

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**



TRANSPORTATION MANAGEMENT PLAN
I-680 SUNOL GRADE SOUTHBOUND HOV LANE PROJECT

***In Santa Clara and Alameda Counties on I- 680
From Calaveras Boulevard Separation
To South Grimmer Boulevard Undercrossing
EA No. 253781***

**PROJECT DEVELOPMENT - EAST
OFFICE OF DESIGN, CONTRA COSTA
DISTRICT 4
April 30, 2008**

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1.0 PROJECT DESCRIPTION

The existing I-680 between Grimmer Blvd. Undercrossing in Alameda County and Rte 237/Calaveras Blvd. Separation in Santa Clara County is a seven lane divided freeway with three mixed flow lanes in each direction and one interim HOV lane in the southbound direction. It serves as the main corridor for local and interregional commuter, commercial and recreational traffic, it traverses through flat and steep terrain with most grades being moderate to steep.

The purpose of this project is to

- Widen Southbound I-680 freeway pavement to convert HOV lane to HOT lane.
Construct new pavement to match adjacent existing freeway pavement.
- Add Auxiliary Lane
SB 680/Between Rte. 262/Mission Blvd and Scott Creek Road
SB 680/Between Scott Creek Road and Jacklin Road
- Structure Widening at the locations
Calaveras Boulevard Separation/Rte 237 (median work inside bridge widening)
Jacklin Road U.C. (median work inside bridge widening)
South D.W.R. U.C.(outside bridge widening)
North D.W.R. U.C.(outside bridge widening)
East Warren Avenue U.C. (outside bridge widening)
- Rehabilitate Roadway
Crack existing concrete pavement and overlay the PCC pavement with AC pavement between Washington Boulevard and Mission Boulevard/Rte 238 on SB 680.
- Construct Ramp Metering Facilities at the Locations
SB 680/Calaveras Blvd. Separation/Rte 237 Diagonal
SB680/Jacklin Road Diagonal
SB680/Scott Creek Road Diagonal
SB680/Mission Blvd./Rte 262 Collector

Additional features of this project include remove and replace double thrie-beam barrier at selected locations, pavement delineation and signs, erosion control measures, pavement overlay slope/super elevation correction, constructing sound wall for permanent noise mitigation, and adding new traffic operating system on the SB 680 except for three locations in which we are replacing the existing loops with new ones. All the traffic operating system on the NB 680 is to remain in place.

The goals of this project are to reduce the traffic congestion, minimize traffic delays through this segment of I-680, while maximizing safety for the construction workers and motoring public during construction.

The project construction is anticipated to start in December 2008 and it is estimated to take 495 days to complete. Construction cost was estimated at \$54 Million on February 19, 2008. Funding for this project is from IIP& RIP/SHOP (BOND)/TCRP HOT-RIP, ACTIA, Earmark, and VPPP.

Contract 3 (EA 253781) is part of I-680 SB corridor improvements. Begin Construction-12/08, End Construction-12/10.

Contract 1 (EA 253794) KP M5.4/R10.5-Begin Construction-9/08, End Construction-7/10.

Contract 2 (EA 4A5204) KP R10.5/31.1- Begin Construction 11/08, End Construction-10/10.

2.0 TRANSPORTATION MANAGEMENT PLAN SUMMARY

During the construction of the HOV lane, overlay of I-680 SB from 0.4 km South of Calaveras Blvd. Separation to South Grimmer Blvd. Undercrossing, no full freeway closure will take place. Temporary lane/ramp closures will be performed in accordance with lane closure recommendations of the District Highway Operation Office with 15 min max. stop time.

Temporary lane/ramp closure will also occur during low travel periods (late night-early morning) as shown on the contract plan. In addition to the lane closure charts, there are traffic detours, which are included in contract plan. The local lanes and street closures will be performed with Santa Clara and Alameda Counties recommendation. Verbal concurrence from the cities of Fremont and Milpitas regarding our detour plans.

The Transportation Management Plan (TMP) is a specialized program tailored to prevent and mitigate the impacts of a construction project by applying a variety of techniques including *Motorist Information, Incident Management, Construction Strategies, and Public Information Strategies*. The major objectives of the TMP are to maintain efficient and safe movement of vehicles through the construction zone; and to provide intensive public awareness of potential impacts on I-680 and nearest streets.

The TMP proposes a program of public information, motorist information, and an incident management and response. The public information program will consist of media notification, telephone hotline, press release, and traveler information system (Internet). The motorist information program will notify drivers of freeway closures and detours using changeable message signs. The incident management and response program will initiate the COZEEP and a roving tow truck patrol that will remove minor incidents and alert the California Highway Patrol to accidents.

