

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

To: Doug Heumann
Project Manager

November 14, 2007
05-0H7300
05-SLO-101
PM 25.9

From: DOKKEN ENGINEERING

LOS OSOS VALLEY ROAD INTERCHANGE ON US ROUTE 101

IN THE CITY OF SAN LUIS OBISPO

Background

The proposed project provides interchange improvements in San Luis Obispo at US 101 and Los Osos Valley Road (LOVR). Improvements include:

- Widen LOVR between the recently constructed Calle Joaquin intersection with LOVR west of US-101 and South Higuera Street east of US-101.
- Construct sidewalks and Class II bike lanes along both sides of LOVR
- Reconstruct or widen all LOVR/US-101 interchange ramps and ramp intersections with LOVR or Calle Joaquin.
- Replacement or widening of the US-101 Overcrossing.
- Lengthen the San Luis Obispo Creek culvert crossing
- Construct additional culvert capacity for the Prefumo Creek under mainline US-101
- Lengthen the Prefumo Creek Crossing under the US-101 Southbound off ramp.

The project is needed to respond to projected increases and current regional and local traffic demand on the state and local roadway systems at the LOVR / US-101 interchange. The study area's lack of alternative routes and presence of non-standard existing roadway geometrics combine with increased traffic to escalate congestion and reduce traffic safety for vehicle, bicycle and pedestrian travel.

The purpose of this project is to improve traffic operations on LOVR and the LOVR/US-101 interchange. Project alternatives provide additional traveled lanes on LOVR over US-101 and through the ramp intersections. Alternatives include improvements to the existing non-standard on- and off-ramps to better serve the needs of local and regional traffic (including bicycle and pedestrian traffic). The project is to be designed such that it will not preclude the planned ultimate widening of US-101 or future interchange improvements. Once a preferred alternative has been chosen, a traffic management plan will be finalized.

Recommendation

Significant traffic delays are anticipated due to the construction staging at the southbound off-ramp. However, the majority of construction can be accomplished using conventional traffic controls. A public information campaign will be launched to alert area residents, commuters and tourists of the impending construction. Night work is anticipated for managing transitions between construction stages and falsework erection.

- **Maintaining US-101**

The most critical transportation management issues will be maintaining US-101 operations. Freeway traffic will be maintained with two lanes of traffic in each direction continuing through the falsework for the overcrossing widening or replacement. Falsework erection and removal will be performed at low traffic volume work periods. Median crossovers will be used temporarily to maintain northbound flow. Southbound flow will be detoured onto the existing southbound off ramp, through the intersection of LOVR, and back onto the freeway via the existing southbound on-ramp. Such activities will be restricted to periods when a single lane in each direction will be sufficient.

- **Reconstruction of Ramps**

Widening and reconstruction of the ramps will require some ramp closures. For the northbound off- and southbound on-ramp closures, traffic will be detoured to the Higuera / US-101 interchange. Short closures will be scheduled for the northbound on- and southbound off-ramp closures, which will require traffic to use ramps at Prado Road and Madonna Road.

- **Stage Construction on LOVR**

The concept for traffic handling during construction entails constructing the new bridge embankment and eastbound Los Osos Valley Road lanes while traffic continues to operate on the existing roadway and with the existing signals.

Stage 1:

- § Construct eastbound LOVR widening
- § Construct US-101 overcrossing for eastbound lanes
- § Widen San Luis Obispo Creek Bridge
- § Extend Prefumo Creek box culvert at US-101 southbound off-ramp

Stage 2:

- § Reconstruct northbound on- and off-ramps
- § Reconstruct southern ½ of northbound ramp intersection to new grade
- § Shift traffic on overcrossing and SLO Creek Bridge to south side
- § Remove falsework over US-101

Stage 3:

- § Reconstruct southbound on- and off-ramps
- § Reconstruct southern ½ of southbound ramp intersection to new grade
- § Shift traffic to south side of southbound ramp intersection
- § Construct improvements to north side of SLO Creek Bridge

Stage 4:

- § Reconstruct northern ½ of southbound ramp intersection
- § Complete final project paving and striping

- **Falsework Opening**

On March 22, 2007, the Project Development Team agreed upon the use of 26 foot wide falsework opening over US-101 for the construction of a Cast-In-Place Concrete Box Girder bridge alternative. This falsework opening allows for two twelve foot lanes and 1 foot shoulders for US-101 during construction. If the box girder structure option is type selected, this falsework opening will be processed as a design exception to HDM Article 309.1(3)(a) and addressed with the project fact sheets.

