I-5 Corridor Improvement Project

Final Report

I-5 Corridor Major Investment Study

July 1998

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I-5 Corridor MIS
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Project Sponsors:

Los Angeles County Metropolitan Transportation Authority
I-5 Consortium Cities Joint Powers Authority
California Department of Transportation
Orange County Transportation Authority
Federal Highway Administration
Federal Transit Administration

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Overview

A Major Investment Study (MIS) is a tool for making better decisions about improving transportation in metropolitan areas. Under the policies promoted by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), the MIS is an integral part of a metropolitan area's long-range planning process that is designed to provide decision-makers with better and more complete information on the options available for addressing identified transportation problems. The MIS provides a focused analysis and evaluation of the mobility needs and related problems of a corridor within the region. Specific criteria are developed to measure benefits, costs, and impacts, as well as financial requirements. The MIS evaluation process leads to a decision on the design concept and scope for corridor investments and policies that are then incorporated into a metropolitan area's transportation plan. As a key element, the MIS is a cooperative and collaborative process that includes both agencies and the public. The MIS is necessary for major projects seeking federal funding, but decisions about what the project will be are made at the local level.

The I-5 Corridor Improvement Project MIS, initiated in December 1995 and concluded in July 1998, was sponsored by the Los Angeles County Metropolitan Transportation Authority, I-5 Consortium Cities Joint Powers Authority, California Department of Transportation, Orange County Transportation Authority, Federal Highway Administration, and the Federal Transit Administration. These agencies saw the need for future improvements in the I-5 Corridor. As a result, an MIS was conducted and supporting documents prepared to support the decisions leading to a set of preferred transportation elements. The overall study goal of the I-5 MIS was to: develop a cost-effective, multi-modal transportation improvement strategy that substantially increases capacity and improves safety and efficiency, while protecting the best interests of the adjacent communities.

The objective of this *I-5 Corridor Major Investment Study – Final Report* is to summarize the process and the decisions made throughout the project to date. This report describes the MIS process, details public and agency involvement, identifies problems and needs of the I-5 Corridor, sets the goal and objectives for the project, describes conceptual alternatives and their ability to meet the objectives, and identifies funding opportunities. This report also explains how and why the Locally Preferred Alternative (LPA) was selected and identifies future steps to implement the project.

I-5 Corridor Major Investment Study Process

The I-5 Corridor

The Interstate 5 (I-5) freeway is a major regional transportation corridor that runs along the west coast of the United States from Mexico to Canada. It serves as the backbone of the Southern California transportation network, connecting the major urban centers of Los Angeles, Orange, and San Diego Counties (Figure 1). It serves commuters living in Orange and Riverside Counties to major employment centers in Los Angeles County. In addition, it is a major north-south route that is used for inter-regional, intra-regional, interstate, and international travel and goods movement.

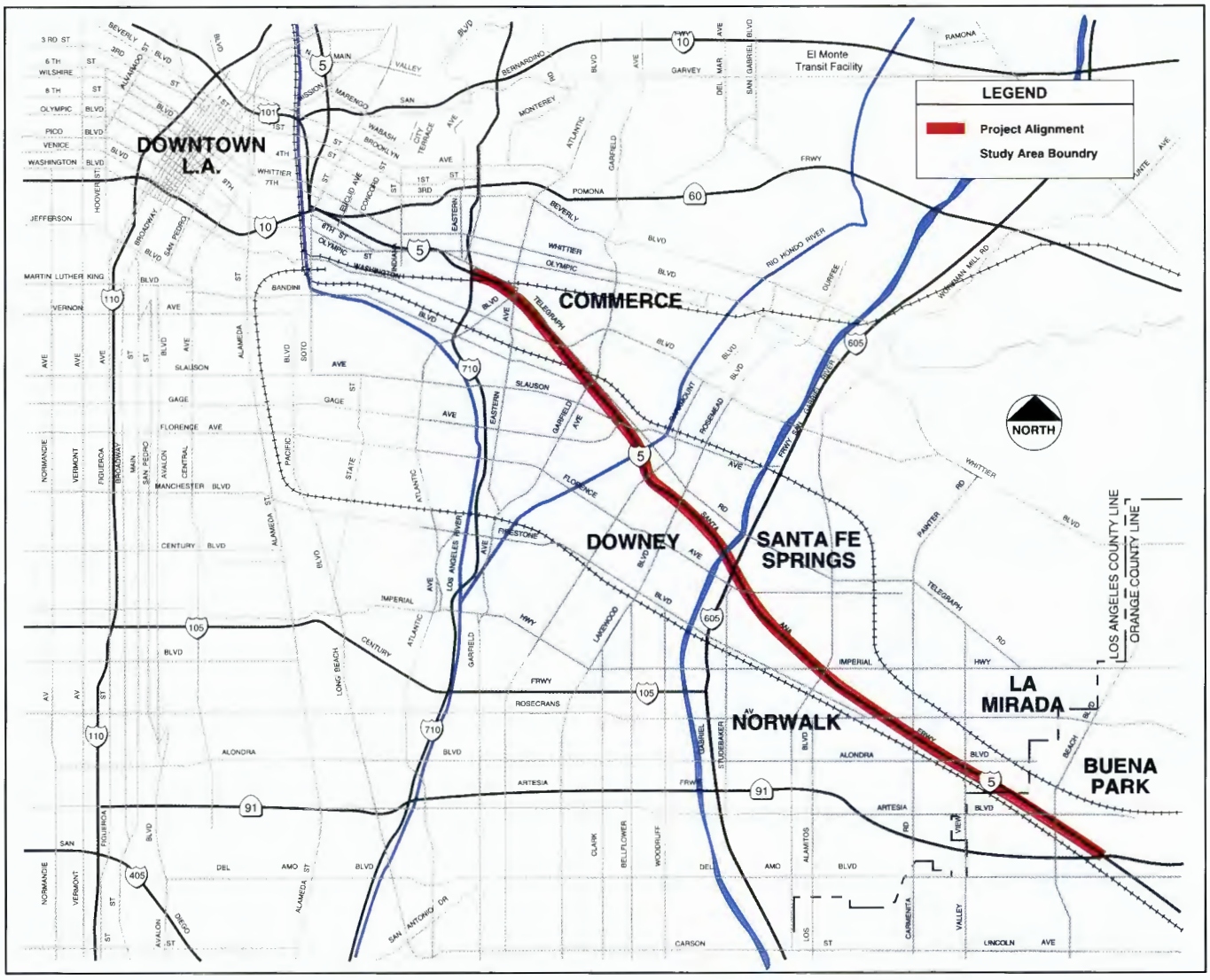


Figure 1: Project Study Area

Age and history have combined to severely limit the ability of the I-5 to meet the mobility requirements of a modern urban transportation facility. Constructed in the early years of the freeway era, the I-5 freeway is now an old facility and, by today's standards, it does not provide enough capacity to handle the transportation demands placed upon it. Over 200,000 trips per day through the corridor are common and speeds during the peak commute hour routinely average less than 30 miles per hour.

Given the substantial need for increased mobility in the I-5 Corridor and the severe limitations for meeting the anticipated demand, the California Department of Transportation (Caltrans), the Los Angeles County Metropolitan Transportation Authority (LACMTA), the I-5 Consortium Cities Joint Powers Authority (JPA), and the Orange County Transportation Authority (OCTA) agreed to develop alternatives to enhance the capacity of the I-5 Corridor between State Route 91 (SR-91) and Interstate 710 (I-710). A number of different modes were considered to solve the mobility problem, such as additional general-purpose and high-occupancy-vehicle (HOV) lanes and transit. These alternatives were developed under the guidelines of the federal Major Investment Study (MIS) process and the MIS guidelines developed by the Southern California Association of Governments (SCAG), which is the local Metropolitan Planning Organization (MPO).

ISTEA and SCAG MIS Requirements

Under the policies promoted by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the MIS is an integral part of a metropolitan area's long-range planning process. It is designed to provide decision-makers with better and more complete information on the options available for addressing identified transportation problems before investment decisions are made. The MIS provides a focused analysis and evaluation of the mobility needs and related problems; identifies an appropriate set of multi-modal options to address the identified needs and problems; develops measures of benefits, costs, and impacts; and allows for a comprehensive analysis and evaluation of the options. The successful completion of the MIS allows the public and the local agencies to adopt plans for implementing the needed improvements.

As delineated in the SCAG's Procedure Manual for Major Investment Studies, an MIS must include the following elements:

- A cooperative and collaborative process to establish the range of alternatives to be studied, and factors to be addressed.
- An evaluation of the effectiveness and cost-effectiveness of alternative investments or strategies in attaining local, state, and national goals and objectives.
- Consideration of the direct and indirect costs of alternatives, and factors such as mobility improvements; social, economics, and environmental effects; safety; operating efficiencies; land use and economic development; financing; and energy consumption.
- A proactive public involvement process that provides opportunities for the public and various interests to participate.
- Documentation of the consideration given to alternatives and their impacts.

The I-5 Corridor MIS contains all of this required information.

The I-5 Corridor MIS Process

The process used in the development of the I-5 Corridor MIS followed closely the MIS guidelines of both ISTEA and SCAG (Figure 2). In the early initiation of the I-5 Corridor MIS, Caltrans was identified as the lead agency for the project. In this role, they were responsible for managing the development of the MIS and development of a recommendation for a preferred alternative to be considered by SCAG's Transportation Communications Committee (TCC) for future adoption in the Regional Transportation Plan (RTP).

Throughout this MIS process, documentation has been prepared to record milestones which have led to the next level of study. The following reports have been prepared as part of the I-5 Corridor MIS:

- Issues Analysis Report (October 1996)
- Assessment of Corridor Operations Improvement Needs (November 1996)
- Mobility Problem & Purpose and Need Statement (November 1996)
- Project Public Involvement Plan (May 1996)
- Conceptual Alternatives Plan Set (May 1997)
- Conceptual Alternatives Report (June 1997)
- Screening Report (July 1997)
- Issues Analysis Report (January 1998)
- Final Evaluation Report (April 1998)
- Public Involvement Program – Final Report (June 1998)
- Funding Opportunities – Final Report (May 1998)
- Locally Preferred Alternative – Final Report (May 1998)
- I-5 Corridor MIS – Final Report (July 1998)

The following summary reports document the I-5 MIS process and decisions: Final Evaluation Report, Locally Preferred Alternative – Final Report, Funding Opportunities – Final Report, and Public Involvement Program – Final Report. These reports are available for review at Caltrans District 7 in Los Angeles and at city halls and public libraries of the I-5 Corridor cities, including Buena Park, La Mirada, Santa Fe Springs, Norwalk, Downey, and Commerce.

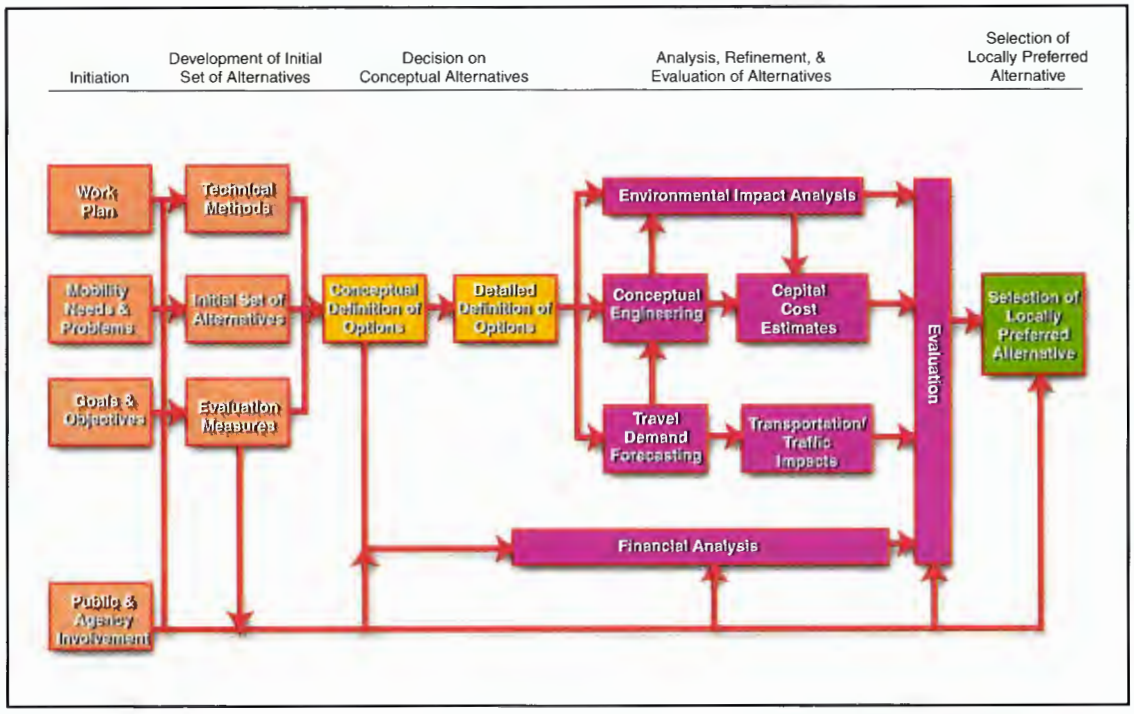


Figure 2: The I-5 MIS Process

Public and Agency Involvement

To ensure that the public played a role in the I-5 Corridor MIS, an extensive public involvement program was developed under the direction of the I-5 Steering Committee. The basic goal of the public involvement program has been to share project information with stakeholders, identify the issues and concerns of greatest importance regarding I-5, and integrate that feedback into the process. The program has involved people and organizations who have an interest in the project.

A cooperative and collaborative process was facilitated by the I-5 Steering Committee formed by Caltrans, providing oversight of the study and technical input based on their unique regional perspectives. The Steering Committee was comprised of representatives of the following agencies:

- California Department of Transportation (Caltrans)
- Los Angeles County Metropolitan Transportation Authority (LACMTA)
- I-5 Joint Powers Authority (JPA), representing the six cities along the I-5 Corridor. The six JPA cities include Buena Park, La Mirada, Santa Fe Springs, Norwalk, Downey, and City of Commerce.
- Orange County Transportation Authority (OCTA)
- Southern California Association of Governments (SCAG)
- Los Angeles County
- City of Los Angeles Department of Transportation (LADOT)
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- Parsons Brinckerhoff Quade and Douglas, Inc. (PB); I-5 MIS Lead Consultant
- Myra L. Frank & Associates, Inc. (MFA); Lead Consultant for I-5 Interim High-Occupancy Vehicle (HOV) Lane Improvements Project

The I-5 Steering Committee had the added role of providing guidance in the development of the I-5 Interim HOV Lane Improvements Project and, as a result, representatives of MFA were added to the I-5 Steering Committee. The I-5 Interim HOV Lane Improvements Project has been represented at both I-5 Steering Committee meetings and at MIS SCAG Peer Review Group meetings. Throughout the process, the interim improvements have also been an integral part of discussions with agencies and the public.

Representatives of this committee met every two months (or as needed) to monitor the progress of the study, to provide reviews of all the technical products being developed, to ensure that a complete and sound technical analysis was being performed, and to achieve consensus on the results of the MIS. Representatives also participated in the public meetings to gain their own sense of the public's reaction to the planning process and the study recommendations.

I-5 Interim HOV Project

The ongoing Orange County I-5 widening project will widen the freeway to ten lanes north to SR-91, leaving the segment between SR-91 and I-605 a six-lane bottleneck. The proposed I-5 Interim HOV Lane Improvements Project, currently being conducted by Caltrans between SR-91 in Buena Park and Lakewood Boulevard in Downey, would add one HOV lane in each direction.

This project represents the first phase of the ultimate I-5 improvements now being considered as part of the I-5 Corridor MIS. Although the Interim HOV Project is considered an interim improvement for the freeway, it is designed to be compatible with the ultimate I-5 Corridor MIS design concepts.

Other technical advisory committees were formed on an ad-hoc basis to provide input on specific technical and policy issues such as geometric design, consideration of non-standard geometric design features, formats for public meetings, and the decision process for the selection of a preferred alternative. These ad-hoc committees were formed as subcommittees of the larger Steering Committee and met when needed as specific issues arose.

The public involvement program used a variety of meetings, workshops, information materials, and communication strategies to inform the public and agencies about the I-5 Corridor MIS:

- *Community Workshops*: Two rounds of workshop meetings with the directly affected communities to update them on progress and solicit feedback.
- *Stakeholder Meetings*: Two rounds of workshop meetings with the affected business and property owners to update them on progress and solicit feedback.