TABLE 1
Roles and Responsibilities / Cost Estimate

	Traffic Management Measure	Responsible Agency	Action Required	Cost	Comments
1	Tow Truck Service Patrol (FSP)	Caltrans	Increase FSP coverage during shoulder and lane closures	(\$200K)	RE to contact FSP Supervisor.
2	COZEEP	CHP & Caltrans	Increase CHP presence during freeway closures	\$350K	(\$200K FSP included with COZEEP in the State Furnished Material)
3	Changeable Message Signs and community information.	Contractor	Install portable CMSs announcing delays, detours, and upcoming construction. Message content and deployment supervised by RE.	\$119K	Included in PS&E
4	Construction Area Sign (Staging & Detours)	Contractor	Establish detour routes, signing, truck routes.	\$35K	Included in PS&E
5	Notification to impact groups (i.e. commuters, pedestrians with disability, others)	Caltrans, Alameda CMA	Provide project and construction information through media.	\$75K	No additional cost
6	Highway Advisory Radio	Caltrans	Provide construction information to public by Highway Advisory Radio.	\$15K	
7	Traveler Information System (optional)	Caltrans	Provide real time traffic information on Caltrans' website.	--	No additional cost
8	Damages Clause	Contract Provision	Contractor pays for damages for late lane closure pick up(\$3500/10min interval).	--	Included in SSP 12-220. No addl. cost to Caltrans.
9	Public Transit Support	Caltrans	RE to notify VTA with any ramp closure.	\$50K	Attachment F.
Total				\$644K	

3.0 TRANSPORTATION MANAGEMENT PLAN STRATEGIES

This section describes possible TMP strategies to mitigate construction-related traffic delays. The TMP strategies are of a general nature and mitigate the overall level of congestion. The strategies are grouped into four broad transportation management strategies:

- Public Information
- Motorist Information Strategies
- Incident Management
- Construction Strategies

Traffic management strategies that require action by the construction contractor are described briefly in the TMP and presented in detail in the project Technical Specifications. Traffic management strategies that are to be implemented by Caltrans appear only in the TMP and are not included in the contract Technical Specifications.

3.1 Motorist Information

Motorist information system provides advance notice regarding potential delays and/or available detours during construction throughout the project. The strategies include two measures: Changeable Message Signs (CMS), and Ground Mounted Signs.

3.1.1 Changeable Message Signs (CMS)

The function of Changeable Message Signs (CMS) is to alert drivers to changing travel conditions in the construction zone such as congestion and detours and improve their opportunity to change routes or adjust travel plans. CMS's can also be used to announce upcoming freeway or ramp closures. Messages should conform to Caltrans guidelines. CMS use should be limited to real-time conditions such as an ongoing freeway closure. For advance notice of ramp closures and other events, it is recommended that a standard sign package be used. The Project Construction Manager (CM) is responsible for monitoring message content and CMS deployment. At least one portable CMS should be utilized for every lane closure or ramp closure. When traffic is detoured, additional CMS's shall be provided.

3.1.2 Ground Mounted Signs

Ground Mounted construction and warning signs provide information about immediate road hazards to motorists. Construction may provide input regarding numbers of signs needed.

3.2 Incident Management

The incident detection and response system include the Freeway Service Patrol (FSP) and Construction Zone Enhanced Enforcement Program (COZEEP).

3.2.1 Freeway Service Patrol (FSP)

Because there would be portions of the construction zone where there would be no shoulders, disabled vehicles would be unable to leave the travel way, increasing congestion and reducing freeway capacity. Once an incident is detected, a quick response is needed to remove disabled vehicles from the roadway. The Freeway Service Patrol (FSP) is a team of tow trucks that patrol Bay Area freeways and performs minor repairs to remove stranded vehicles and motorists from the freeway at no charge to the motorist.

The section of I-680 affected by construction is currently patrolled by an FSP operated by private tow truck operators under the auspices of Caltrans, the California Highway Patrol, and the Metropolitan Transportation Commission's Service Authority for Freeways and Expressways (SAFE). The FSP tow trucks patrol during morning and afternoon commute hours as well as on weekends.

A more aggressive incident management system will be needed for this project to reduce response time and clearance time for stalls and minor incidents. The expanded FSP program to cover weekday midday and weekend getaway traffic would lower delay costs for the travelling public.

Prior to the implementation of supplementary FSP coverage the following steps need to be taken:

Caltrans will supplement its agreement with MTC to include expansion of the FSP. The agreement between MTC and Caltrans will be included in the cooperative agreement for construction and include funding provisions.