- **Drainage Improvements**

The existing interchange has experienced flooding in recent years with Prefumo Creek overtopping US-101. Detailed hydraulic analysis reported in the project Location Hydraulic Study, by Wreco indicates that to completely remedy flooding of this interchange would require improvements to increase capacity in San Luis Obispo Creek downstream of the interchange. It is not within the scope of this project

to make these downstream improvements, however, it is the intention of this project to make improvements to the interchange, such that when combined with other future downstream projects, the intersection flooding will be relieved for at least the 25 year event.

The existing San Luis Obispo Creek Bridge has adequate capacity to handle the 100 year storm events without overtopping. This bridge will be widened to accommodate a wider LOVR. The project will also remove unintended creek deposits upstream and downstream of the bridge. These are deposits the creek has dropped since the bridge was built that are reducing the capacity of SLO Creek and exacerbating the flooding of US-101 from Prefumo Creek.

The project does not cause a water surface elevation increase on Prefumo Creek. However, it is desired to increase the capacity of Prefumo Creek under US-101 to pass the 25 year storm without overtopping. It is proposed to accomplish this with additional reinforced concrete pipes installed by the bore and jack method under US-101. This will leave the existing box culvert and fish passage improvements in place. The new culvert(s) would only take flow under high flow conditions.

The existing Prefumo Creek box culvert under US-101 southbound off-ramp will be either widened or removed depending upon the selection of an alternative. This box culvert is approximately one-third larger than the mainline box culvert and will have 25 year storm capacity when the US-101 culvert and SLO Creeks are improved to reduce tailwater effects.

No changes to the hydraulics are proposed for Froom Creek. Froom Creek crosses US-101 downstream from the interchange and receives no increase in flow as a result of the project. For that reason, the Froom Creek culvert does not need to be modified as a result of the project alternatives. The interchange project does not preclude or increase the cost of improvements to the Froom Creek capacity in the future. Like the Prefumo Creek crossings, reduction of tailwater effects in San Luis Obispo Creek is the most efficient and cost effective method to increase the flow capacity within the existing box culvert.

Cost

For estimating purposes use \$1,700 per delay day (260 days) to estimate the costs that are required for the Transportation Management Plan (TMP) items. These items included Traffic Control Systems, Changeable Message Signs, COZEEP, and TMP-Public Information. It is estimated that

approximately 260 delay days will occur that require TMP items out of a potential 260 working days making the estimated cost \$450,000. The project cost estimate breaks the TMP cost into the following two line items; traffic control system (\$250k) and COZEEP (\$200k) . These cost breakdowns apply to Alternative 3 as it requires the most extensive level of traffic control. TMP items for Alternative 6 are estimated to cost \$380,000.

Recommended by:

Matthew Griggs P.E., Dokken Engineering

Approved by:

TMP Manager

Prepared by:

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District 5 Transportation Management Plan Data Sheet

CO/RTE/-PM	05-SLO-101 PM 25.9	EA	05-0H7300
PROJECT LIMIT	In San Luis Obispo County on U-101 at the Los Osos Valley Road Interchange		
PROJECT DESCRIPTION	Widen or reconstruct all four interchange ramps, widen or replace the existing LOVR Overcrossing structure, and upgrade local roads and intersections approaching the Overcrossing.		

A) The project includes the following anticipated closure:
 (Check all applicable type of facility closures expected.)

<input checked="" type="checkbox"/>	Highway or Freeway Lanes
<input checked="" type="checkbox"/>	Highway or Freeway Shoulders
<input type="checkbox"/>	Freeway Connectors
<input checked="" type="checkbox"/>	Freeway Off-ramps
<input checked="" type="checkbox"/>	Freeway On-ramps
<input type="checkbox"/>	Local Streets

B) Is it necessary to provide the existing number of lanes throughout the project?
 Yes No (If Yes, Check all applicable strategies.)

<input type="checkbox"/>	Temporary Roadway Widening
<input type="checkbox"/>	Structure Involvement ? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If "Yes", notify Project Manager.
<input checked="" type="checkbox"/>	Lane Restriping (Temporary narrow lane widths)
<input checked="" type="checkbox"/>	Roadway Realignment (Detour around work area)
<input checked="" type="checkbox"/>	Median and/or Right Shoulder Utilization
<input type="checkbox"/>	Use of HOV lane as a Temporary Mixed Flow Lane
<input checked="" type="checkbox"/>	Staging Alternatives (Explain Below)

C) Calculated Delay

(To be performed if strategies in Item B do not mitigate congestion resulting from Item A and for all projects anticipated to cause delay in excess of 30 minutes).

