likely trigger being development of Coyote Valley.

South County – The City of Gilroy is constructing Santa Teresa Boulevard to expressway standards. The City of Morgan Hill does not support having expressways within Morgan Hill. The PAB South County representatives arrived at a consensus that a regional transportation plan is needed for the South County area. The "South County Circulation Study" will be managed by VTA and will involve the County, Gilroy, Morgan Hill, and San Jose. The results of this study will help facilitate the decision making about whether Santa Teresa Boulevard in Gilroy should be part of the County's expressway system.

Expressway Vision Statements

A key finding from the data gathering and city/community outreach is that each expressway has its own unique character, function, and community relationship. Therefore, the ultimate build-out of each expressway must vary to meet community needs. To guide the expressway plans, a vision was developed for each expressway, through a collaborative process involving the cities, TWG, and PAB.

Capital Improvement Program

The Capital Improvement Program includes roadway, bicycle, pedestrian, sound wall, and landscaping improvements.

Roadway Capacity and Operational Improvements

Seventy-two (72) roadway improvement projects are identified for the expressway system. Figure ES-1 illustrates the following types of projects:

Capacity Projects – Roadway widening, new turning lanes at intersections, and new or reconfigured interchanges/grade separations.

Operational and Safety Improvements – Auxiliary lanes, median/access closures, and bridge replacements.

Signal Operational Improvements – Traffic Operations System (TOS) equipment using advanced technologies to monitor and improve traffic flow, replacement of outdated equipment, and expanded coordination with city signal systems.

In addition to the projects shown in Figure ES-1, the roadway Capital Improvement Program includes:

HOV System Projects – Improves effectiveness of HOV system. Includes adding one new HOV lane segment, removing HOV lanes experiencing operational problems, and adding expressway-freeway HOV direct connector ramps.

Roadway Improvements Costs and Priorities

The total cost for the roadway improvement capital program is $1.64 to 1.94 billion. To determine priorities for funding and implementation, the roadway projects were divided into tiers using specific criteria. Table ES-1 summarizes the tiers.