- *Open Houses*: Two rounds of major Open Houses for the general public to demonstrate project purpose, need, and objectives, display project alternatives, and solicit public feedback. Open houses were conducted in the cities of Buena Park, La Mirada, Santa Fe Springs, Downey, and Commerce (July 1996 and October 1997). A third open house was conducted in Norwalk to solicit input from the general public on the recommended LPA (April 1998).
- *I-5 JPA Technical Advisory Committee (TAC) Meetings:* Monthly meetings were held with the cities' technical staffs to solicit feedback and build consensus.
- *I-5 JPA Board Meetings:* Bi-monthly meetings were held with elected city officials to solicit feedback and build consensus.
- *Interviews with City Managers*: Personal interviews were held with city managers to identify stakeholders and affected communities.
- *City Council Briefings:* Periodic briefings were given to the city council of each JPA member city regarding the progress, alternatives, and impacts.

The public involvement plan for the MIS was initiated to support Caltrans, the JPA, FHWA, LACMTA, OCTA, and the technical teams in building consensus for a project to enhance mobility within the I-5 Corridor. The public and agencies were involved throughout the MIS process and continue to contribute to the Interim HOV Project.

In addition to the activities described above, the I-5 Steering Committee formed the Involved Agency Committee to ensure early involvement of federal, state, and local environmental and permit agencies. Due to limited resources, these agencies were not able to play an active role in the development of the I-5 MIS, but copies of the major documents developed for the MIS process were distributed to representatives of each of the resource agencies.

Involved Agency Committee

- *U.S. Environmental Protection Agency(Region 9)*
- *U.S. Army Corps of Engineers*
- *U.S. Fish and Wildlife Service*
- *California State Public Utilities Commission*
- *California Department of Fish and Game (Region 5)*
- *Office of Historic Preservation*
- *California Air Resources Board*
- *California Highway Patrol*
- *State Regional Water Quality Control Board*
- *Los Angeles County Flood Control District*
- *South Coast Air Quality Management District*

The final objective of this extensive public and agency involvement program was to establish consensus of a Locally Preferred Alternative (LPA) which would improve the mobility and quality of life for those directly or indirectly affected by the I-5 Corridor. Public comments on the alternatives were taken into consideration as part of the selection of the LPA.

Input from the public involvement program was considered throughout the MIS process as indicated in the MIS Process Flow Chart (see Figure 2). Public and agency input early in the development of conceptual alternatives resulted in a Design Review Group Workshop. This workshop was held to resolve comments associated with the draft conceptual alternatives and to identify locations where non-standard freeway designs might be appropriate. The final set of conceptual alternatives developed as a result of the Design Review Group were carried forward into the evaluation process.

During the public meetings and open houses, the majority of the concerns were about right-of-way acquisition and the impacts of the proposed alternatives on affected properties. Other issues raised during the MIS public involvement program included:

- The need for greater mobility in the I-5 Corridor.
- The fact that improving the freeway, either by widening or double-decking, would not entirely resolve capacity problems, so improvements should be made to the existing transit systems at the same time.
- Connections to surface streets and other freeways need to be improved.

Opinions regarding the alternatives varied widely, and the selection of a preferred alternative was generally not as important to the public as the potential impacts on their properties and property values (see section titled "MIS Completion and Future Steps").

The results of the public and agency involvement conducted throughout the I-5 Corridor Improvement Project MIS are documented in the *Public Involvement Program – Final Report* (June 1998).

Project Purpose and Need

Corridor Characteristics and Problems

To gain an understanding of the I-5 Corridor MIS "Purpose and Need," it was first necessary to examine the demographics, travel characteristics, and programmed improvements for the I-5 Corridor. The current and future characteristics of the I-5 Corridor and study area as they relate to the various categories are as follows:

Freeway-Related Characteristics

- Capacity on the existing and planned transportation facilities in the I-5 Corridor from SR-91 to I-710 is

not sufficient to handle forecasted travel demand by the year 2015.

- Orange County is currently widening I-5 from six to ten lanes south of the I-5 study area at SR-91, providing four general-purpose lanes and one high-occupancy-vehicle (HOV) lane in each direction. When completed in the year 2000, the six-lane section of I-5 north of SR-91 will become a severe bottleneck for the northbound traffic.
- An interim improvement project is currently being planned adding one HOV lane in each direction on the section of I-5 between SR-91 and Interstate 605 (I-605) and construction is scheduled to start in the year 2003. This will serve to reduce the impact of the northbound bottleneck.
- Average travel speeds in the study area range from 30 mph during the PM peak period to 32 mph during the AM peak period in those sections of the freeway not impaired by incidents. Incidents occur approximately 50 percent of the time on the I-5 freeway and travel times increase significantly during these periods.
- Severe traffic congestion and low travel speeds occur on the I-5 freeway during most of the day. As the volume of traffic continues to grow over the next twenty years, this condition will only get worse.
- Congestion exists throughout the I-5 Corridor for most of the day, with more than 50 percent of the daily trips occurring during the morning and evening peak periods.

Arterial-Related Characteristics

- The arterial street network in the study area serves local trips in the corridor, and handles the majority of bus transit in the I-5 Corridor. Currently, almost thirty percent of the major intersections in the corridor operate at an unacceptable level of service, and with the anticipated growth in traffic volumes, many more of the intersections will fail to meet acceptable performance standards.
- The study area currently has severe mobility problems, as evidenced by extensive congestion on the adjacent arterial streets. This situation is aggravated by inadequate interchanges, lack of continuous parallel arterial routes, and lack of alternatives to single-occupant-vehicle travel.

Demographic Characteristics

- For the I-5 study area, the population is expected to grow to about 738,000 by the year 2015, which represents an increase of approximately 19 percent. For this same period, Los Angeles County is expected to grow by about 37 percent, almost twice the growth rate projected for the study area.

- Approximately 394,000 people are currently employed in the study area, and it is estimated that approximately 120,000 workers travel into the study area every workday. The estimates for year 2015 indicate that the expected net inflow of workers would increase by 39 percent, to approximately 167,000 persons.
- A significant proportion of the population in the study area does not have access to private automobiles and must rely on the public transportation system and/or other alternative transportation modes for their basic travel needs.

Transit-Related Characteristics

- The average speed of express buses through the study area is approximately 16 mph, which is reflective of the high level of convenience offered by the private vehicle.
- The I-5 Corridor is currently being served by rail transit provided by Amtrak and Metrolink. Amtrak provides daily inter-city rail service between Los Angeles and San Diego with stops in the City of Commerce. Metrolink provides daily commuter service, with five trains during the morning commute period and six trains during the evening commute period, using the existing stations at Norwalk and City of Commerce. Another station is being planned for Buena Park.

- Both regional and local transit bus services are currently provided along the I-5 Corridor. Regional services are provided by the LACMTA and Orange County Transportation Authority. These services include regional express bus services oriented to serve long-distance commuter trips and local bus routes that serve short trips. Local bus transit services are also provided by the corridor cities of Norwalk, Santa Fe Springs, and Commerce. In addition, paratransit bus services are offered by several communities, including La Mirada. Much of this service is provided during the peak periods, with vehicles running every 30 to 60 minutes.
- There are eight existing and planned park-and-ride facilities within the I-5 Corridor to encourage ridesharing and provide a transfer point between single-occupant vehicles and public transit. These facilities are heavily utilized by express and local bus transit lines, as well as vanpool and carpool groups.

Land Use-Related Characteristics

- The region surrounding the I-5 study area is almost fully developed. Future development will come in the form of recycling and reuse of existing parcels for purposes similar to their current use. The continued development of residential communities in Orange and Riverside Counties will create additional demand on the I-5 Corridor for commuting purposes.

- The major movement of freight within the I-5 Corridor is by truck. Currently trucks average 8.0 to 10.6 percent of all daily trips within the corridor. Percentages of truck traffic are much higher during the midday, non-commute period when they reach 20 percent or more of the total traffic.

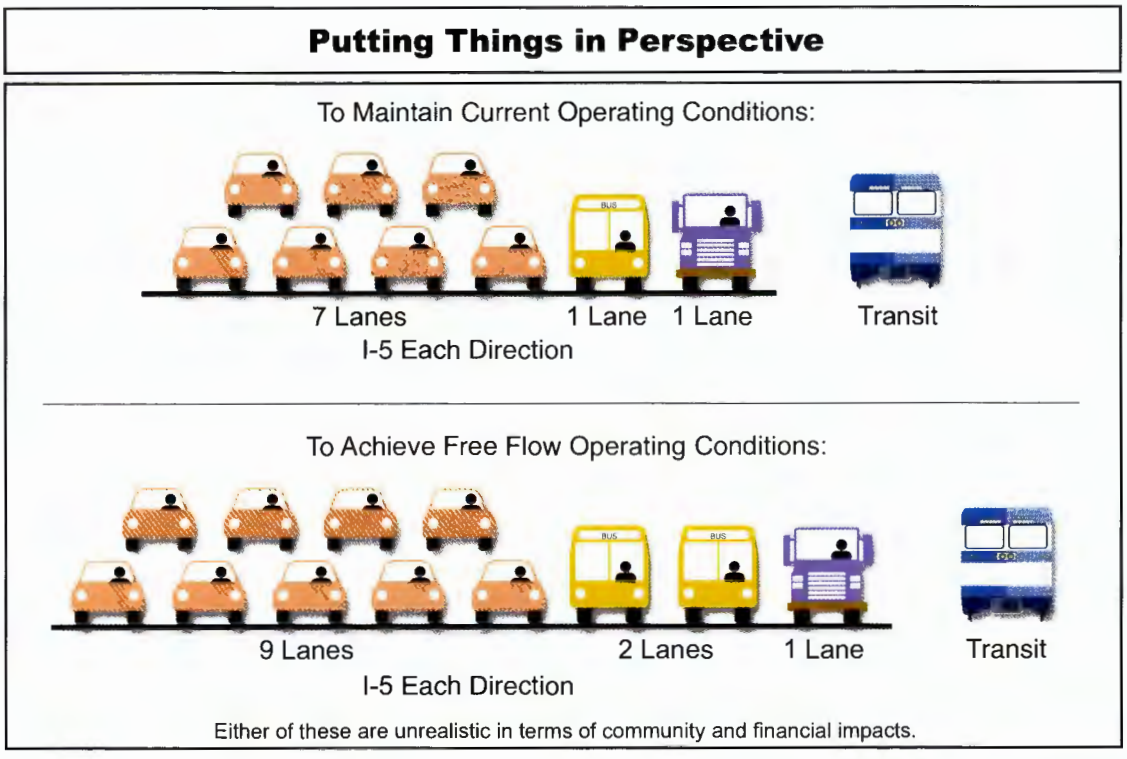
Problems and Needs

Based on an analysis of the existing traffic conditions within the I-5 Corridor, forecasts of travel demand 20 years hence, projected population and employment growth trends, extensive dialogue with concerned citizens and stakeholders in the I-5 Corridor, and public input and discussions with federal, state, local, and regional agencies, a set of problems and needs for the I-5 Corridor was identified:

- An improved transportation system within the I-5 study area is needed for all modes of travel – single-occupant vehicles, high-occupancy vehicles, buses, and trains – to better meet the transportation needs of residents and businesses in the I-5 Corridor. There are severe mobility problems and they are projected to get significantly worse by the construction year of 2020. The I-5 freeway does not have the capacity to accommodate the large number of trips that people want to make in the I-5 Corridor. For example, projected volumes just north of I-5/SR-91 interchange are expected to increase 70 percent to 272,000 by 2015. It would require a facility of 18 lanes (7 general-purpose lanes, 1 HOV lane and 1 truck lane in each direction) to handle these volumes and maintain current operating conditions (Figure 3). Therefore, there is a need to place greater emphasis on the development and enhancement of other modes of transportation in the I-5 Corridor that can be more competitive with the single-occupant vehicle.

- The I-5 freeway is not constructed to current Caltrans and FHWA design standards, and major upgrading of the facility is needed to respond to the problems of safety and mobility. Incidents and accidents are a common occurrence in most sections of the I-5 freeway, exacerbating the problems of safety and mobility. Improvements and management techniques are needed to better control the impacts of these incidents.
- The existing right-of-way is severely constrained, with residential and commercial development close to the freeway on both sides. The tradeoff between improving the freeway and the impacts to residences and businesses needs to be carefully considered.

Figure 3: Putting Things in Perspective



Goal and Objectives

The overall study goal of the I-5 MIS is stated below.

> *Develop a cost-effective, multi-modal transportation improvement strategy that substantially increases capacity and improves safety and efficiency, while protecting the best interests of the adjacent communities.*

Based on this goal and the identified problems and needs, a list of study objectives were developed and adopted by the I-5 Steering Committee. These objectives, developed through an extensive public outreach process, served as the guiding principles for developing alternatives and selecting a locally preferred solution.

Project Objectives

Clear objectives were developed to assess the effectiveness of the conceptual alternatives. The objectives considered the unique travel characteristics of the I-5 Corridor and a broad range of transportation, air quality, environmental, and community concerns. The study objectives listed below include both mobility-related and implementation-related objectives.

Mobility-Related Objectives

- Provide continuity of facilities and capacity between Orange County and the Los Angeles central business district along the I-5 freeway.
- Maintain flexibility in the freeway corridor for additional capacity improvements.
- Provide an improved level of service during the weekday AM and PM peak periods compared to the no-build condition.
- Improve interchange access/egress points and levels of service.
- Improve local surface streets to reduce existing and future congestion.
- Upgrade freeway-to-freeway interchanges (I-605 and I-710 with I-5).
- Improve access to regional transit and HOV facilities.
- Explore Transportation System Management improvements for the I-5 and parallel arterials.
- Use advanced technology, such as automatic vehicle identification and enhanced traffic management systems, to increase arterial capacity with minimal capital investment.

Implementation-Related Objectives

- Minimize right-of-way impacts to the fullest extent possible.
- Make all reasonable efforts to design the freeway improvements to full geometric design standards.
- Increase economic opportunities.
- Limit disruptions to communities and businesses.
- Minimize visual impacts.
- Minimize noise impacts.
- Use latest seismic safety designs related to any elevated options.
- Pool all local, regional, state, and federal potential financial resources for planning and implementation of the proposed improvements.
- Comply with federal and state air quality standards.
- Control dust, dirt, and debris during construction.
- Use no local financial contributions for mainline improvements.

MIS Conceptual Alternatives

In developing an MIS, a number of alternative transportation mode solutions to the mobility problem needed to be considered. This multi-modal approach was intended to provide decision-makers with a broad spectrum of transportation options to address the problem and needs of the corridor.

The I-5 Corridor from central Orange County to downtown Los Angeles has been studied intensely and extensively over the last 20 years by all the responsible agencies in Los Angeles and Orange Counties. These previous studies, which analyzed and proposed multi-modal improvements in the I-5 Corridor, were examined as a first step in developing an initial set of conceptual alternatives for the I-5 Corridor MIS. It was the intent of the I-5 Corridor MIS to build on previous studies and actions of the responsible transportation agencies. These studies analyzed many improvement concepts for the I-5 Corridor which, taken together, include recommendations for:

- General-purpose lane improvements,
- Improvements of all interchanges along I-5,
- Addition of HOV lanes throughout the I-5 Corridor,
- Improvements to truck movement and access,
- Urban rail service in portions of the I-5 Corridor,
- Improved high-capacity, high-quality express bus service throughout the I-5 Corridor,
- Enhancement and expansion of commuter rail services,
- Additional local bus service supporting rail services and local community needs,
- Local arterial improvements, and
- Traffic demand management programs.

All of the recommendations and actions from these previous studies were considered and included in the conceptual alternatives developed for the I-5 Corridor MIS. Alternatives that provided rail transit within the I-5 typical section were considered in the development of the conceptual alternatives, but because the Los Angeles-San Diego (LOSSAN) rail corridor is directly adjacent to the I-5 freeway and currently accommodates both Metrolink and Amtrak passenger service, new rail transit alignments were not considered.