1. Estimated Maximum Individual Vehicle Delay	NA	Minutes
2. Existing or Acceptable Individual Vehicle Delay	NA	Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(1)-(2)]	NA	Minutes
4. Estimated Delay Cost (Most Applicable)		
<input type="checkbox"/> Extended Weekend Closure	\$0	
<input checked="" type="checkbox"/> Weekly (7 days)	\$0	
5. Estimated Duration of Project Related Delays	NA	# Days

6. Cost of Construction Related Delays [(4) x (5)]	\$0
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D) Preliminary TMP Elements and Cost:

1. Public Information

BEES ITEM NO. 066063

x	Brochures and Mailers	\$2/day (\$520 LS)
	Press Release	
	Paid Advertising	
	Public Information Center/Kiosk	
x	Public Meeting/Speakers Bureau	\$2 /day (\$520 LS)
	Telephone Hotline	
x	Internet	\$0 (Use City website)
	Coordinate with CTA and AAA	
	Interaction with Businesses, Schools and Local Agencies	
	Other	
Comments:		

2. Traveler Information Strategies

	Changeable Message Signs (Fixed)	
	Changeable Message Signs (Portable) BEES ITEM CODE NO. 128650	
x	Ground Mounted Signs	\$ 10/day (\$2480LS)
x	Highway Advisory Radio (existing system)	\$ 0/day
x	Caltrans Highway Information Network (CHIN) (existing)	\$ 0/day
	Bicycles and Pedestrians	
	Other	
Comments:		

3. Incident Management

x	Construction Zone Enhanced Enforcement Program (COZEEP) BEES ITEM CODE NO. 1066061 \$65/hour (not used every day)	\$770 /day (\$200k LS)
	Freeway Service Patrol	
	Traffic Management Team	
	Traffic Surveillance Stations (Loop Detector and CCTV)	
	Other	

4. Construction Strategies

x	Lane Closure Charts	Provided at P&E
	Reversing Traffic Control	
	Total Road Closure	
	Extended Weekend Closure	
	Truck Traffic Restrictions	
x	Reduced Speed Zone	\$ 0/day
	Ramp Closures	
	Incentive and Disincentive	
x	Moveable Barrier	\$ 500/day
x	K-Rail	\$ 135/day
x	Staged Construction	\$ 0/day
x	Traffic Contingency Plans/Emergency Detour Plan	\$ 115/day
x	Median Crossover	\$ 0/day
	DTM Assistance	
	Other	

5. Demand Management

	HOV Lanes/Ramps (New or Convert)	
	Park and Ride Lots	
	Rideshare Incentives	
	Variable Work Hours	
	Telecommute	
	Ramp Metering (New Installation)	
	Ramp Metering (Maintain Existing)	
	Shuttles	
	Other	

6. Alternate Route Strategies

	Add Capacity to Freeway Connector	
	Street Improvement (widening, traffic signal, etc)	
	Traffic Control Officers	
	Parking Restrictions	
	Detour available	
	Other	

7. Other Considerations

	Daily Road User Cost (Attach worksheet if applicable)	
	Maintain Traffic Estimate/day-BEES ITEM CODE NO. 066070	
x	Traffic Control Estimate/day-BEES ITEM CODE NO.120100 Cost of K-Rail not included in estimate.	\$ 198/day
	Functions or facilities (stadiums, hospitals, schools, etc.)and Special Events that require consideration.	

<p>TOTAL ESTIMATED COST OF TMP ELEMENTS per day \$1,731 per Day</p>

Project Notes:

1. Costs were adjusted using and escalation factor of 3% per year.
2. Cost estimate based on 260 working days and 260 delay days.
3. There are noise restrictions/moratoriums for night work.
4. Traffic Control/Maintain Traffic costs are based on historical project costs.
5. Portable CMS specified for this project by this estimate is designated for congestion relief as outlined by DD-60. Portable CMS required for other purposes should be included under other specifications.
6. The TMP is a time sensitive document that is subject to change if material changes take place in the final version of the project phase or if changes are required during construction to respond to excessive levels of congestion.
7. Estimated Lane Closure Chart for planning purposes to be provided at P&E.
8. Request a TMP 3 months prior to the P&E milestone and include:
 - Project Cost Estimate
 - Project Plan Sheets
 - Staging and Traffic Handling Plans
 - Number of Working Days

PREPARED BY: R. Lester (916)858-0642	Dokken Engineering	DATE	11/14/07
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