Figure ES-1: Capacity/Operational Improvements

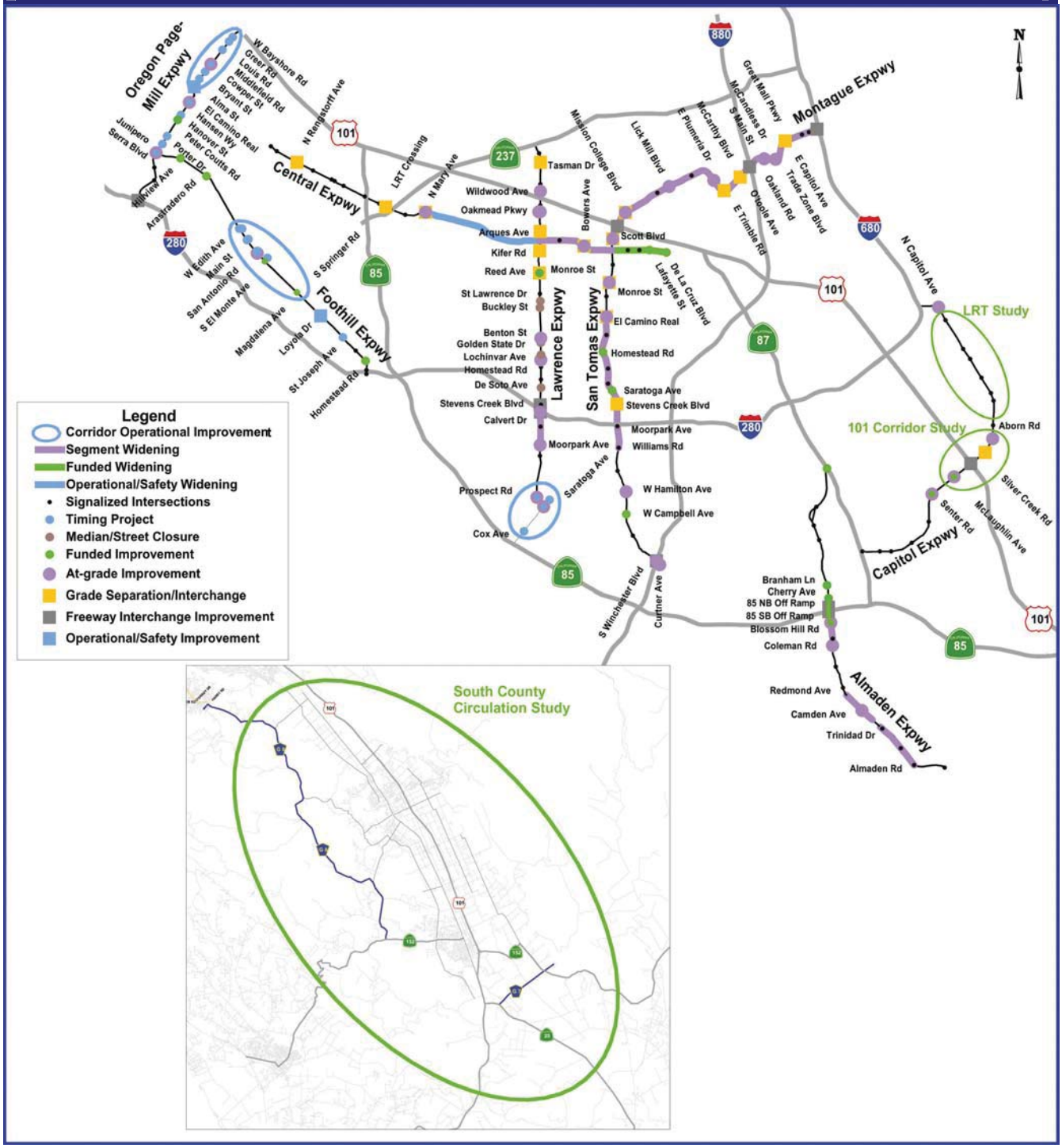


Table ES-1: Roadway Projects Tier Summary			
Tier	Tier Criteria	# of Projects	Capital Cost (millions)
1A	Improves 2001 LOS F intersections, provides operational improvements, or conducts key feasibility studies	28	$149-151
1B	Constructs interchanges at 2001 LOS F intersections	7	$261–271
1C	Improves 2025 projected LOS F intersections	13	$49–53
2	Provides other expressway capacity improvements or new technologies	15	$585–671
3	Reconstructs major existing facilities or constructs new facilities	9	$593-795
	Totals	72	$1,637–1,941

Consistent with the long-term view and expressway vision statements, the plan includes some large-scale improvement projects. While proceeding with the projects now is not economically feasible, the plan does allow for progress by recommending early feasibility studies to better quantify project benefits, costs, and impacts. The plan also emphasizes flexibility and the needs for continued close coordination with the cities and neighborhood outreach when project funds are actually in place.

The 28 projects in Tier 1A address the top priorities for each expressway and improve most of the current LOS and operational problem areas for a total cost of $150 million. These low-cost improvements can be delivered relatively quickly once funds are secured. Table ES-2 lists the Tier 1A projects.

Table ES-2 Tier 1A Capacity and Operational Improvement Projects

Projects are listed by expressway and proceed from south to north or west to east for each expressway