The conceptual alternatives include ones with little or no capital investment (Alternatives 1 and 2) and others which would involve a substantial amount of construction (Alternatives 3 through 6, collectively known as the build alternatives). The alternatives considered in the MIS are as follows:

- Alternative 1 – No-Build (Eight-Lane) Facility
- Alternative 2 – Transportation Systems Management/Transportation Demand Management (TSM/TDM)
- Alternative 3 – At-Grade (Ten-Lane) Facility
- Alternative 4 – Combination At-Grade/Elevated (Ten-Lane) Facility
- Alternative 5 – Elevated (Twelve-Lane) Facility
- Alternative 6 – Combination At-Grade/Elevated (Twelve-Lane) Facility

Each of these alternatives includes at least some of the following elements:

- Freeway Element – Includes freeway enhancements.
- Bus Element – Includes service and operating enhancements.
- Rail Element – Includes service and operating enhancements.
- Intelligent Transportation Systems (ITS) Element – ITS is a method of making the transportation system operate smarter, using technology to monitor and control and improve the flow of traffic.
- Transportation Demand Management (TDM) Element - TDM incorporates strategies aimed at reducing or restructuring travel demand and/or behavior so as to make better use of existing transportation facilities.
- Truck Element – Includes improvements to enhance truck operations.
- HOV Element – Includes implementation of planned or proposed HOV lanes.
- Roadway Element – Includes arterial intersection improvements, arterial diversion routes, and interchange improvements.

ITS Technologies

Traffic Surveillance	*Surveillance technologies that collect information about the status of the traffic stream. Technologies include loop detectors, infrared sensors, radar and microwave sensors, machine vision, closed-circuit television (CCTV), in-pavement magnets, video camera detection systems, and vehicle probes.*
Vehicle Surveillance	*Surveillance technologies that collect a variety of information about specific vehicles. These include weight in motion for commercial vehicles, transponders for vehicle identification, and global positioning satellite (GPS) systems for vehicle location.*
Changeable	*(CMS)Technologies that allow centrally controlled messages to be Message Signs displayed to multiple users at a common location, such as a roadside display or a display board at a transit facility. These technologies would typically provide information on highway conditions, traffic restrictions, and transit status.*
Signalized	*Technologies that allow for real-time control of traffic flow. Technologies Traffic Control include optimized traffic signals, ramp metering, reversible lane designation, and ramp/lane closure.*
One-Way Mobile	*Any communications technology that Communications transmits information to potentially mobile reception sites, but cannot receive information back from those sites. Technologies providing this function include highway advisory radio (HAR), FM subcarrier, and commercial broadcasts.*
Inter-agency	*Technologies that connect travel-related facilities to other agencies Coordination such as police, emergency services providers, weather forecasters, traffic management centers (TMCs), transit operators, etc.*

I-5 Interim HOV Improvements at Carmenita Road

Alternative 1

No-Build Alternative

The No-Build Alternative assumes that no improvements would be made to the I-5 Corridor beyond those already committed, funded, and expected to be in place by year 2015. This includes the I-5 Interim HOV Lane Improvement Project from SR-91 to north of I-605 (Figure 4). Also included in the No-Build Alternative is the implementation of the regional congestion management programs identified by LACMTA in their 1995 *Congestion Management Program for Los Angeles County*, by OCTA in their 1996 *Orange County Management Plan*, and SCAG's *Draft 1997 Regional Transportation Plan* which includes funded programs.

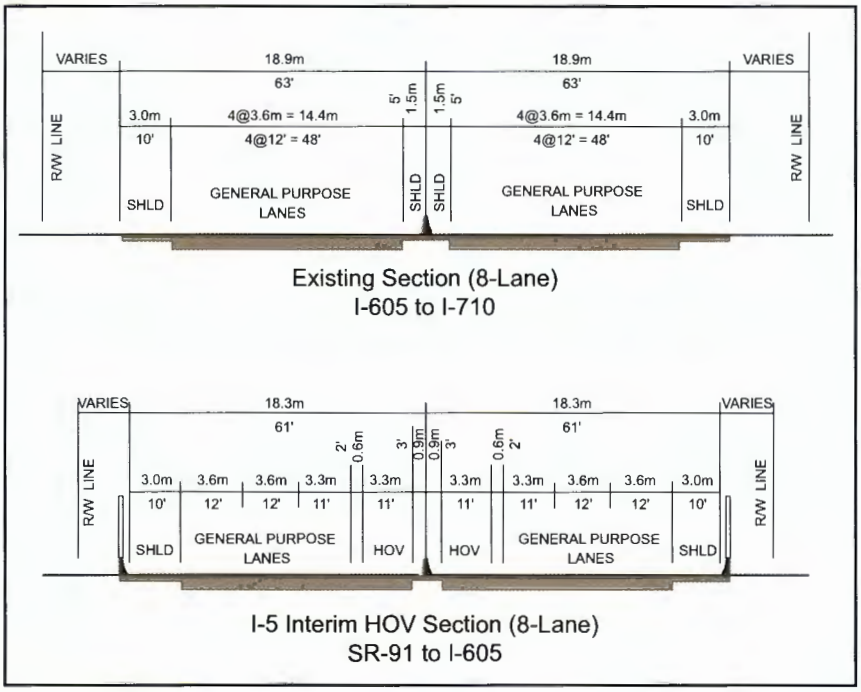


Figure 4: Alternative 1 Typical Cross Section

Alternative 2

TSM/TDM Alternative

The purpose of the TSM/TDM Alternative is to reduce the existing and future traffic congestion by implementing relatively low-cost programmatic and construction-oriented projects. The TSM/TDM Alternative incorporates two strategies which could be pursued to increase or improve mobility in the I-5 Corridor: 1) increasing the operational efficiency of the existing facilities, and 2) changing human behavior to shift transportation uses to higher-capacity modes such as transit or carpools. Some low-cost projects included as part of the TSM/TDM Alternative include arterial intersection capacity enhancements such as widenings to eliminate bottlenecks, channelization and signal-phasing modifications to improve intersection levels of service, and signal synchronization improvements (Figure 5).

Figure 5: Proposed Arterial Improvements

Alternative 3

At-Grade (Ten-Lane) Facility

Alternative 3 would include widening of the existing I-5 facility to a full-standard, ten-lane, at-grade facility between SR-91 and I-710 (Figure 6). One general-purpose lane would be added in each direction from SR-91 to I-605, and one full-standard HOV lane with ingress and egress points throughout, would be added from SR-91 to I-710 (Figure 7). This alternative would also include increases to bus and rail transit services, and ITS improvements along I-5 and adjacent arterials. All of these improvements are proposed to reduce the level of congestion resulting from travel demands and better manage traffic flow throughout the I-5 Corridor.

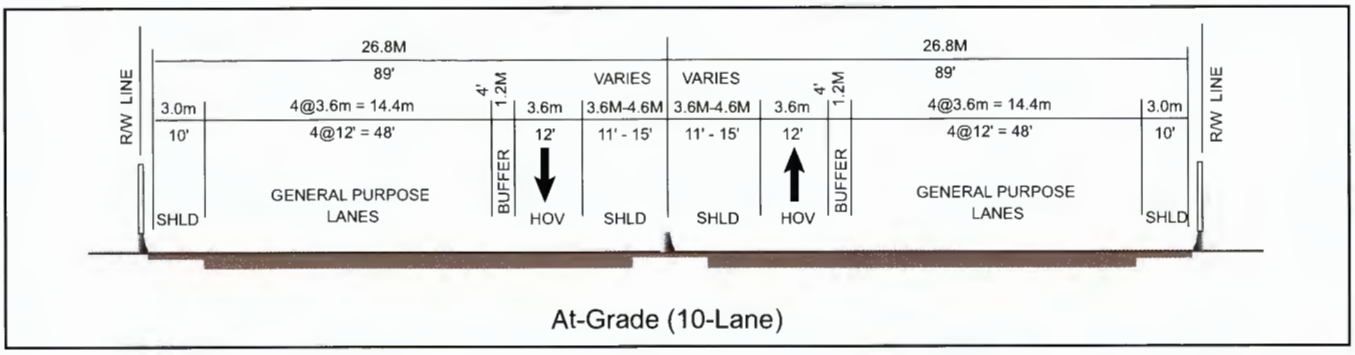


Figure 6: Alternative 3 Typical Cross Section

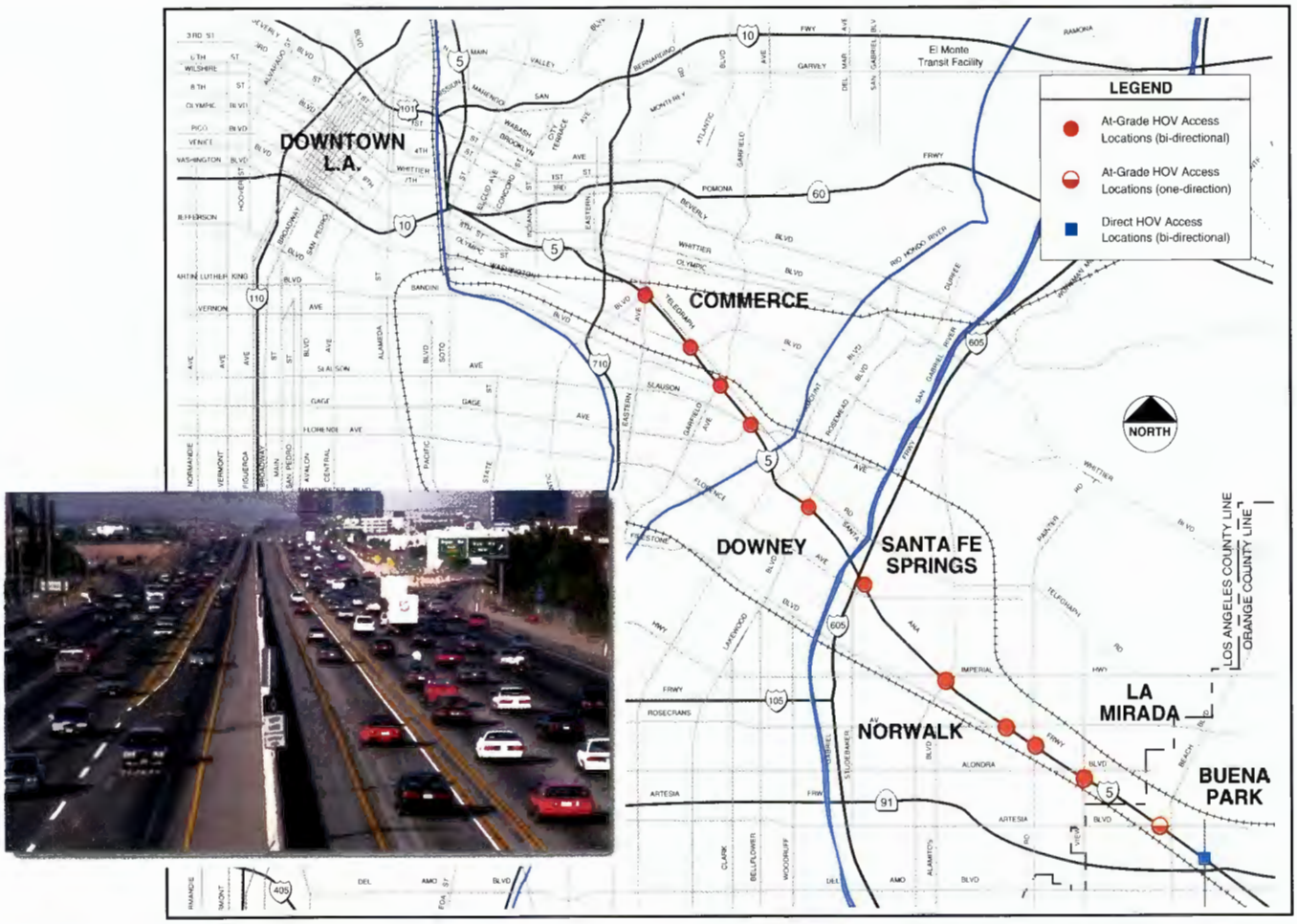


Figure 7: Alternative 3 HOV Access Locations

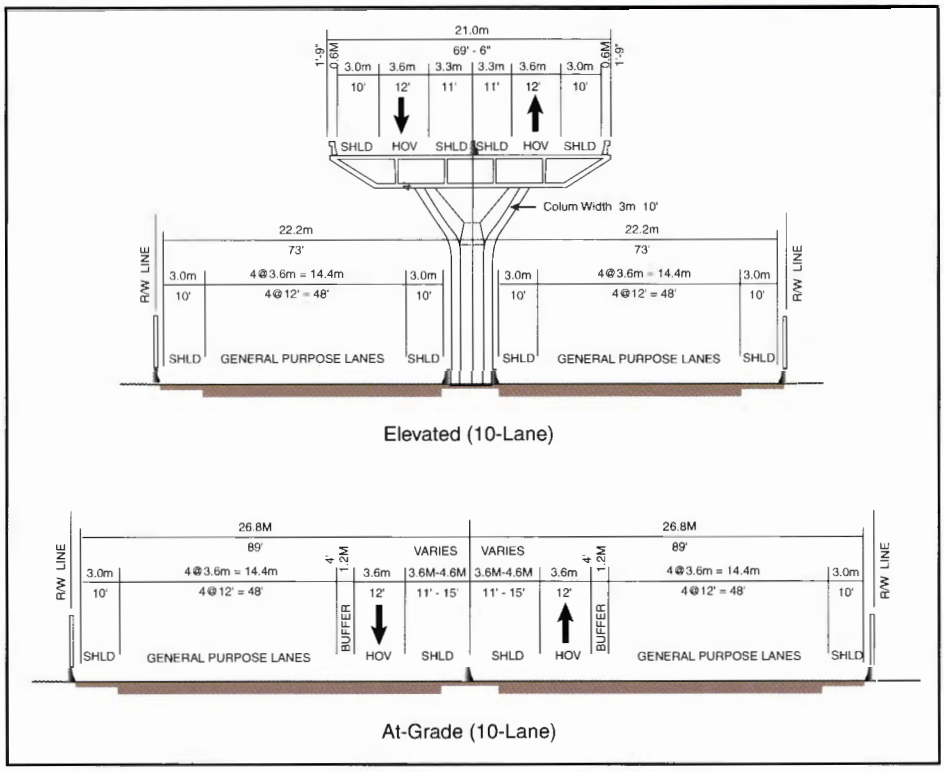


Figure 8: Alternative 4 At-Grade and Elevated Cross Section

Alternative 4

Combination At-Grade/ Elevated (Ten-Lane) Facility

Alternative 4 would include widening of the existing I-5 facility to a full-standard, ten-lane facility with a combination at-grade and elevated viaduct design between SR-91 and I-710, minimizing impacts of the at-grade concept, described in Alternative 3 (Figure 8). The elevated section would be developed primarily where commercial/industrial developments are adjacent to the freeway, and the at-grade section would be developed primarily where there is adjacent residential development (Figure 9).