The resident engineer shall contact the Caltrans FSP Supervisor (at 510-286-5917) as soon as the FSP funding has been secured. At this time the FSP supervisor can begin arranging tow contracts with the MTC. The total cost for the FSP is estimated as \$200,000 (Included with COZEEP in the State Furnished Material).

3.2.2 Construction Zone Enhanced Enforcement Program (COZEEP)

The program involves continuous presence of the California Highway Patrol (CHP) in the construction zone, provides enforcement of speed restriction, and faster incident response.

It is recommended that a COZEEP program be established for the entire construction period. During lane/ramp closures, CHP officers should be stationed at the beginning of detours. Enhanced enforcement would most likely be used during freeway lane/ramp closures but could be invoked at other times at the discretion of the Project Construction Manager (CM). The CM would prepare a contract change order for each event requiring COZEEP. The COZEEP unit cost, for freeway lane/ramp closures, is \$2000/day/unit. The total COZEEP cost, including all lane closures, at the discretion of the RE, will be approximately \$150,000.

3.3 Construction Strategies

Construction strategies have been considered for this project. The key feature of stage

construction is accomplished by scheduling the work to minimize traffic impacts. This is implemented by scheduling all work requiring lane and/or ramp closures to non-peak hours only, typically in the late night/early morning hours, and weekend. The lane closure charts and damage clauses of this project have been approved by the District Traffic Manager and Deputy District Director of Construction, and will be included in the Special Provision.

Also, most of the construction activity will be done behind temporary railing (type K) so lane closure and traffic control will be kept to a minimum. In addition, there will be construction detour to keep the traffic flow continuous through the construction zone.

Construction of the proposed project is to be undertaken in 2 main stages:

- **Stage 1-Construction**
 - Freeway: Median Work-Widen freeway pavement to convert existing HOV lane to HOT lane. Construct new pavement to match adjacent existing freeway pavement. Remove and replace double thrie beam barrier.
 - Structures: Retrofit could be done either or during this stage or stage 2.

- **Stage 1-Traffic**
 - SB I-680: Set temporary railing at inside edge of traveled way. Maintain existing traffic lane. This stage will not require lane shifting.
 - Access SB/NB I-680 Median Work: All contractor vehicular traffic will be regulated when exiting and entering the work as shown in special provision and on stage construction plan.

- **Stage 2-Construction**
 - Freeway: Outside Widen (auxiliary lane and shoulder reconstruction)
 - Structures: Median Work-Inside bridge widening for Calaveras Boulevard Separation, and Jacklin Road Undercrossing.
 - Outside Bridge Widening –For South and North DWR, and East Warren Avenue Undercrossing.

- **Stage 2-Traffic**
 - SB I-680 : Move temporary railing to outside edge of traveled way. Maintain existing traffic lanes by shifting traffic to the left and using 3.6 m lanes. Some locations will have 3.35 m lanes.
 - Ramps: Using existing striping or re-stripe lanes as needed.

3.4 Public Information

3.4.1 Telephone Hotlines

At a minimum, both hot line recordings should include a brief description of on going or imminent construction activity hours of impact and detours.

Telephone information hotline messages should be prepared announcing the following events:

- Start of construction
- Full or partial interchange closures
- Freeway closures
- Ramp closure

3.4.2 Traveler Information System (Internet)

The message provided thorough telephone hotlines should be posted on the Caltrans website (www.dot.ca.gov), and TravInfo website (www.travinfo.org), in addition to real time traffic information.

3.4.3 Press Release

Project and construction information will be released to the press through Caltrans Public Information Office.

4.0 Contingency Plan

The contractor will be required to submit a traffic control plan at least one week prior to any lane closure or freeway closure. The traffic control plan shall contain a detailed contingency plan to ensure opening of the freeway by the designated time. During construction activities requiring lane closure or freeway closure, the contractor shall provide appropriate personnel to monitor activities and make decisions regarding activation of contingency plans. As soon as it becomes evident during any construction activity that it will not be possible to complete that activity and remove the closure at the designated time, that activity shall be halted and postponed until a later date.

The contingency plan shall identify key operational decision points with a timeline listing the expected completion time of each critical path activity. Clearly defined trigger points shall be identified with each critical path activity to establish when the contingency plan will be activated. The plan will list and describe any and all standby equipment and secondary material suppliers, to be available to complete the operations in the event of equipment failure, unexpected loss of material, or unexpected uselessness of material.

A decision tree with clearly defined lines of communication and authority shall be provided in the contingency plan. The names, telephone numbers and pager numbers of the Contractor's Project Manager, City's Resident Engineer, Caltrans Permit and/or Construction Inspector, CHP Area Commander, and other applicable personnel shall be provided.

Attachments

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