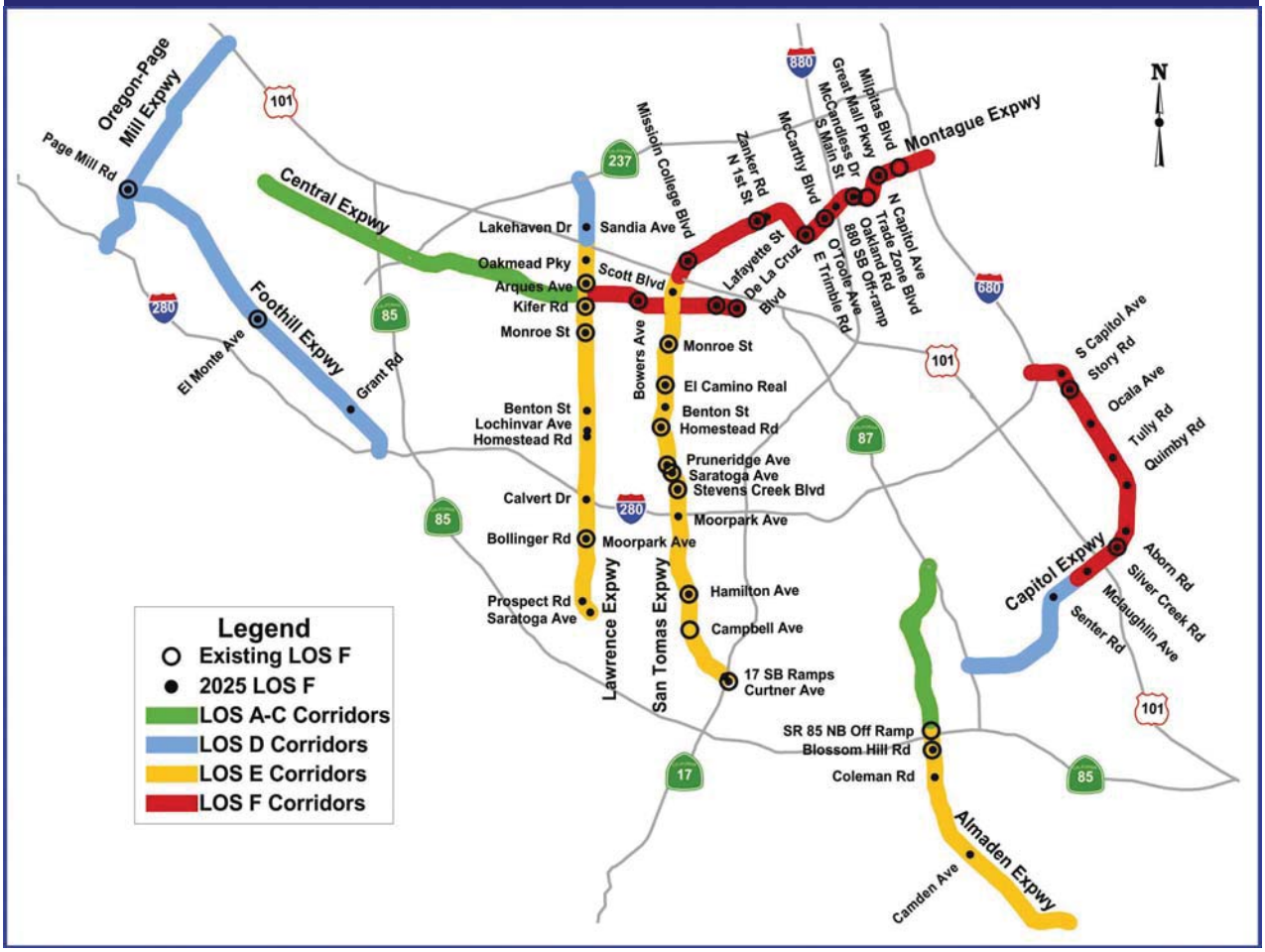
Expressway	Project Description *(When funding is obtained, each project will undergo design, environmental review, and community outreach as appropriate. Project description may be changed based on the results of these activities.)*	Cost (millions)
Almaden	Widen to 8 lanes between Coleman and Blossom Hill including an additional left-turn lane from SB Almaden to Coleman and from EB and WB Coleman to Almaden, and a right-turn lane from WB Coleman to NB Almaden; a 4th SB and NB through lane on Almaden at Via Monte; and an additional left-turn (a total of three) from SB Almaden to EB Blossom Hill and an additional SB through lane at Blossom Hill intersection	$6-8
	Initiate a Caltrans Project Study Report (PSR)/Project Development Study (PDS) to reconfigure SR 85/Almaden interchange	$0.25
	Provide interim operational improvements at SR 85/Almaden: widen SB Almaden to provide a 5th lane between the Best Buy driveway and SB loop on-ramp serving as auxiliary lane for weaving vehicles; widen SB SR 85 off-ramp to add a third left-turn; provide an additional EB approach lane resulting in two left-turn, one through/right shared, and two right-turn lanes	$2
Central	Widen between Mary and Lawrence to provide auxiliary and/or acceleration/deceleration lanes to improve ramp operations and safety	$13
	Widen to 6 lanes between Lawrence and San Tomas Expressways without HOV lane operations	$10
	Convert the Measure B HOV lane widening between San Tomas and De La Cruz to mixed flow and remove the HOV queue jump lanes at Scott, if unsuccessful after a 3 to 5-year trial period	$0.1
Foothill	Signal operational improvements between Edith and El Monte including adjacent side street intersections and at Grant/St. Joseph	$1.5
	Extend existing WB deceleration lane at San Antonio by 250 feet	$0.5
	Replace Loyola Bridge (This improvement project will also provide necessary bicycle and pedestrian facilities, and channelization and operational improvements at adjacent intersections.)	$10
Lawrence	Optimize signal coordination along Lawrence-Saratoga Avenue corridor including Lawrence/Prospect, Lawrence/Saratoga, Saratoga/Prospect, and Saratoga/Cox intersections	$0.1
	Widen to 8 lanes between Moorpark/Bollinger and south of Calvert with additional WB through lane at Moorpark	$4
	Coordinate and optimize signal phasing and timing plans at I-280/Lawrence interchange area including City of Santa Clara signals along Stevens Creek and County's signal at Lawrence/Calvert/I-280 SB ramp	$0.1
	Prepare Caltrans PSR for Tier 1C project at the Lawrence/Calvert/I-280 interchange area	$0.5
	Close median at Lochinvar and right-in-and-out access at DeSoto, Golden State, Granada, Buckley, and St. Lawrence/Lawrence Station on-ramp	$0.5
	Convert HOV to mixed-flow lanes between US 101 and Elko due to high violation rates & operational problems	$0.1