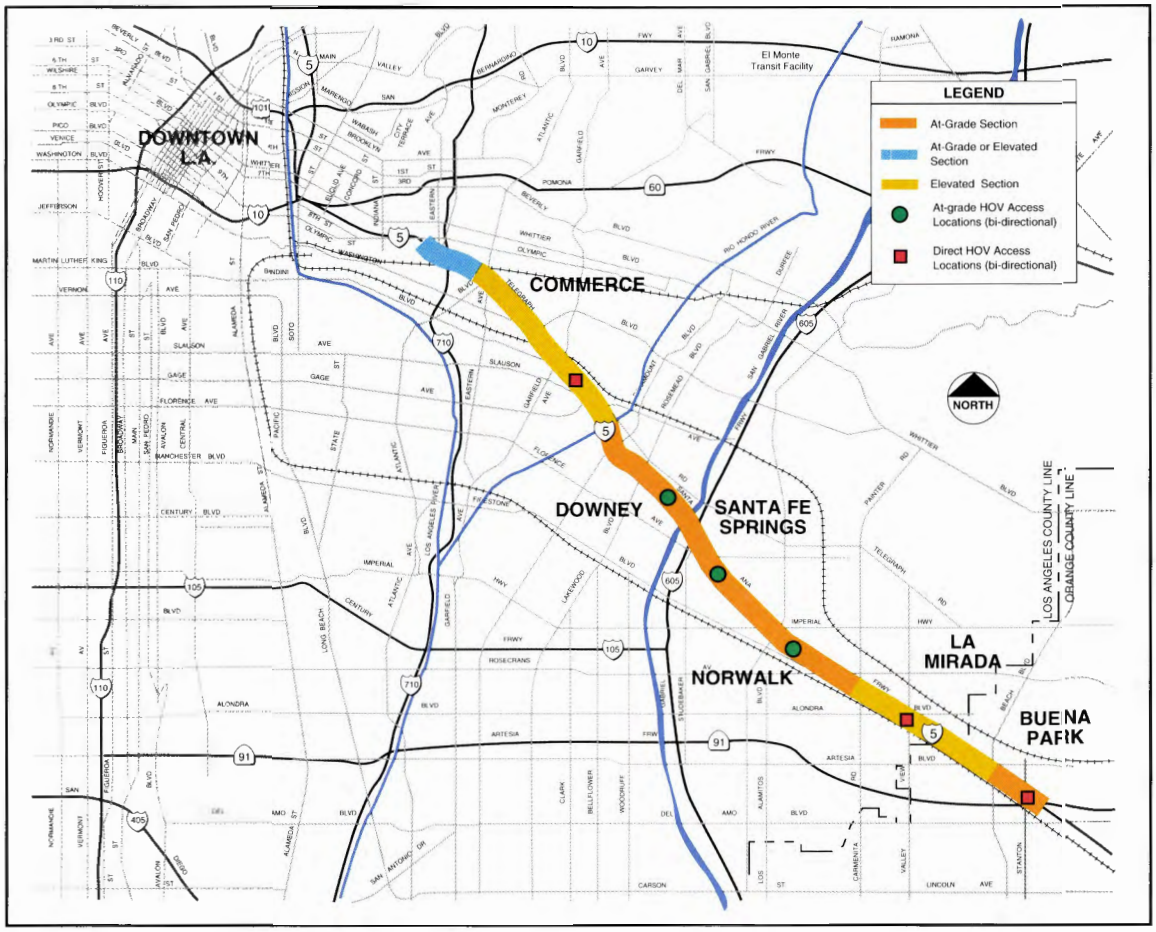
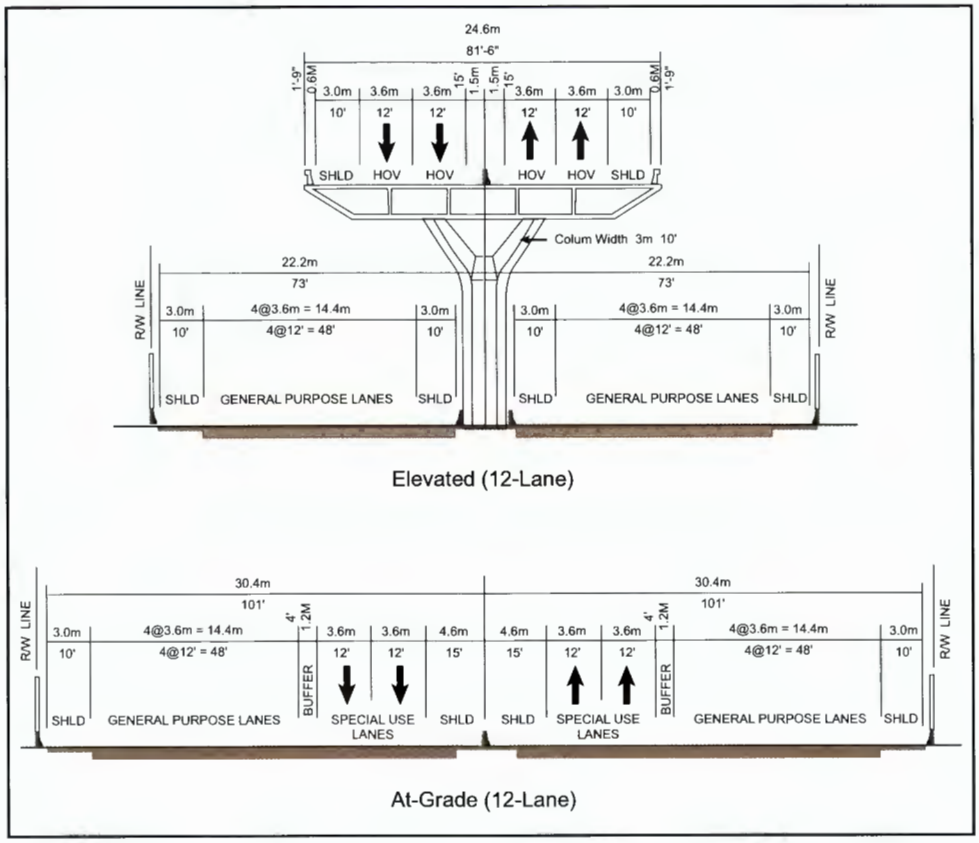


Figure 9: Alternative 4 At-Grade and Elevated Locations



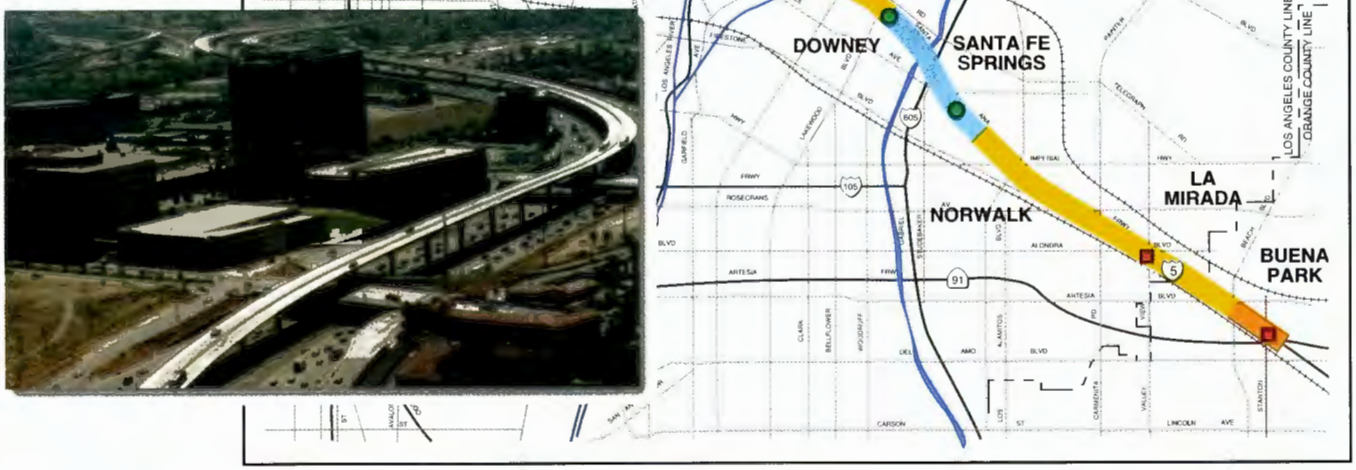
Alternative 5

Elevated (Twelve-Lane) Facility

Alternative 5 would consist of the addition of an elevated viaduct within the freeway median throughout the project length between SR-91 and I-710. Four elevated "special-use" lanes could be used to accommodate HOVs, or SOVs or trucks willing to pay a fee (Figure 10). Within Buena Park, the I-5 section would be primarily at-grade, transitioning to the elevated typical section near Artesia Boulevard.

Figure 10: Alternative 5 At-Grade and Elevated Cross Section

Figure 11: Alternative 5 At-Grade and Elevated Locations



Alternative 6

Combination At-Grade/Elevated (Twelve-Lane) Facility

Alternative 6 would provide for the addition of at-grade or elevated viaduct within the median between SR-91 and I-710. This alternative would be very similar to Alternative 4, except that Alternative 6 would provide four special-use lanes in the median of I-5, while Alternative 4 would provide only two HOV lanes in the I-5 median (Figure 12). Similar to Alternative 5, the four special-use lanes could be used to accommodate HOVs, SOVs, or trucks willing to pay a fee.

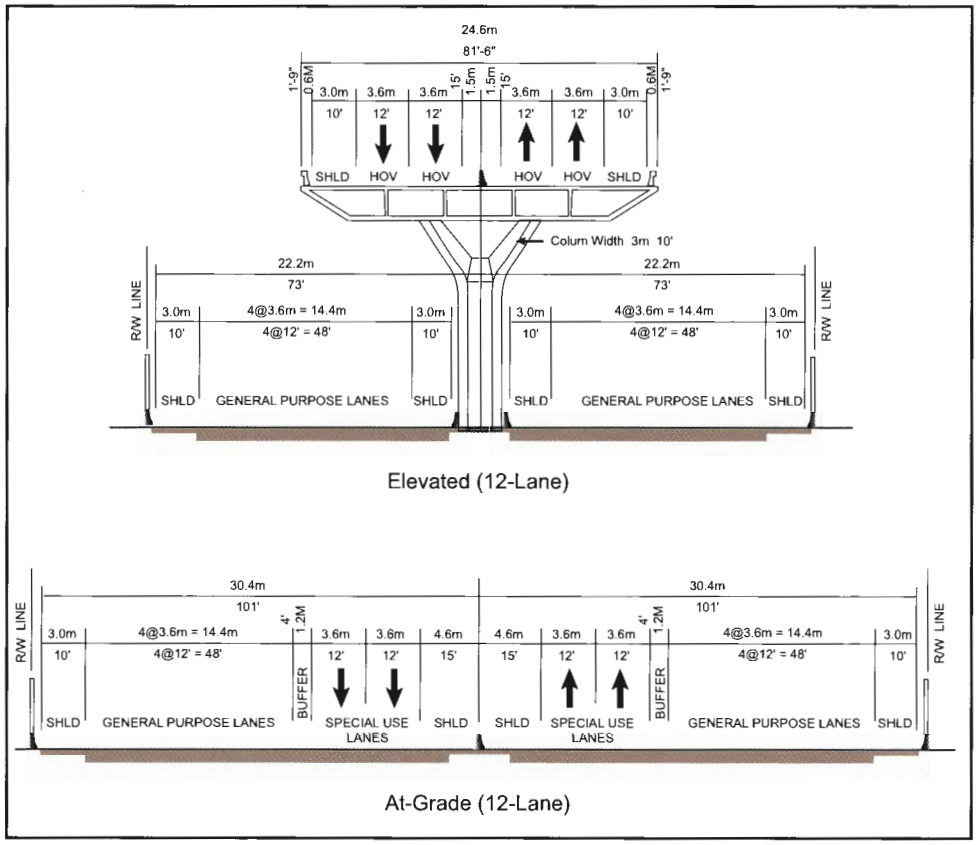


Figure 12: Alternative 6 At-Grade and Elevated Cross Section

The following table provides a comparison of the elements of each of the conceptual alternatives discussed above. With the exception of Alternative 1, No-Build, and Alternative 2, TSM/TDM, the build alternatives include similar improvements for the Bus, Rail, ITS, TDM, and Roadway Elements. The Freeway, Truck, and HOV Elements, however, vary with the alternatives based on the physical design of the freeway (number of lanes, at-grade or elevated, and HOV access).

Elements of the I-5 Corridor MIS Conceptual Alternatives

Element	Alternatives					
	No-Build	TSM/TDM	Alt. 3	Alt. 4	Alt. 5	Alt. 6
						
◆ Assumes completion of I-5 Interim HOV Lane Improvement Project	◆	◆	◆	◆	◆	◆
◆ Widen I-5 to 10 lanes, at-grade, and at full standards - Add 1 HOV lane and 1 general-purpose lane in each direction (SR-91 to I-605) - and 1 HOV lane in each direction (I-605 to I-710) - Use 30-foot-wide median, with some 22-foot-wide sections (both represent full geometric design standards) (see Figure 6)			◆			
◆ Widen I-5 to 10 lanes with combination at-grade and elevated viaduct within the freeway median throughout the project length (SR-91 to I-710) (see Figure 8) - provide 8 at-grade, general-purpose lanes and 2 elevated HOV lanes (see Figure 9)				◆		
◆ Widen I-5 to 12 lanes, at-grade and elevated with viaduct within the freeway median throughout the project length between SR-91 and I-710 (see Figure 10) - provide 8 at-grade, general purpose lanes and 4 elevated, special-use lanes (see Figure 11)					◆	
◆ Widen I-5 to 12 lanes with combination at-grade and elevated viaduct within the freeway median throughout the project length (SR-91 and I-710) - provide 8 at-grade, general-purpose lanes and 4 at-grade/elevated, special-use lanes (see Figure 12)						◆
						
◆ Planned regional bus service in 5-year, short-range plans	◆	◆	◆	◆	◆	◆
◆ Services in the 20-Year Integrated Transportation Plan	◆	◆	◆	◆	◆	◆
◆ Additional reductions in headways on bus services		◆	◆	◆	◆	◆
◆ Reverse commute service to the OCTA express lines		◆	◆	◆	◆	◆
◆ Increased service on LACMTA local routes in the study area by up to 10%		◆	◆	◆	◆	◆
◆ 100 additional buses		◆	◆	◆	◆	◆
◆ Emphasis on coordinating service with longer-haul transit services (bus and rail)		◆	◆	◆	◆	◆
◆ Collection and distribution of Green Line, Blue Line, Red Line, and Metrolink commuters by local services in Norwalk, Santa Fe Springs, La Mirada, Commerce		◆	◆	◆	◆	◆
◆ 25 additional buses during peak period for LACMTA I-5 express/local lines and OCTA express lines			◆	◆	◆	◆
						
◆ Completion of Buena Park Metrolink station	◆	◆	◆	◆	◆	◆
◆ Completion of Red Line Eastern Extension	◆	◆	◆	◆	◆	◆
◆ Operational enhancements to the existing rail services		◆	◆	◆	◆	◆
◆ Increases in commuter rail service		◆	◆	◆	◆	◆
◆ Improved service coordination between Metrorail, Metrolink, and bus routes that connect to other transit services		◆	◆	◆	◆	◆
						
◆ Implementation of ITS regionwide	◆	◆	◆	◆	◆	◆
◆ Additional services and equipment to address specific needs of I-5 users		◆	◆	◆	◆	◆
◆ Might include: Advanced Transportation Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), Advanced Public Transportation Systems (APTS)		◆	◆	◆	◆	◆
						
◆ Regional-level TDM programs in SCAG's 1997 Draft Regional Transportation Plan, including promotion of non-motorized transportation (bicycles, walking, etc.)	◆	◆	◆	◆	◆	◆
◆ Rideshare programs, telecommuting, alternative work weeks, flex-time, employer trip-reduction programs, creation of Transportation Management Association (TMA)		◆	◆	◆	◆	◆
◆ Additional park-and-ride lots identified for development		◆	◆	◆	◆	◆
◆ Additional marketing targeted to TMAs and potential transit users, highlight extension and continuity of the I-5 HOV lanes from I-605 to I-710			◆	◆	◆	◆

Elements of the I-5 Corridor MIS Conceptual Alternatives

Element	No-Build	TSM/TDM	Alt. 3	Alt. 4	Alt. 5	Alt. 6
						
◆ None	◆					
◆ Improvements to enhance arterial street truck operations, primarily through Gateway Cities Trucking Study recommendations.		◆	◆	◆	◆	◆
◆ Improvements include ITS technologies, 8 local interchange improvements (see Roadway Element), arterial and intersection improvements		◆				
◆ Improvement of 17 local interchanges (see Roadway Element), arterials and intersections with high truck volumes (portions of Firestone Blvd., Santa Fe Springs/Norwalk, and Telegraph Rd., City of Commerce)			◆	◆	◆	◆
◆ Truck facility improvements on the I-5 mainline			◆	◆	◆	◆
◆ ITS/CVOs (changeable message signs, closed-circuit television cameras, and a transportation management center)			◆	◆	◆	◆
◆ Would not provide the option for dedicated truck lanes within the cross section of the freeway			◆	◆		
◆ 4 special-use lanes could benefit truck and general-purpose traffic operations by allowing trucks to use these lanes, with revenue generated by charging trucks a fee.					◆	◆
						
◆ Assumes completion of I-5 Interim HOV Lane Improvement Project	◆	◆	◆	◆	◆	◆
◆ Full-standard HOV ingress and egress points along I-5 (see Figure 7)			◆	◆	◆	◆
◆ Full-standard direct HOV interchange could be provided at Stanton Ave. and Alondra Blvd. between SR-91 and I-605			◆			
◆ Full-standard direct HOV interchange could be considered at Greenwood Avenue between I-605 and I-710			◆			
◆ Full-standard direct access within elevated portions would be provided to connect viaduct to arterial street system to facilitate emergency access and enable HOVs to ingress/egress the viaduct, including at the following locations: - Alondra Blvd., Santa Fe Springs - Greenwood Ave., City of Commerce/Montebello - Stanton Ave. (may be considered)				◆		◆
◆ Full-standard access locations that connect the elevated viaduct to the arterial street system would be needed					◆	
						
◆ Assumes completion of I-5 Interim HOV Lane Improvement Project	◆	◆	◆	◆	◆	◆
◆ Planned and/or funded capacity-enhancement projects, including - Atlantic Mix Master Improvements, City of Commerce - Geometric improvements to arterials in Gateway Cities Signal Synchronization, OCTA Smart Street, Intercounty Arterial Highway Connections		◆	◆	◆	◆	◆
◆ Arterial intersection capacity enhancements include widenings to eliminate bottlenecks, channelization and signal-phasing modifications to improve intersection levels of service, signal synchronization improvements (see Figure 5)		◆	◆	◆	◆	◆
◆ Improvement of an arterial route on each side and approximately parallel to I-5 to be used as a preferred arterial alternative to I-5.		◆	◆	◆	◆	◆
◆ Local interchange improvements to enhance traffic operations on freeway ramps and streets. Some may be implemented as part of the Interim HOV Project if funds are available, including Artesia Blvd., Carmenita Rd., and Valley View Ave.						
1. Valley View Ave.: existing – hook, proposed – urban		◆	◆	◆	◆	◆
2. Carmenita Rd.: existing – hook, proposed – urban		◆	◆	◆	◆	◆
3. Rosecrans Ave.: existing – diamond/hook, proposed – diamond		◆	◆	◆	◆	◆
4. Florence Ave.: existing – hook/diamond, proposed – half urban		◆	◆	◆	◆	◆
5. Slauson Ave.: existing – hook, proposed – hook		◆	◆	◆	◆	◆
6. Garfield Ave.: existing – hook, proposed – urban		◆	◆	◆	◆	◆
7. Washington Blvd.: existing – hook, proposed – hook		◆	◆	◆	◆	◆
8. Atlantic Blvd.: existing – hook, proposed – urban		◆	◆	◆	◆	◆
9. Beach Blvd.: existing – diamond/hook; proposed – diamond/hook			◆	◆	◆	◆
10. Artesia Blvd.: existing – diamond; proposed – diamond/loop			◆	◆	◆	◆
11. Firestone Blvd.: existing – northbound off/southbound on; proposed – redirected to Rosecrans Ave.			◆	◆	◆	◆
12. Bloomfield Ave.: existing – isolated northbound on; proposed – redirected to Rosecrans Ave.			◆	◆	◆	◆
13. Norwalk Blvd.: existing – hook/diamond; proposed split diamond			◆	◆	◆	◆
14. Imperial Hwy.: existing – diamond; proposed – split diamond			◆	◆	◆	◆
15. Pioneer Blvd.: existing – half diamond; proposed – isolated northbound on			◆	◆	◆	◆
16. Lakewood Blvd.: existing – loop/diamond; proposed – loop/diamond			◆	◆	◆	◆
17. Paramount Dr.: existing – hook/diamond; proposed – hook/diamond			◆	◆	◆	◆
Improvements to I-5/I-605 and I-5/I-710 freeway-to-freeway interchanges						

MIS Alternatives Evaluation

To compare how well the proposed I-5 MIS alternatives meet the project objectives, a "consumer report" evaluation was used to differentiate between the alternatives for each of the project objectives, measured by data collected and analyzed for this task. The data used for this task are supported by extensive technical information and documentation. In the analysis, the colored circles indicate the degree by which the objectives were attained. This evaluation provided a relative comparison among the alternatives, giving the local decision-making agencies the information needed to compare the level of desired transportation benefits to the costs and impacts of each alternative. The discussion below relates to Figure13.

Attainment of Objectives

	Alt. 1 No-Build	Alt. 2 TSM/TDM	Alt. 3 10-Lane At-Grade	Alt. 4 10-Lane At-Grade/Elev.	Alt. 5 12-Lane At-Grade	Alt. 6 12-Lane At-Grade/Elev.
Mobility-Related Objectives						
Provide continuity of facilities and capacity between Orange County and the Los Angeles CBD along the I-5 freeway facility.						
Maintain flexibility in the freeway corridor for additional capacity improvements.						
Provide an improved level of service during the weekday AM and PM peak periods compared to the no-build condition.						
Improve interchange access/egress points and level of service.						
Improve local surface streets to reduce existing and future congestion.						
Upgrade freeway-to-freeway interchanges with I-5 (I-605 and I-710).						
Improve access to regional transit and HOV facilities.						
Explore TSM improvements for the I-5 and parallel arterials.						
Make use of advanced technology to increase capacity with minimal capital investment.						
Implementation-Related Objectives						
Minimize right-of-way impacts to the fullest extent possible.						
Make all reasonable efforts to design the improvements to full geometric design standards.						
Increase economic opportunities.						
Limit disruptions to communities and business.						
Minimize visual impacts.						
Minimize noise impacts.						
Use latest seismic safety designs related to any elevated options.	NA					
Pool all potential local, regional, state, and federal financial resources for planning and implementation of the proposed improvements. - Cost	NA					
- Toll Revenue Generation Potential	NA					
- Cost Effectiveness	NA					
Comply with federal and state air quality standards.*						
Comply with federal and state water quality standards.*						
Control dust, dirt, and debris during construction.	NA					
Use no local financial contributions for mainline improvements.	NA					

* All alignments with the exception of the No-Build Alternative will have to ultimately comply with air quality and water quality standards. The ratings indicate the ease with which those standards can be accomplished.

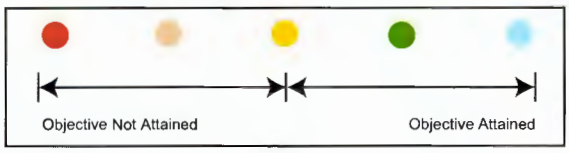


Figure 13: Consumer Report Table

Mobility-Related Objectives

- *Provide continuity of facilities and capacity between Orange County and the Los Angeles CBD along the I-5 freeway facility:* Orange County is implementing improvements on I-5 south of SR-91 that will provide a total of ten lanes in addition to a direct HOV connector from east SR-91 to north I-5. The Orange County section also includes additional width for future capacity enhancements, but a separate environmental document will be required to analyze the expansion of I-5 beyond ten lanes. Neither the No-Build nor the TSM/TDM Alternative would meet this objective because these alternatives would provide only eight lanes on I-5 from SR-91 to I-710. Alternative 3 or 4 would attain this objective because either would provide four general-purpose lanes and one HOV lane in each direction, matching the Orange County section south of SR-91. Alternative 5 or 6 would also attain this objective and provide additional width for future capacity enhancements consistent with the Orange County section.

- *Maintain flexibility in the freeway corridor for additional capacity improvements:* Alternative 5 or 6 would provide the greatest flexibility in the I-5 Corridor for additional capacity improvements because the additional HOV/special-use lanes would provide additional capacity, enhance goods movement, and provide opportunities for technology enhancements such as ITS deployment and other operational management opportunities.
- *Provide an improved level of service during the weekday AM and PM peak periods:* This objective was evaluated based on travel time savings, traffic volumes, and anticipated congestion. The primary differential of this objective is travel time savings because traffic volumes and congestion levels would be similar among the alternatives. Each of the build alternatives would result in improved level of service compared to the No-Build Alternative. Alternatives 2 through 6 would each result in increasing improvements in levels of service, with Alternative 2 having the smallest amount of improvement and Alternative 6 having the largest amount of improvement.
- *Improve interchange access/egress points and level of service:* The No-Build Alternative would not satisfy this objective because no improvements beyond those of the I-5 Interim HOV Lane Improvements Project would be made to the non-standard and constrained freeway ramp interchanges with the local arterial streets. Alternative 2 would partially attain this objective because approximately eight freeway interchanges would be reconfigured and improved to facilitate local access and reduce traffic congestion. Alternatives 3 through 6 would each attain this objective because all of the I-5 interchanges with the local arterials would be reconfigured and improved. The interchange improvements for each of the build alternatives would have the same configurations.
- *Improve local surface streets to reduce existing and future congestion:* The No-Build Alternative would not attain this objective because no local street improvements are included in this alternative beyond those already programmed and funded. Alternative 2 would attain this objective because of the increased amount of bus transit, rail transit, and arterial street improvements proposed. Alternatives 3 through 6 would each attain this objective best because of the additional local street improvements proposed for each of the I-5/arterial street interchanges.
- *Upgrade freeway-to-freeway interchanges with I-5 (I-605 and I-710):* The No-Build and TSM/TDM Alternatives would not attain this objective because no freeway-to-freeway interchange improvements

would be included in these alternatives. Alternatives 3 through 6 would each attain this objective because freeway-to-freeway interchange improvements would be included at both the I-5/I-605 and I-5/I-710 interchanges.

- *Improve access to regional transit and HOV facilities:* Alternative 3 would best attain this objective because it has the highest number of access points between the HOV facility and the general-purpose lanes and local arterials. Alternatives 4 or 6 would also attain this objective, but to a lesser degree. Alternative 5 would partially attain this objective because the elevated special-use lane viaduct would provide a limited number of access locations. Neither the No-Build nor the TSM/TDM Alternative would attain this objective because they would provide little or no access improvement over that assumed to be in place by the I-5 Interim HOV Lane Improvements Project.
- *Explore TSM improvements for the I-5 and parallel arterials:* The TSM/TDM Alternative as well as any of the build alternatives, would attain this objective because the TSM improvements would also be provided.
- *Make use of advanced technology to increase arterial capacity with minimal capital investment:* The TSM/TDM Alternative, as well as any of the build alternatives, would attain this objective because advanced technology could be provided to increase arterial capacity. Alternative 3 or 4 would provide opportunities to make use of advanced technology because of the increased number of local interchanges that would be improved and the extension of the HOV lane throughout the study limits. Alternative 5 or 6 would provide a slightly better opportunity over the other alternatives by making use of advanced technology and by being better able to manage capacity between the general-purpose lanes and the four special-use lanes.

Implementation-Related Objectives

- *Minimize right-of-way impacts to the fullest extent possible:* The No-Build Alternative would best meet this objective, but it would not meet the project purpose and need. The TSM/TDM Alternative would require some acquisition of residential and business properties, but less of these than any of the build alternatives. Alternative 3 would result in the most right-of-way impacts to businesses. Alternative 3 would also result in substantial residential impacts. Alternatives 4 and 5 ranked about the same for both residential and business acquisitions, although Alternative 4 would result in higher residential takes. Alternative 6 would take the most residential properties as a result of the widening required for the twelve-lane cross section. Each of the build alternatives would result in approximately the same impacts to community and neighborhood resources, parks and recreation resources, and historic resources.
- *Make all reasonable efforts to design the freeway improvements to full geometric design standards:* Each of the build alternatives would achieve this objective to the fullest extent possible, while minimizing right-of-way impacts. Utilizing full geometric design for the proposed freeway improvements would maximize public safety and facilitate traffic operations.

Residential and Business Acquisitions*

Alternative	Residential Takes	Business Takes	Total
Alternative 1: No Build	*0*	*0*	0
Alternative 2: TSM/TDM	*80*	*172*	252
Alternative 3: 10-Lane At-grade	*461*	*499*	960
Alternative 4: 10-Lane At-grade/ Elevated	*473*	*305*	778
Alternative 5: 12-Lane Elevated	*333*	*308*	641
Alternative 6: 12-Lane At-grade/ Elevated	*521*	*317*	838

* Includes both full and partial takes.
Note: Actual number of takes may be less than identified, because properties may have been previously taken by the I-5 Interim HOV Lane Improvements Project.

- *Increase economic opportunities:* Neither the No-Build nor the TSM/TDM Alternatives would attain this objective to the degree of any of the build alternatives. Each of the build alternatives would enhance mobility within the I-5 Corridor, improve access to surrounding businesses through interchange improvements, and provide for redevelopment opportunities adjacent to I-5 within the study area. The residential and business acquisitions that would be required for each of the build alternatives would result in a potential loss of tax revenue to the cities and removal of viable economic operations adjacent to the I-5 Corridor.

- *Limit disruptions to communities and businesses:* The No-Build Alternative would best meet this objective, but it would not meet the project purpose and need. Overall, the build alternatives would each have substantially greater disruption impacts compared to the TSM/TDM or No-Build Alternatives. Alternative 3 would result in the most impacts related to hazardous materials/waste sites, which could result in secondary impacts on nearby residences. The TSM/TDM Alternative or Alternative 4, 5, or 6 ranked about the same. Each of the build alternatives have the potential to result in environmental justice impacts.

- *Minimize visual impacts:* The No-Build or TSM/TDM Alternative would attain this objective the best. The No-Build Alternative would not result in any improvements, so there would be no visual impacts. Improvements related to the TSM/TDM Alternative or Alternative 3 would result in similar types of visual impacts because either of these two alternatives would be constructed at-grade, thereby minimizing impacts to residences further from the freeway. The elevated portions of Alternatives 4 or 6 would be visible to more residences and would attain this objective to a lesser extent than Alternative 3. Alternative 5 would not attain this objective because the HOV/special-use lanes would be elevated throughout the I-5 Corridor study area and would be visible to more nearby residences compared to any of the other alternatives.
- *Minimize noise impacts:* The No-Build or TSM/TDM Alternative would attain this objective the best. The No-Build Alternative would not result in any improvements, so there would be no additional noise impacts. For any of the build alternatives, mitigation proposed in the form of soundwalls would reduce noise impacts if state and federal noise criteria were exceeded. While noise would be reduced at most locations with soundwalls, there would be some locations where noise abatement would not fully mitigate the impacts. Compared to any of the build alternatives, the TSM/TDM Alternative would result in the least number of sensitive receptors exposed to residual noise impacts. Alternative 3, 5, or 6 would result in residual noise impacts at a greater number of sensitive receptors, while Alternative 4 would result in the greatest number of sensitive receptors exposed.
- *Use latest seismic safety designs related to any elevated portions:* Improvements proposed in the TSM/TDM Alternative or Alternatives 3 through 6 would be designed with the latest seismic design standards. Consequently, all of the alternatives would attain this objective.

Alternative 5 - Visual Impacts

- Pool all potential local, regional, state, and federal financial resources for planning and implementation of the proposed improvements: This objective was *evaluated by comparing three separate criteria:* project costs, toll revenue generation potential, and cost effectiveness.

  - *Project Costs:* The TSM/TDM Alternative would best attain this objective. Project costs for this alternative would be approximately $225 million. Alternative 3 through 6 would each be difficult to fund, with project costs in excess of one billion dollars per alternative.
  - *Toll Revenue Generation Potential:* Alternative 5 or 6 would best attain this objective because there would be excess capacity in the special-use lanes to allow single-occupancy vehicles access to the facility if they pay a fee. It would also be possible to allow single-occupancy vehicles toll access to the HOV lanes in Alternative 3 or 4, but their toll revenue generation potential would be limited given the amount of HOV demand projected to use the single-lane HOV facility.
  - *Cost-Effectiveness:* Cost-effectiveness is a measure of how much it costs to save travel time. The lower the cost-effectiveness value, the more cost-effective the alternative (i.e., less money is required to produce an hour of time savings). The TSM/TDM Alternative would best attain this objective with a cost-effectiveness value of $6.25 due to the relatively low amount of capital investment. Alternative 6 or 3 would partially attain this objective with cost-effectiveness values of $22.68 and $27.75, respectively. Alternatives 4 or 5 would be the least cost-effective, with values of $30.33 and $32.43, respectively.

- *Comply with federal and state air quality standards:* The No-Build Alternative would not attain this objective to the level of any of the other alternatives. Comparatively, the vehicle miles of travel would increase from the TSM/TDM Alternative through Alternative 6. The change in air quality emissions for each of these alternatives would be similar to the No-Build Alternative, but, the TSM/TDM Alternative would result in the best overall reductions in pollutants. Each of the build alternatives would result in reductions but to a lesser extent.

- *Comply with federal and state water quality standards:* The No-Build Alternative would attain this objective the best because no changes to water crossings would be required. Run-off pollutants would also be less for the No-Build Alternative because the number of vehicles on the roadway would not be as high as with any of the other alternatives. The TSM/TDM Alternative or any of the build alternatives would result in similar attainment of this objective.

- *Control dust, dirt, and debris during construction:* The No-Build Alternative would attain this objective the best because no construction would occur. The TSM/TDM Alternative or any of the build alternatives would result in similar attainment of this objective. Measures would be employed during the construction phase to minimize dust, dirt, and debris associated with construction of any of these alternatives. The amount of dust and debris would differ with the amount of construction required for each alternative (i.e., the larger the construction project the more dust and debris generated). Regardless of the size of the construction project, the same control measures would be employed to the necessary level.

- *Use no local financial contributions for mainline improvements:* The TSM/TDM Alternative or any of the build alternatives would be equally capable of attaining this objective.