Table ES-2 Tier 1A Capacity and Operational Improvement Projects (continued)

Projects are listed by expressway and proceed from south to north or west to east for each expressway

Expressway	Project Description *(When funding is obtained, each project will undergo design, environmental review, and community outreach as appropriate. Project description may be changed based on the results of these activities.)*	Cost (millions)
Montague	Convert HOV lanes on 6-lane facility to mixed-flow use between I-880 and I-680 due to operational and safety problems	$0.1
	Baseline project consisting of 8-lane widening and I-880 par-clo interchange with at-grade improvements at Lick Mill, Plumeria/River Oaks, Main/Old Oakland, and McCandless/Trade Zone; designate new lanes between I-880 and I-680 as HOV for a 3 to 5-year trial period	$38.5
Oregon-Page Mill	I-280/Page Mill interchange modification: remove SB loop on-ramp and construct SB diagonal on-ramp with signal operations; signalize NB off-ramp intersection; and provide proper channelization for pedestrians and bicycles	$5
	Alma Bridge Replacement Feasibility Study	$0.25
	Oregon corridor improvements: • Replace signal poles and optimize timing plan avoiding impacts on safety at unsignalized intersections • Construct pedestrian ramps with relocation of traffic signal poles at signalized intersections • Study operational changes at the unsignalized intersections at Waverley, Ross, and Indian that avoid increasing traffic impacts on cross and parallel streets, enhance bicycle and pedestrian safety, and maintain vehicle safety • Conduct feasibility study of adding turn lane at Middlefield Road and converting to 8-phase signal operation to enhance efficiency and safety without taking right-of-way	$5
San Tomas	At grade improvements at SR 17/San Tomas: • Restripe the EB through lane on White Oaks to provide an optional left as 3rd left-turn lane • Provide second right-turn lane on SB off-ramp • Study potential operational & safety improvements in the interchange area	$2
	Provide a 2nd left-turn lane from EB and WB Hamilton to San Tomas and a 2nd left-turn lane from NB San Tomas to WB Hamilton	$2
	Widen to 8 lanes between Williams and El Camino Real with additional left-turn lane from EB and WB El Camino Real to San Tomas	$28
	Provide an additional right-turn lane from WB Monroe to NB San Tomas	$1
Signals/ TOS Capital Projects	Traffic information outlets such as electronic information signs, advisory radio, cable TV feeds, and a web page	$5
	Install equipment to coordinate expressway signals with city signals on perpendicular streets	$10
	Install equipment to connect with Sunnyvale, Palo Alto, Mountain View, and Los Altos traffic signal interconnect systems	$2.5
	Upgrade traffic signal system to allow automatic traffic count collection	$0.5
	Total Tier 1A	148.5 -150.5

Figure ES-2: Corridor Level of Service for No Project

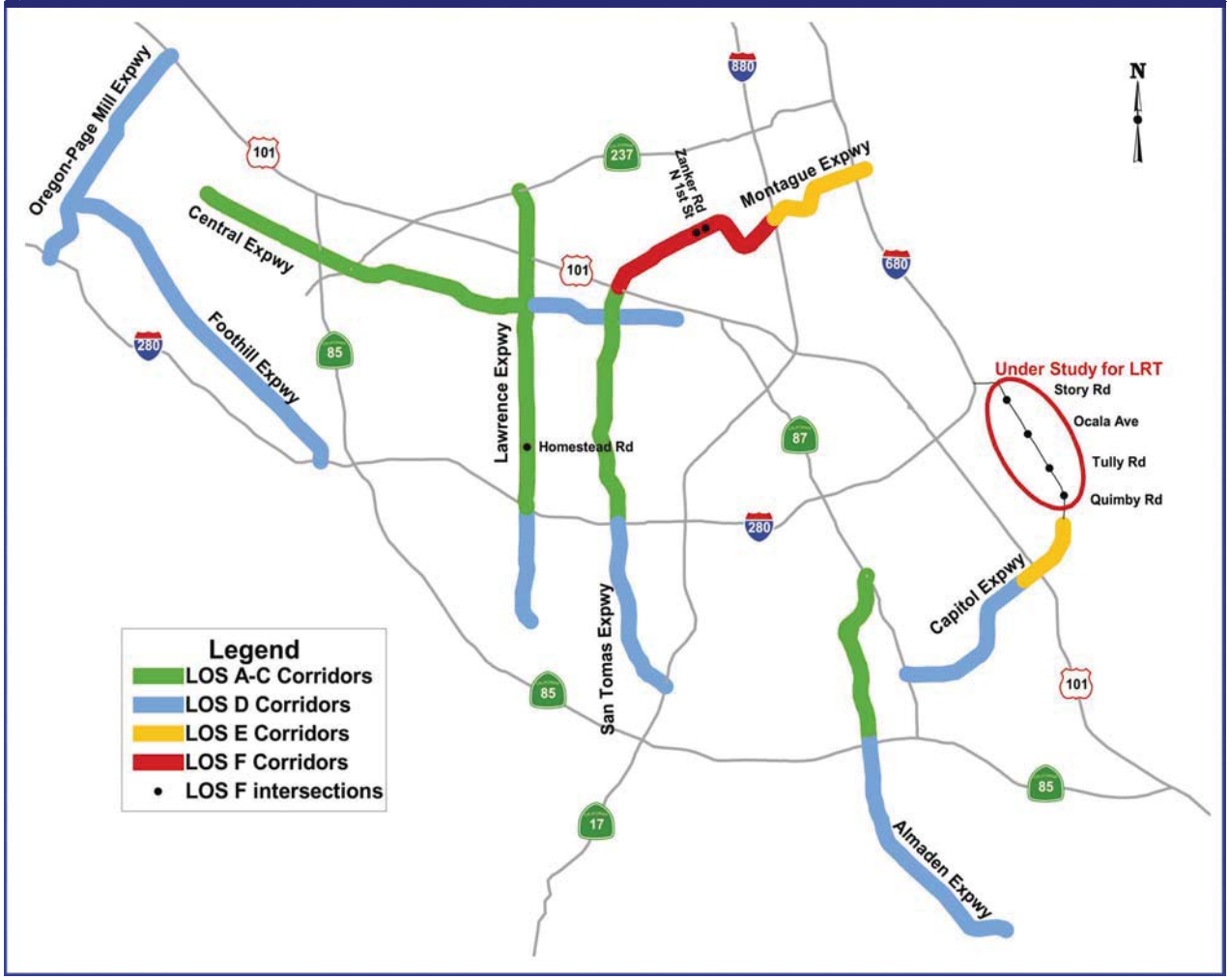


Effectiveness of Roadway Improvements

Figures ES-2 and ES-3 illustrate the LOS benefits of the recommended capacity and operational improvements for the planning year 2025. Figure ES-2 indicates projected corridor LOS and Intersection LOS F locations in 2025 if no improvements are made. Figure ES-3 indicates 2025 LOS conditions with full implementation of all recommendations. Key findings include:

- 6 of the 8 expressways would operate at corridor LOS D or better.
- Montague Expressway would have LOS E and F corridor segments but queuing and overall delay would be reduced significantly over existing levels.

Figure ES-3: Corridor Level of Service for All Projects



- Capitol Expressway may have LOS E or F segments northeast of US 101; however, a light rail line is planned for this expressway providing a travel alternative.
- 28 existing LOS F intersections and 43 projected 2025 LOS F intersections would be improved to at least LOS E, with most improved to LOS D or better.
- The Tier 1A list of projects improves 18 existing and 24 projected 2025 LOS F intersections.