Funding Opportunities

An analysis was conducted of potential funding sources for the alternatives under consideration in the I-5 Corridor MIS. This analysis included a review of both traditional sources available through existing federal, state, regional, and local funding programs, as well as non-traditional sources such as tolling and loan-and-credit enhancement programs. The table below lists the various sources considered and their applicability to fund mainline and/or interchange related improvements. A thorough discussion of these sources is found in the *Funding Opportunities – Final Report* (May 1998).

Over the course of the MIS study process, two major changes occurred that would affect funding available potentially at the federal and state levels for improvements in the I-5 Corridor. At the federal level, in June 1998, reauthorization legislation was approved for federal transportation programs and funds that will be available over the 1998-2003 period. This legislation, known as the Transportation Equity Act for the 21st Century (or TEA-21), significantly increases the levels of funding available from federal formula grant programs. In addition, TEA-21 creates new programs, such as the National Corridor Planning and Development Program, which will provide additional funds over and above those allocated by formula. Further, TEA-21 designates particular individual High-Priority Projects for funding, also over and above the funds allocated by formula.

At the state level, Senate Bill 45 was passed in 1997 by the California Legislature. This legislation changes the structure of transportation programs and responsibilities for programming of funds through the State Transportation Improvement Program (STIP). Under SB 45, 75 percent of the funds available for programming in the STIP are to be programmed at the discretion of the Regional Transportation Planning Agencies (RTPAs), subject to approval by the California Transportation Commission. The remaining 25 percent are to be programmed at the discretion of Caltrans.

The potential funding sources were ranked in terms of the relative levels of funding each source would likely contribute and the probability of securing such funds. A three-tiered funding strategy resulted from this ranking process. Figure 14 illustrates this tiering process.

Potential Funding Sources

	Improvements	
	Mainline	Interchanges
Non-Traditional		
Toll Financing		
New Federal Funding Programs under TEA-21		
ITS Funding		
Tax Increment Districts		
Development Fees		
State Infrastructure Bank		
Federal Loan Programs, including Q Fund Program		
Credit Enhancement		
Private-Negotiated Contributions		
Traditional		
Federal		
FHWA Formula Funds		
Environmental Protection Agency (EPA) - Brownfields Program		
Economic Development Administration (EDA)		
Federal Earmark (Authorization and Appropriation)		
State		
Interregional Road Network Funds		
Regional		
MTA Long Range Plan (LRP) Sources (includes state and federal sources)		
MTA Annual Call for Projects (includes federal, state, regional disretionary sources)		
New Regional Source (Gas Tax)		
Local		
EDA Grants		
Congestion Management (Gas Tax Subvention)		
County Sales Tax: Local Return Portion		

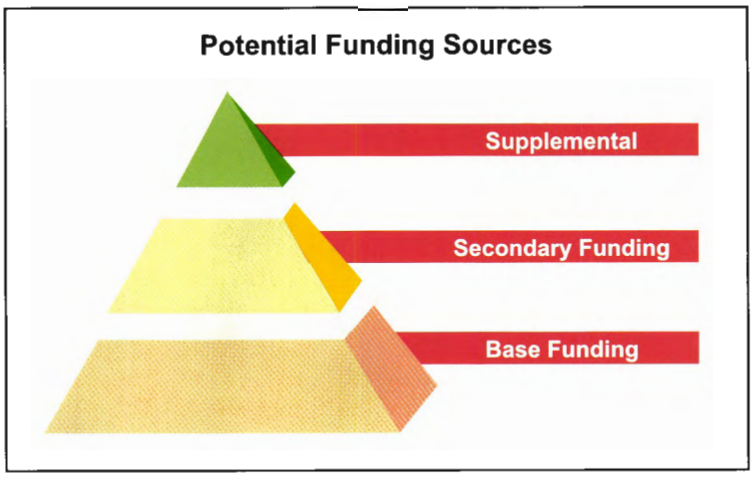


Figure 14

Tier I: Base Funding Sources

The Tier I sources include those likely to serve as the base sources for funding of the I-5 Corridor MIS improvements. It consists of the funds programmed through the Regional Improvement Program (RIP) in the STIP by LACMTA for improvements in Los Angeles County and by OCTA for improvements in Orange County. Under Senate Bill 45, 75 percent of the federal and state sources programmed in the STIP are fully at the discretion of the RTPAs such as LACMTA and OCTA. In light of other projects of high priority to the RTPAs, the timeline for programming these funds for I-5 Corridor MIS-related improvements will be a policy decision to be resolved over the course of the project development process.

Among the various federal and state sources programmed through the RIP in the STIP are:

- Federal National Highway System (NHS) Program funds
- Federal Surface Transportation Program (STP) funds
- Federal Congestion Mitigation and Air Quality (CMAQ) Program funds
- State Highway Account funds, including state gasoline tax revenues and truck weight fees

With the passage of TEA-21, the levels of federal funding that will be available for expenditure in California are expected to increase roughly 40 percent over the levels of funding available in prior years. Combined with the state funds that will be available for programming through the STIP, the increased funding levels could allow for the I-5 Corridor MIS project improvements to be programmed sooner than otherwise. Even with the additional funds, current estimates are that such funds would not be available for programming of the I-5 Corridor MIS project prior to 2020.

Tier II: Secondary Sources

Tier II sources include those that are not of themselves individually or in combination sufficient to finance the construction of the I-5 Corridor MIS improvements. They will likely provide significant revenue for construction in combination with the Tier I Base funding however. As such, these sources could constitute a valuable contribution to the financing of the I-5 Corridor MIS improvements.

Among the sources within this tier are:

- New Federal Funding Programs under TEA-21
- Intelligent Transportation System Program funding
- Q Fund Revolving Loan Program funds for advanced acquisition of right-of-way
- Funds Programmed through LACMTA's Call for Projects, chiefly for interchange and street-related improvements
- State Sources Programmed in the STIP at Caltrans' Discretion through the Interregional Improvement Program (IIP)
- Local Sources, including local gas tax subventions

The most significant of these sources are expected to be the new federal funding programs available under TEA-21. Three programs of particular interest for funding improvements related to the I-5 Corridor MIS are:

- National Corridor Planning and Development Program
- Coordinated Border Infrastructure Program
- High-Priority Projects Program

Of these, the first two programs will provide a total of $700 million in additional federal funding nationwide over the 1999-2003 period. These funds are over and above

the funding allocated to California and the other states by formula through existing federal transportation programs. Funds made available through these programs will be available for expenditure on "High-Priority Corridors" designated as such by federal law. Under the provisions of TEA-21, I-5 is designated as a national High-Priority Corridor between the Canadian and Mexican borders, and could potentially secure secondary funding through these programs. Under the third program, the High-Priority Projects Program, a total of $9.32 billion will be available to fund specific projects earmarked in TEA-21. Among the 1,850 projects earmarked, one is specifically within the I-5 Corridor study area. Through this earmarking, the state could receive up to $15 million for improvement of railroad grade crossings between I-605 and SR-91.

In addition to the potential funding through the new federal programs created under TEA-21, the state's IIP could provide an opportunity to fund a portion of the capital investment required for the I-5 Corridor MIS project. Created through the provisions of SB 45, the IIP is a Caltrans/CTC "discretionary" program whereby 25 percent of the funds programmed in the STIP are at Caltrans/CTC discretion. Of these funds, 60 percent are for state highway projects on interregional roads and for intercity rail (at least 15 percent of the 60 percent). The remaining 40 percent of the funds are for projects important to interregional goods and people movement. In light of the significance of I-5 at the interregional, statewide, and national levels, I-5 Corridor MIS-related improvements would merit consideration for funding through the IIP.

Tier III: Other Sources Considered

The funding opportunities analysis considered additional sources that are likely to be of lower applicability and/or would be less likely to be implemented. If implemented, however, these sources could provide an important incremental contribution to the construction of the I-5 Corridor MIS project.

Among the sources within this tier are:

- Toll Financing
- Tax Increment Finance Districts
- Improvement Districts
- State Infrastructure Bank loans or credit enhancement
- Federal Section 1044 Investment Credits
- Federal Section 1012 Loans
- Federal Credit Programs in TEA-21
- New Regional Sources including Gas Tax

It should be noted that most of the Tier III sources would be applicable to the I-5 Corridor MIS project alternatives that would have added two new HOV or special use lanes in each direction. If these lanes were tolled, their use could provide a revenue stream that could be dedicated to fund the I-5 Corridor MIS improvements directly, and/or be used as a tool to leverage the loan and credit enhancement type programs available at the federal and state levels. It should also be noted that the Locally Preferred Alternative is less likely to provide sufficient new capacity to allow for consideration of tolling and/or credit enhancement.

Locally Preferred Alternative Selection

A Locally Preferred Alternative (LPA) is the design concept and scope for a corridor or subarea major investment. The Environmental Protection Agency's Conformity Regulation pursuant to the Clean Air Act Amendments defines design concept and scope as:

- Design concept – the type of facility identified, such as a freeway.
- Scope – design aspects that will affect the proposed facility's impact on regional air quality emissions usually as they relate to vehicle- or person-carrying capacity and control, such as number of lanes, length of project, etc.

Design concept and scope also refers to the general location of the facility.

Selection Process

The analysis conducted for the *Evaluation Report* provided a systematic comparison of the six conceptual alternatives. It was structured around criteria and indicators designed to reflect goals and objectives as defined in the *Mobility Problem and Purpose and Need Statement* and input from the public, cities, JPA, Caltrans, FHWA, FTA, SCAG, LACMTA, and OCTA.

The results of the alternatives evaluation described in the *Evaluation Report* were presented to the public in a series of three open houses in October 1997 and to JPA city councils. The *Evaluation Report* did not identify the LPA, but rather compared the relative performance of the conceptual alternatives. Through the I-5 Steering Committee, an Ad Hoc Committee was established to develop a recommendation for a preferred investment strategy for the MIS.

Decision-Tree Process

Following evaluation of the conceptual MIS alternatives, several issues relating to the selection of an LPA remained unresolved. To expedite resolution of these issues, the I-5 Steering Committee created an Ad Hoc subcommittee to resolve outstanding issues related to the MIS. The Ad Hoc subcommittee used the information discussed below in an attempt to reach consensus on the LPA. The Ad Hoc subcommittee was composed of representatives from Caltrans, LACMTA, FHWA, JPA, SCAG, FTA, OCTA, and Los Angeles County Department of Public Works (LACDPW).

To appropriately identify the LPA, a decision-tree process was developed to perform a step-by-step systematic evaluation of the alternatives under consideration (Figure 15). The decision tree, combined with input obtained from the I-5 MIS stakeholder meetings and public meetings, provided a means of evaluating increasing levels of transportation infrastructure investment to determine if each alternative being considered addressed the project purpose and need.

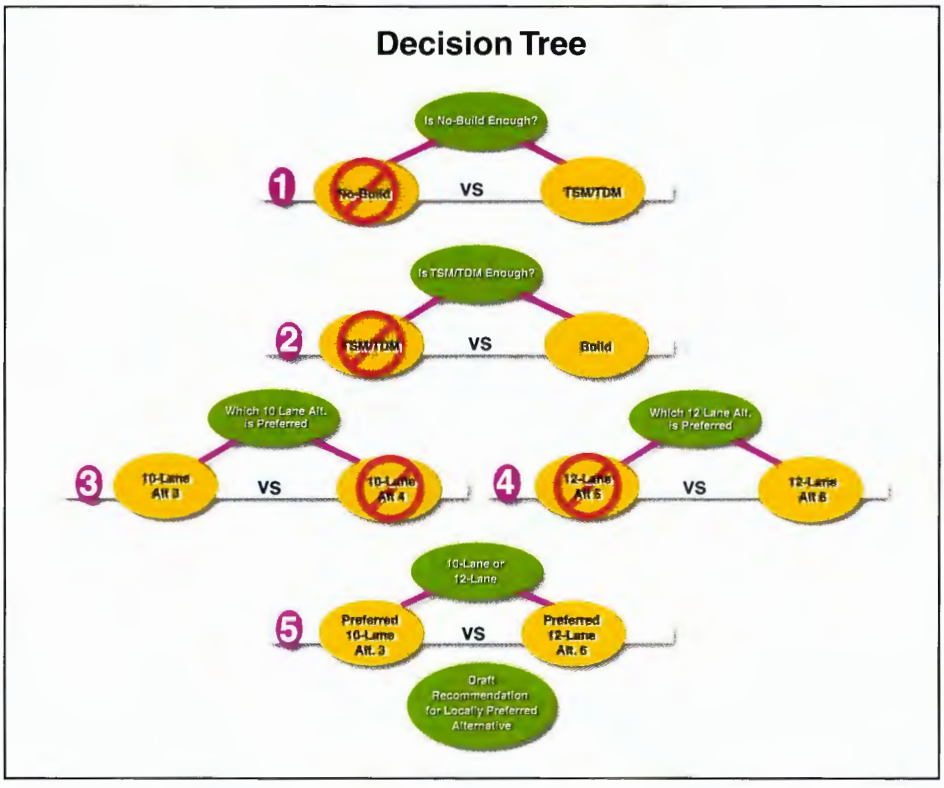


Figure 15: Decision Tree

This decision-tree evaluation was performed by assessing how each alternative addressed the mobility and implementation objectives established for the project. For example, in Decision 1, if the No-Build Alternative satisfied the project objectives, it could be concluded that there would be sufficient transportation improvements contained in that alternative such that it would not be necessary to consider increasing levels of transportation investment. If the TSM/TDM Alternative better addressed the project objectives, however, it would be necessary to move forward in the decision tree. The second decision would determine if the TSM/TDM Alternative provided sufficient transportation improvements to satisfy the project goals and objectives, or whether increasing levels of transportation investment (i.e., one of the build alternatives) were necessary.

Through several working sessions, the Ad Hoc subcommittee was able to utilize the decision-tree process and reach consensus on four of the five decisions. The subcommittee concurred that neither the No-Build Alternative nor the TSM/TDM Alternative met the project purpose and need. The agencies also concurred that Alternative 3 was the preferred ten-lane alternative. Alternative 5 was removed from further consideration because it would result in substantially more visual and noise impacts and provide less accessibility to the special-use lanes, compared to Alternative 6. The Ad Hoc subcommittee could not reach consensus on whether Alternative 3 or Alternative 6 should be selected as the LPA. The evaluation of the mobility- and implementation-related objectives did not provide a clear indication as to which alternative would better meet the purpose and need of the project. The agencies, recognizing that they would not be able to reach a consensus, recommended that a "Blue Ribbon Committee" be formed.

Blue Ribbon Committee

The purpose of the Blue Ribbon Committee was to identify which alternative (or alternatives) should be selected as the I-5 Corridor MIS LPA. The agencies that were represented on the Blue Ribbon Committee included FHWA, FTA, Caltrans, LACMTA, JPA, SCAG, and OCTA. At their request, the FHWA and FTA representatives served as observers only.

The Blue Ribbon Committee initially met in January 1998 with the support of a facilitator. The representatives from Caltrans and FHWA supported the inclusion of both a ten-lane and twelve-lane alternative as the LPA. The FTA representative remained neutral as long as transit was considered. The SCAG, OCTA, LACMTA, and JPA representatives all felt that a twelve-lane alternative was unrealistic and should be eliminated from further consideration. The FHWA representative indicated, however, that FHWA, as the lead agency to carry out the National Environmental Policy Act (NEPA) process, would require that all reasonable alternatives be studied in the development of a future environmental document.

It was ultimately agreed that the LPA recommendation would be a ten-lane alternative (Alternative 3) with design options to be addressed in the future environmental process. The Blue Ribbon Committee suggested a letter agreement be developed for signature by the local agencies to certify their agreements at this meeting. Consensus was reached on the ultimate language included in the Blue Ribbon Committee agreement. All of the involved agencies (Caltrans District 7, SCAG, LACMTA, OCTA, and the JPA) approved and signed the agreement, shown in Figure 16, that identifies Alternative 3 as the I-5 Corridor MIS Locally Preferred Alternative.

BLUE RIBBON COMMITTEE AGREEMENT

The Blue Ribbon Committee met on January 21, 1998. After subsequent discussion reflecting each agency's position, the following agreement was reached:

1. The Major Investment Study (MIS) for the I-5 Corridor will conclude with one locally preferred alternative (LPA) which will be Alternative 3 (10 lanes at grade) as defined in the I-5 MIS Evaluation Report. (See attached description and typical section) It is understood that the design concept and scope of the LPA between SR-91 and I-710 will be a 10 lane at grade facility providing eight general purpose lanes and two high occupancy vehicle lanes with design options, including those identified within the I-5 JPA Alternative as referenced in the LPA Report, to be studied in the environmental process.