Other Capital Improvements

Bicycle Projects – Bicycles are accommodated on all expressways. Bicycle improvement recommendations were identified based on bringing all expressways into compliance with the Bicycle Accommodation Guidelines (BAG). The BAG includes guidelines on bicycle travel area widths, striping, signage, trail connections, maintenance, and several other design treatments. Specific capital projects identified include striping improvements and shoulder widening.

Pedestrian Facilities – A pedestrian facilities plan was developed covering the entire length of each expressway. Recommended pedestrian improvements for traveling along the expressways vary along sections of the expressways based on physical conditions, pedestrian needs, fronting land use, and community development plans. New sidewalks are recommended to close gaps in otherwise continuous sidewalks, to access transit stops, and to provide access to land uses fronting on the expressways. Recommendations also include improved connections and directional signage to parallel pedestrian facilities, such as trails and frontage roads.

For expressway crossing needs, high-demand crossing locations were identified for potential crossing enhancements ranging from reconfiguring intersections to make them more pedestrian-friendly to installing pedestrian countdown timers and pedestrian ramps. Two new pedestrian overcrossings (POCs) are also recommended – one on Almaden near Coleman Road and one on San Tomas near Latimer Avenue.

Finishing Program: Sound Walls – An assessment of sound wall needs was conducted according to the guidelines of Caltrans and the Federal Highway Administration (FHWA). Overall, the plan recommends 63,500 feet of new sound walls and replacing 36,000 feet of existing walls with higher walls. The plan also acknowledges that sound walls are not always the preferred method of noise abatement for the local community and recommends that the preferred level and type of noise abatement (including sound wall height) be based on noise analysis, community outreach, and city coordination when funding is available.

Finishing Program: Landscaping – The following level of landscaping is recommended for the expressways: trees and limited shrubs; median finishes, such as decomposed granite; sound walls covered with vines; and, automated irrigation system. However, the plan also recommends continuing with the County's current landscaping policy to not install new landscaping unless funds are available for maintaining it.

Table ES-3 summarizes the costs for these recommended capital improvements by expressway.

Table ES-3: Other Capital Improvements

Expressway	Bicycle (millions)	Pedestrian (millions)	Sound Wall/ Noise Abatement (millions)	Expressway Total (millions)
Almaden	$0.40	$6.35	$5.60	$12.35
Capitol (1)	$0.20	$3.83	$3.74	$7.77
Central	--	$2.67	$5.10	$7.77
Foothill	$0.50	$0.45	$8.84	$9.79
Lawrence	-- (2)	$2.81	$3.59	$6.40
Montague	-- (3)	$0.40(3)	$2.06	$2.46
Oregon-Page Mill	--	$1.20	$5.70	$6.90
San Tomas	$0.45	$5.29	$13.09	$18.83
Systemwide Improvements	$0.10	$0.20	--	$0.30
Landscaping Installation				$21.00
			System Total	$93.57
			Part of Roadway Projects (4)	$18.14
			Net Additional Cost	$75.43

Notes:

(1) Bicycle, pedestrian, and sound wall needs for Capitol between Nieman and Story will be determined by VTA's light rail project.

(2) Bicycle improvement needs for Lawrence will be completed as part of the 2003 pavement resurfacing project.

(3) The 8-lane widening for Montague includes all bicycle improvements and sidewalks.

(4) Roadway capacity/operational projects include pedestrian, bicycle, and sound wall improvements within project limits.

Maintenance & Operations

Maintenance and operations include all activities and materials necessary to keep the expressways functioning safely and efficiently while looking presentable. Based on comments received from the public, cities, and policymakers, the overall goal for expressway maintenance and operations can be summed up as: "The expressways should be cleaner and greener with smooth pavement and synchronized signals."

The County's current practices are limited by available revenue. However, to meet the desired goal, the plan recommends levels of effort comparable to the cities' current practices. Table ES-4 lists the estimated costs for the recommended levels of effort. The operating costs for the recommended levels of effort exceed existing available revenues.

Table ES-4: Recommended Maintenance/Operations Levels of Effort

Category	Annual Operating Cost (millions)
Signal Operations/TOS	$1.5
Sweeping	$0.6
Landscape Maintenance	$4.0
Pavement Maintenance	$3.8
Infrastructure Replacement (all types)	$6.6
All Other	$1.5
Total	$18.0

Funding Strategy

The *Implementation Plan* has laid out a comprehensive program for the improvement and maintenance of the expressways over the next 30 years. The plan identifies a total capital program approaching $2 billion as well as needs of $18 million annually for maintenance and operations. In addition, delivery of the entire capital program would require $11.4 – 13.5 million in annualized matching funds, assuming the projects are subject to VTA's 20% local match requirements. Funding such a program requires both aggressively pursuing existing revenue sources and finding new revenue sources.