2. Appendix C which is the JPA's list of right of way modifications that they support will be included in the final report with a disclaimer added. The disclaimer shall say that these modifications are solely from the JPA and as written, are inconsistent with some of the analysis contained in the document. Therefore it is agreed that they will be re-analyzed in the environmental process before they are considered for inclusion in the final design.

It was further agreed that all of the local agency representatives present would sign this statement to certify that it reflects their understanding of the agreements reached. It should be noted that FTA, represented by Erv Poka and FHWA, represented by Brad Keazer, were also present as observers, as well as facilitator, Jacki Bacharach.

*****

We, the attendees at the Blue Ribbon Committee, agree that this reflects the agreement that was reached:

Bob Sassaman - Caltrans

David Elbaum - OCTA

Bob Cashin - LACMTA

Jim Gosnell - SCAG

Mike Mendez - I-5 JPA

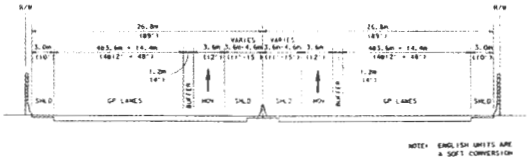
Figure 16:
Blue Ribbon Committee Agreement

ATTACHMENT

Build Alternative 3: At-Grade (Ten-Lane) Facility

Alternative 3 would be a full-standard, at-grade facility between SR 91 and I-710, adding to the existing facility one HOV lane and one general purpose lane in each direction between SR 91 and I-605, and one HOV lane in each direction from I-605 to I-710. The Alternative 3 typical section is depicted below. This alternative would primarily use a 30-foot wide median, although in some locations the median would be reduced to 22 feet to minimize right-of-way acquisitions. Both the 22-foot wide and 30 foot wide medians represent full geometric design standards.

Typical Section



Locally Preferred Alternative

Description of Locally Preferred Alternative

The LPA selected includes widening the existing I-5 facility to a full-standard, ten-lane, at-grade facility between SR-91 and I-710. The LPA also includes increases to bus and rail transit services, and ITS improvements along I-5 and adjacent arterials. In combination, these improvements would reduce the level of congestion resulting from travel demands and would better manage traffic flow along the I-5 Corridor. Specific elements included in the LPA are summarized below.

Locally Preferred Alternative	
	◆ Widening I-5 to ten lanes, at grade, at full standards ◆ Includes adding one HOV lane and one general-purpose lane in each direction between SR-91 and I-605 and one HOV lane in each direction from I-605 to I-710 ◆ Would primarily use a 30-foot-wide median, with 22-foot-wide medians in some areas to minimize right-of-way acquisitions (both medians represent full geometric standards) (Figure 17)
	◆ Planned bus service from various operators in the region (Figure 18) ◆ Modifications currently detailed in five-year, short-range transit plans ◆ Various line-haul and express bus services expected to be in operation by 2015 ◆ Consistent with *20-Year Integrated Transportation Plan* for Los Angeles County ◆ Reductions in bus service headways ◆ Reverse commute service ◆ Increased service on local routes ◆ Additional buses for express and local lines
	◆ Based on *20-Year Integrated Transportation Plan* for Los Angeles County ◆ Existing Blue Line and Green Line facilities ◆ Assumes completion of Buena Park Metrolink station and Red Line Eastern Extension ◆ Operational enhancements to existing rail services ◆ Increases to commuter rail services
	◆ Assumes all ITS initiatives in the No-Build Alternative would be implemented, serving as framework for ITS Element of LPA ◆ Goal of ITS Element is to enhance the ITS improvements assumed to be in place by 2015 ◆ Advanced Transportation Management Systems - Signal synchronization/controller upgrades - Surveillance technologies - Transportation Management Center (TMC) integrated into the I-5 Corridor - Automated response plan ◆ Advanced Traveler Information Systems - Changeable message signs (CMS) - Information kiosks - Personal and vehicle-based devices (HAR) ◆ Commercial Vehicle Operations – commercial vehicle advanced traveler information system (CV-ATIS) ◆ Advanced Public Transportation Systems - Application of technologies in fleet management - Traveler information - Electronic fare payment

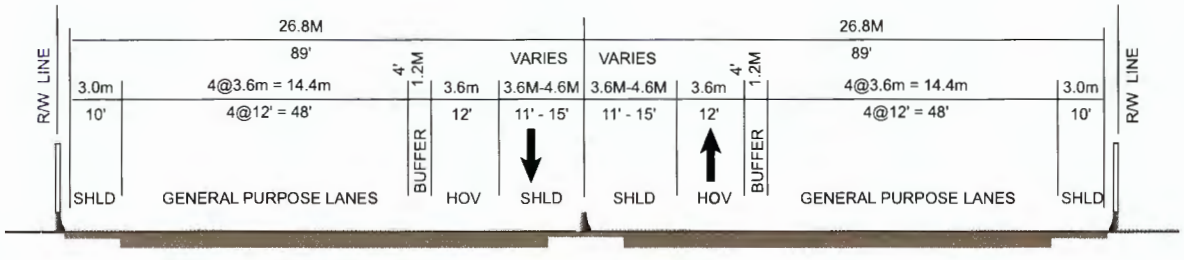
Locally Preferred Alternative

- Traditional TDM techniques assumed, including those identified in SCAG's 1997 *Draft Regional Transportation Plan*
  - Transit and rideshare programs
  - Non-motorized transportation access opportunities
  - Telecommuting
  - Alternative work weeks
  - Flextime
  - Employer trip-reduction programs
- Increases in park-and-ride spaces identified to enhance operation and usage of HOV lanes

- Truck facility improvements on the I-5 mainline
- Improve arterial street truck operations primarily through implementation of certain recommendations of the *Gateway Cities Trucking Study:*
  - ITS/Commercial Vehicle Operations (CVO), such as arterial changeable message signs, closed-circuit television cameras, and a TMC
  - Improvement of 17 local interchanges
  - Improvement of arterials/intersections where truck volumes are concentrated, including portions of Firestone Boulevard, Santa Fe Springs/Norwalk, and Telegraph Road, City of Commerce

- Assumes completion of the I-5 Interim HOV Lane Improvements Project prior to implementation of LPA
- Full-standard HOV ingress/egress points provided along I-5 (Figure 19)
- Full-standard direct HOV interchanges at Stanton Avenue and Alondra Boulevard between SR-91 and I-605
- Full-standard direct HOV interchange considered at Greenwood Avenue between I-605 and I-710

- Arterial intersection capacity enhancements
  - widenings to eliminate bottlenecks
  - channelization and signal-phasing modifications to improve intersection levels of service
  - signal synchronization improvements
- Improve arterials to Smart Street operational standards of the Gateway Cities arterial project (Figure 20)
- Improvement of an arterial route on each side and approximately parallel to I-5 to be used as preferred arterial alternative to I-5
- Local interchange improvements at 17 locations within I-5 Corridor; some may be part of the I-5 Interim HOV Lane Improvements Project if sufficient funds available
  - Potential candidates include Artesia Boulevard, Carmenita Road, Valley View Avenue (pending availability of funds)
- Improvement of I-5/I-605 and I-5/I-710 freeway-to-freeway interchanges



At-Grade (10-Lane)

Figure 17: LPA Typical Section

Figure 18: Enhanced I-5 Corridor Transit Services

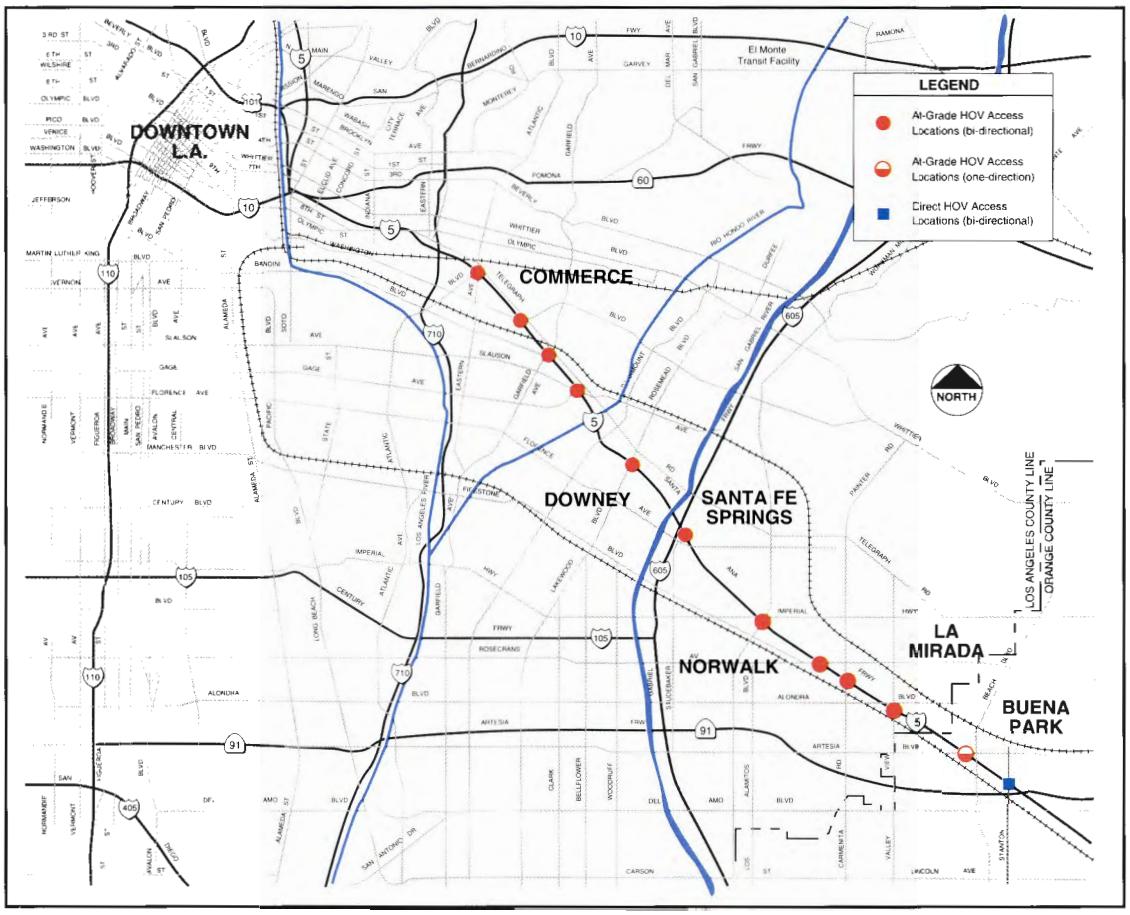


Figure 19: LPA HOV Access Locations

Performance of Locally Preferred Alternative

The results of the evaluation of the LPA are similar to Alternative 3 in the Final *Evaluation Report*. The following LPA discussion relates to the project's objectives. The information presented is preliminary, recognizing that alignment refinements and more detailed evaluation will be conducted during the environmental document phase. Revised assessments of traffic and environmental effects will be described in the future project report and environmental document.

Mobility-Related Objectives

- *Continuity of Facilities and Capacity:* The LPA would provide continuity of freeway capacity between Orange County and Los Angeles County. The HOV lanes would be extended from the terminus of the I-5 Interim HOV Lane Improvements Project at Lakewood Boulevard in Downey to the I-710 interchange in the City of Commerce. With the LPA, there would be improvements over the No-Build Alternative in the utilization of the I-5 general-purpose and HOV lanes and the level of service provided.
- *Flexibility for Capacity Improvements:* Flexibility for capacity improvements is limited, but the LPA would provide additional person-capacity improvements (increasing the vehicle occupancy requirement for access to the HOV lane) with the addition of an HOV lane throughout the project limits. Occupancy requirements for the HOV facility would begin at three or more. The LPA would also provide for ITS deployment and other operational management opportunities.
- *Reduce Congestion:* The I-5 freeway would experience from four to twelve hours of congestion at the screenline locations throughout the project limits compared to 11 to 13 hours of congestion at the screenline locations in the No-Build Alternative. With the LPA, the I-5 general-purpose lanes would experience approximately two less hours of congestion at each of the screenline locations. The LPA would also provide HOV lanes throughout the project limits, but those lanes would experience congestion approximately four hours per day. Overall, travel time savings for the LPA are estimated to be 14,700 person-hours each day (saving$55 million annually in user costs).

Figure 20: LPA Arterial Improvements

- *Interchange Improvements:* With the LPA, 17 local arterial interchanges would be improved throughout the I-5 Corridor. Access at the arterial interchanges would be facilitated by reconfiguring the interchange and upgrading the design to full geometric design standards at all 17 local interchanges within the project limits. Of the 17 interchanges, some may be implemented as part of the Interim HOV Lane Improvements Project if sufficient funds are available. Potential candidates may include the interchange improvements at Artesia Boulevard, Carmenita Road, and Valley View Avenue, pending the availability of funds.
- *Local Surface Street Improvements:* In addition to local street improvements, the LPA would provide local street improvements at the 17 local arterial interchanges discussed above.
- *Freeway-to-Freeway Interchanges:* The LPA would include freeway-to-freeway interchange improvements at the I-5/I-605 and the I-5/I-710 interchanges.
- *Transit and HOV Access:* In addition to the bus and rail service provided in the LPA, increased express bus transit service would be provided to take advantage of the extension of the HOV lanes throughout the project limits. Twenty-five additional buses would be included in the LPA to accommodate the increased service. The LPA would also provide 12 HOV ingress/egress points with I-5. The bus and rail service and HOV ingress/egress points would combine to serve 67,700 daily regional transit trips.
- *TSM Improvements:* The No-Build Alternative would provide minimal operational improvements, while the

LPA would incorporate the same TSM improvements as the TSM/TDM Alternative.

- *Advanced Technology:* The LPA includes advanced technology applications as described under the ITS Element. Improvements to the I-5 mainline throughout the study limits would provide for the implementation of technological opportunities to better manage traffic flow.

Implementation-Related Objectives

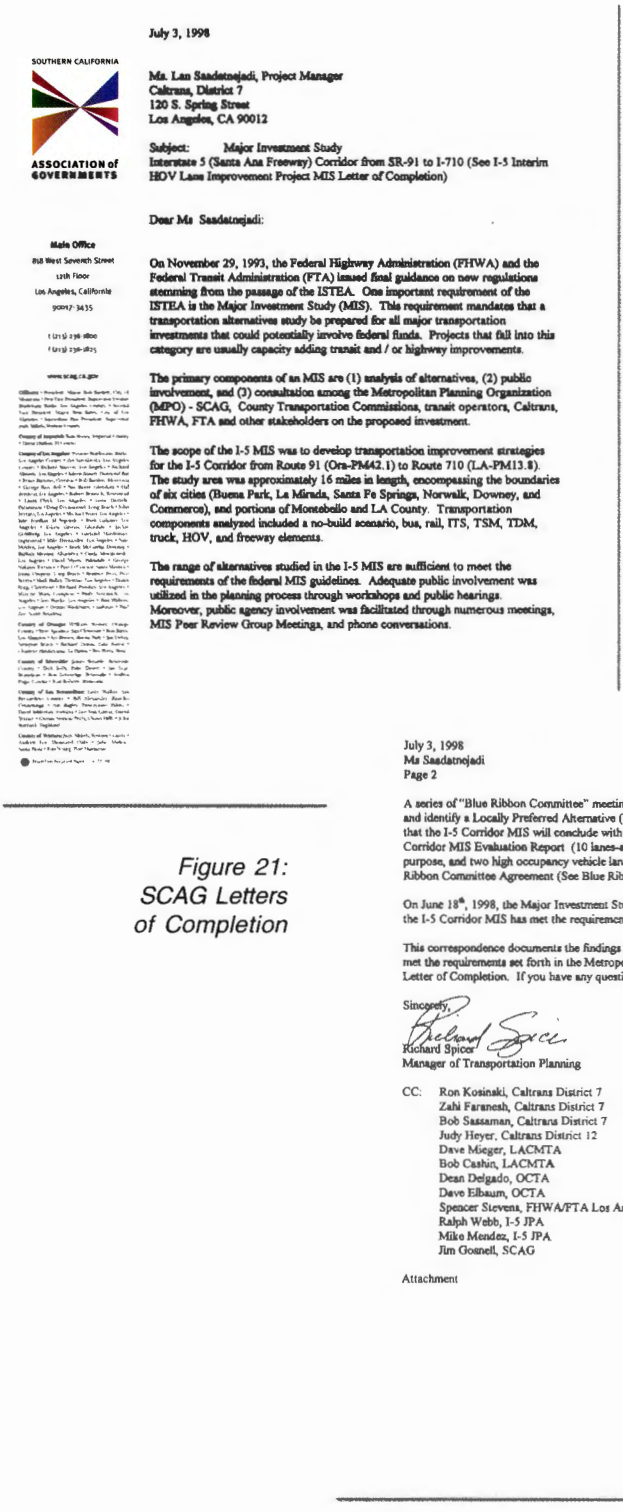
- *Right-of-way Impacts:* The LPA would result in full acquisition of 293 residences, 140 businesses, and 32 potentially eligible or listed National Register historic properties. Partial acquisitions would include 168 residences, 359 businesses, one school, and four parks (0.90 acre). The LPA would result in loss of sales and property tax revenue as a result of acquisitions.
- *Geometric Design Standards:* Interchange configurations and mainline improvements of the LPA would be designed to full geometric standards.
- *Economic Opportunities:* The LPA would improve economic opportunities along I-5 by enhancing mobility, improving access, and providing redevelopment opportunities. By contrast, increased congestion resulting from the No-Build Alternative would inhibit sustained economic growth along I-5.
- *Community/Business Disruptions/Acquisitions:* The LPA would affect 28 hazardous materials/waste sites, and be in close proximity to 219 sites with a high potential for contamination.
- *Visual Impacts:* The number of residences and other sensitive receptors newly exposed to views of the freeway or soundwalls compared to those currently exposed would decrease by 84 compared to the No-Build Alternative.
- *Noise Impacts:* The number of noise-sensitive receptors where the expected noise impacts of the LPA could not be mitigated would be 114.
- *Seismic Safety Design:* The LPA would be designed with the latest seismic design standards. The No-Build Alternative would not provide additional seismic safety designs beyond the current retrofit program being pursued by Caltrans.
- *Air Quality Impacts:* The LPA would result in beneficial air quality impacts compared to the No-Build Alternative, by reducing carbon monoxide by 0.80 ton per day and reactive organic compounds by 0.22 ton per day. It would result in a slight increase in the tons per day of nitrogen oxides.
- *Water Quality:* The LPA would require bridge and/or culvert widenings at four locations and could potentially result in water quality impacts.
- *Construction Control Measures:* The LPA would require dust, dirt, and debris control measures to mitigate construction impacts.
- *Local Financial Contributions:* Local financial contributions for the LPA would not be provided for the freeway improvements. There may be opportunities for local financial contributions for interchange improvements, provided local street improvements are incorporated as part of the overall project.

Affordability

- *Estimated Capital Cost:* The total capital cost for the LPA was estimated to be approximately $1.5 billion (1997 dollars), including $150 million in right-of-way costs for interchange improvements and $20 million in right-of-way costs for mainline improvements.
- *Cost-Effectiveness:* The LPA infrastructure cost required to save one hour of travel delay would be $27.75. Compared to the other build alternatives, the LPA would have the second best cost-effectiveness. Though the LPA is not the most cost-effective alternative, the mobility- and implementation-related benefits better addressed the project purpose and need attainment.

SCAG Letters of Completion

The SCAG MIS Peer Review Group has been continually updated on the process, progress, issues, and resolutions of the I-5 Corridor MIS. On June 18, 1998, the MIS Peer Review Group agreed that the letters of completion (Figure 21) should be issued and should include the Interim HOV project and the I-5 Corridor MIS project. Prior to issuing the letters of completion, the group reviewed the June 1998 *I-5 Corridor MIS Pre-Draft Final Report* and provided comments. Those comments have been incorporated herein.



SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Main Office
818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

July 3, 1998

Ms. Lan Saadatnejadi, Project Manager
Caltrans, District 7
120 S. Spring Street
Los Angeles, CA 90012

Subject: Major Investment Study
Interstate 5 (Santa Ana Freeway) Corridor from SR-91 to I-710 (See I-5 Interim HOV Lane Improvement Project MIS Letter of Completion)

Dear Ms Saadatnejadi:

On November 29, 1993, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued final guidance on new regulations stemming from the passage of the ISTEA. One important requirement of the ISTEA is the Major Investment Study (MIS). This requirement mandates that a transportation alternatives study be prepared for all major transportation investments that could potentially involve federal funds. Projects that fall into this category are usually capacity adding transit and / or highway improvements.

The primary components of an MIS are (1) analysis of alternatives, (2) public involvement, and (3) consultation among the Metropolitan Planning Organization (MPO) - SCAG, County Transportation Commissions, transit operators, Caltrans, FHWA, FTA and other stakeholders on the proposed investment.

The scope of the I-5 MIS was to develop transportation improvement strategies for the I-5 Corridor from Route 91 (Ora-PM42.1) to Route 710 (LA-PM13.8). The study area was approximately 16 miles in length, encompassing the boundaries of six cities (Buena Park, La Mirada, Santa Fe Springs, Norwalk, Downey, and Commerce), and portions of Montebello and LA County. Transportation components analyzed included a no-build scenario, bus, rail, ITS, TSM, TDM, truck, HOV, and freeway elements.

The range of alternatives studied in the I-5 MIS are sufficient to meet the requirements of the federal MIS guidelines. Adequate public involvement was utilized in the planning process through workshops and public hearings. Moreover, public agency involvement was facilitated through numerous meetings, MIS Peer Review Group Meetings, and phone conversations.

July 3, 1998
Ms Saadatnejadi
Page 2

A series of "Blue Ribbon Committee" meetings was held to help bring resolution to the I-5 MIS, and identify a Locally Preferred Alternative (LPA). The Blue Ribbon Committee Agreement is that the I-5 Corridor MIS will conclude with one LPA which will be Alternative 3 of the I-5 Corridor MIS Evaluation Report (10 lanes-at-grade between I-710 and SR-91: eight general purpose, and two high occupancy vehicle lanes, with design options as described in the Blue Ribbon Committee Agreement (See Blue Ribbon Committee Agreement, attached).

On June 18th, 1998, the Major Investment Studies Peer Review Group met and determined that the I-5 Corridor MIS has met the requirements established by SCAG and FTA/FHWA guidelines.

This correspondence documents the findings of the MIS Peer Review group that the I-5 MIS has met the requirements set forth in the Metropolitan Planning Rules, and is therefore granted this Letter of Completion. If you have any questions please contact me at (213) 236-1887.

Sincerely,

Richard Spicer
Manager of Transportation Planning

CC: Ron Kosinski, Caltrans District 7
Zahi Faranesh, Caltrans District 7
Bob Sassaman, Caltrans District 7
Judy Heyer, Caltrans District 12
Dave Mieger, LACMTA
Bob Cashin, LACMTA
Dean Delgado, OCTA
Dave Elbaum, OCTA
Spencer Stevens, FHWA/FTA Los Angeles Metro Office
Ralph Webb, I-5 JPA
Mike Mendez, I-5 JPA
Jim Gosnell, SCAG

Attachment

Figure 21: SCAG Letters of Completion

SOUTHERN CALIFORNIA
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Ms. Lan Saadatnejadi, Project Manager
Caltrans, District 7
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Subject: Major Investment Study
Interstate 5 (Santa Ana Freeway) Corridor-Interim HOV Lane Project (SR-91 to Lakewood Blvd.) (See I-5 Corridor MIS Letter of Completion)

Dear Ms. Saadatnejadi:

On November 29, 1993, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued final guidance on new regulations stemming from the passage of the ISTEA. One important requirement of the ISTEA is the Major Investment Study (MIS). This requirement mandates that a transportation alternatives study be prepared for all major transportation investments that could potentially involve federal funds. Projects that fall into this category are usually capacity adding transit and / or highway improvements.

The primary components of an MIS are (1) analysis of alternatives, (2) public involvement, and (3) consultation among the Metropolitan Planning Organization (MPO) - SCAG, county transportation commissions, transit operators, Caltrans, FHWA, FTA and other stakeholders on the proposed investment.

The scope of the I-5 MIS was to develop transportation improvement strategies for the I-5 Corridor from Route 91 (Ora-PM42.1) to Route 710 (LA-PM13.8). The proposed I-5 Interim HOV Lane Improvement (adding one HOV lane in each direction between SR-91 and Lakewood Blvd.) represents the first phase of the ultimate I-5 Corridor improvements. The SCAG Peer Review Group found that I-5 Interim HOV Lane Improvement is an interim improvement, which is designed to be compatible with the ultimate I-5 Corridor Improvement.

On June 18th, 1998, the Major Investment Studies Peer Review Group met and determined that since the I-5 Corridor MIS I-5 Interim HOV Lane Improvement Project is compatible with the ultimate I-5 Corridor MIS design concepts, the project meets the requirements established by SCAG and FTA/FHWA guidelines.

This correspondence documents the findings of the MIS Peer Review group that the I-5 Interim HOV Lane Project, as part of the I-5 Corridor MIS, has met the requirements set forth in the Metropolitan Planning Rules, and is therefore granted

this Letter of Completion. If you have any questions please contact me at (213) 236-1887.

Sincerely,

Richard Spicer
Manager of Transportation Planning

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Figure 21 cont.: SCAG Letters of Completion

Attached as part of the Letter of Completion for the full project is the Blue Ribbon Committee Agreement and attachment as shown in the section titled "Locally Preferred Alternative Selection."

SCAG Region Transportation Plan

When the potential follow-up work, as described below, is ready to start, it will be submitted to the SCAG Regional Council to be considered as an addition to the Overall Work Program and Regional Transportation Plan (RTP). The Regional Council decision will be based on regional performance indicators, environmental analysis, available funding, and regional policy. When the work is approved by the Regional Council for inclusion in the RTP, it will be eligible for funding in the Regional Transportation Improvement Program (RTIP). See SCAG's *98 Regional Transportation Plan*, Community Link 21, April 16, 1998 for further details on the relationship between the RTP, MISs, environmental documents, project study reports, and preferred alternatives, the RTIP and Overall Work Program (pages I-9 and I-48-49).

Preliminary Engineering and Design Options

The LPA contained in this report identifies the design concept and scope of the transportation improvements which address the transportation needs of the I-5 Corridor. The next step in the project development process involves the preparation of a Project Study Report (PSR), an official Caltrans programming document. As part of the future preliminary engineering effort, several design options will be analyzed to address local agency and general public concerns. The design options to be analyzed include, but are not limited to, the following:

- Elevating the proposed HOV lanes through the city of La Mirada to minimize right-of-way acquisition;
- Terminating the proposed I-5 improvements south of the I-710 interchange to minimize impacts within the City of Commerce and Los Angeles County;
- Constructing a new general-purpose connector for traffic accessing I-710 from I-5 northbound and restricting the existing freeway connector to HOV only traffic; and
- Assessing the use of reduced-standard freeway geometrics to minimize right-of-way impacts, while attaining optimum safety and operation.

In addition, as part of the public involvement process, the JPA identified a list of modifications to be considered in the next phase of the study. The specific modifications are included in the *I-5 Corridor MIS Public Involvement Program – Final Report* (June, 1998).

Environmental Documentation

When funding becomes available, project implementation will require the preparation of an environmental document satisfying both California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements based on the preliminary engineering plans. FHWA will be the lead agency to carry out the NEPA process and, at that time, all reasonable alternatives will be studied.

It is anticipated that the appropriate environmental document will be an Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The environmental document will be prepared in conjunction with a proactive public involvement program to identify and incorporate public and agency concerns and issues related to the project.

Project Implementation Schedule

After environmental clearance is obtained the project would proceed into the preparation of final engineering plans, specifications, and estimates. Due to the time needed to obtain funding and perform the environmental and engineering activities, construction of the I-5 MIS LPA is not anticipated until 2020. The schedule shown in Figure 22 could change if funding is made available earlier.

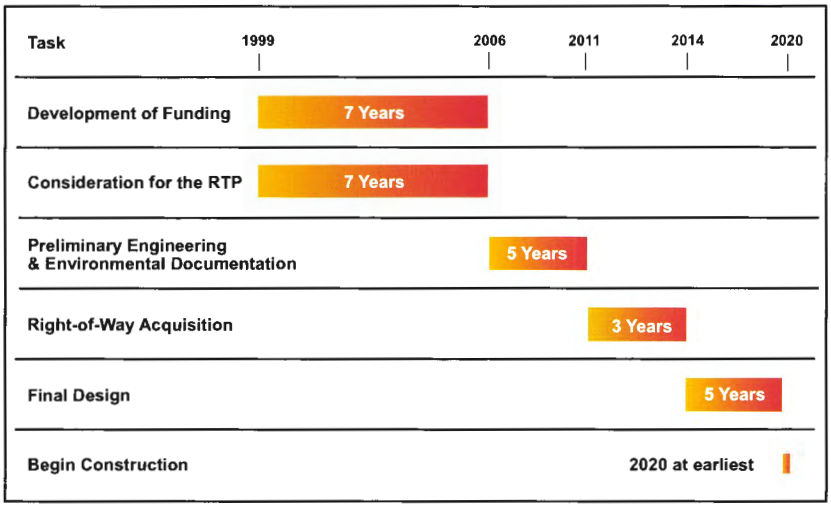

Figure 22: Project Implementation Schedule

Property Owners' Concerns

The I-5 Corridor MIS identifies Alternative 3 (widening to ten lanes at grade) as the recommended LPA. Property owners within the I-5 Corridor MIS area have been advised that this is a long-term recommendation, subject to future refinements.

Currently, the state has no authority to purchase or protect property within the affected area. This also applies to any hardship acquisition, which can not be authorized until a future Draft EIR/EIS is circulated and a formal public hearing is held. The earliest estimate for this environmental action occurring is 2010. Right-of-way protection could commence after that date.

Under current state law, property owners within the corridor who attempt to sell their property are required to disclose what they know about future actions that may affect their property. Caltrans recommends that these owners tell prospective buyers that the State hopes to widen the I-5 Corridor to ten lanes, but that no detailed studies have been authorized and no funding is on the immediate horizon. If, at a future date, Caltrans is successful in getting a funding commitment for the I-5 Corridor MIS improvements, the earliest approximate starting date for construction would be 2020. All of these dates are speculative, and in fact, no further widening beyond the proposed I-5 Interim HOV Lane Improvement Project may ever occur.

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List of Acronyms and Abbreviations

ADT – *Average Daily Traffic*

AHS – *Automated Highway Systems*

APTS – *Advanced Public Transportation System*

ATIS – *Advanced Transportation Information System*

ATMS – *Advanced Traffic Management System*

CARB – *California Air Resources Board*

CBD – *Central Business District*

CCTV – *Closed-circuit Television*

CMP – *Congestion Management Plan*

CMS – *Changeable Message Signs*

COG – *Council Of Governments*

CVO – *Commercial Vehicle Operations*

DEIR/FEIR – *Draft Environmental Impact Report/Final Environmental Impact Report*

DEIS/FEIS – *Draft Environmental Impact Statement/ Final Environmental Impact Statement*

EDA – *Economic Development Administration*

HAR – *Highway Advisory Radio*

HOV – *High Occupancy Vehicle*

IIP – *Interregional Improvement Program*

IMAJINE – *Intermodal and Jurisdictional Network Environment*

ISTEA – *Intermodal Surface Transportation Efficiency Act*

ITI – *Intelligent Transportation Infrastructure*

ITMS – *Intermodal Transportation Management System*

ITS – *Intelligent Transportation Systems*

JPA – *Joint Powers Authority*

LACMTA – *Los Angeles County Metropolitan Transportation Authority*

LACTC – *Los Angeles County Transportation Commission.*

LOS – *Level of Service*

LOSSAN – *Los Angeles-San Diego rail corridor*

OCTA – *Orange County Transportation Authority*

RTP – *Regional Transportation Plan*

RTPA – *Regional Transportation Planning Agencies*

SCAG – *Southern California Association of Governments*

SCRRA – *Southern California Regional Rail Authority*

SOV – *Single Occupant Vehicle*

STIP – *State Transportation Improvement Program*

TCC –*Transportation Communications Committee (SCAG)*

TEA-21 – *Transportation Equity Act for the 21st Century*

TDM – *Transportation Demand Management*

TIP – *Transportation Improvement Plan*

TMA – *Transportation Management Association*

TMC – *Traffic Management Center*

TOS – *Traffic Systems Operations*

TSM – *Transportation Systems Management*