Capital Improvements Fund Sources

The primary funding sources for the capital improvement program are federal and state grants. These grants are allocated through VTA's Valley Transportation Plan (VTP) 2020. Currently, out of a $2 billion roadway funding program, VTP 2020 allocates $80 million for expressways. VTP 2020 also includes competitive grant programs for bicycle, pedestrian, TOS, and sound wall improvements.

The County remains financially challenged to provide a significant local match for expressway projects given that existing roadway revenue sources are needed for maintenance and operations. The most significant existing and potential source of local match funds are developer traffic impact fees. The County cannot directly collect developer traffic impact fees in the incorporated city areas through which the expressways run. Developer contributions are determined and collected by the cities. It is unlikely that even an aggressive impact fee program pursued by all cities would raise enough funds for the full 20% local match for every project given the magnitude of the needs and the limited development opportunities along many of the expressways.

Maintenance and Operations Fund Sources

The only continuous sources of expressway maintenance and operating funds are the County's share of the state gas tax and future Proposition 42 (sales tax on gas tax) funds. These funds must be divided among the expressways and the 635 miles of county

unincorporated roads. The *predictable sustainable* revenue available for expressway maintenance/operations ranges from $5.2 million in 2003 to $7.9 million in 2009 . If enacted, current state and federal proposals to index gas taxes for inflation would provide some additional revenue and would help sustain current levels of effort since the gas tax does not currently keep pace with increased costs due to inflation and higher traffic demand.

Supplementing the gas tax revenues are landscape maintenance agreements where cities and private developers pay for routine landscaping maintenance. There are also occasional one-time funding sources, most notably for pavement maintenance. The current expressway pavement resurfacing projects are funded through the Measure B sales tax program. VTP 2020 also provides pavement management grants. These special funding sources cannot be counted on to be available for scheduled routine maintenance necessary to extend pavement life.

Funding Strategy Recommendations

Taking into consideration all the existing, potential, and possible new funding sources, a funding strategy has been developed addressing each major area of need. Key recommendations from that funding strategy include the following:

- As part of the VTP 2030 process, request that VTA increase the expressway allocation from $80 million to at least $150 million to allow full implementation of Tier 1A projects. Tier 1A roadway projects have highest priority for VTP 2030 Expressway Program funding allocations.
- Jointly with VTA, pursue additional revenue for meeting both the transit operating needs and the expressway maintenance/operations needs, including capital program local match requirements.
- Resolve the expressway local match issue during VTA's VTP 2030 process, especially if a new funding source cannot be secured. Strategies include continuing to work with the cities to secure developer impact fees where appropriate, exchanging federal/state funds for local funds with no match requirements, and using other non-county sources as match.

- Work with the cities to collect expressway traffic mitigations, and expressway pedestrian, sound wall, and landscaping improvements through land development approval processes.
- Pursue grants and partnerships for non-roadway capacity projects, such as pedestrian, bicycle, sound wall, and TOS projects.

Next Steps

The *Implementation Plan* will be submitted to VTA for inclusion in VTP 2030 – an update of VTP 2020. It is anticipated that VTP 2030 will incorporate all projects and priorities as identified in the plan. VTP 2030 will also determine the amount of federal and state funding that will be allocated to the expressway program over the next 30 years.

Based on key recommendations in the *Implementation Plan*, there are several activities and improvements for the County to pursue in the near term that do not require large financial outlays, including:

- Participate in the development of the South County Circulation Study.
- Implement new signal timing plans developed as part of the Expressway Study.
- Conduct the environmental review for converting the Lawrence HOV lane north of US 101 and the Montague HOV lanes east of I-880 to mixed-flow lanes.
- Update County policies regarding bicycle and pedestrian access on the expressways to be consistent with the plan.
- Work closely with VTA and the cities to pursue the *Implementation Plan* funding strategy.

The County will update the *Implementation Plan* every three years in conjunction with the triennial updates of VTA's VTP plans to reflect changing traffic and financial conditions. In addition, an interim update will be prepared in 2004 if VTA does not fully fund the Tier 1A list of roadway projects in VTP 2030. This interim update will focus on using the plan's collaborative process to establish Tier 1A priorities.