

Proposed Transportation Control Measure Substitution of Three Transportation Corridor Agency Capital Improvement Projects (10254, ORA050, & ORA051) with Two New Toll Lane SR-241 Loma Segment Widening and SR-73 Catalina View Traffic Improvements

Introduction

The Transportation Corridor Agency (TCA) previously committed to three capital improvement projects along portions of Transportation Corridor Agency facilities within Orange County: the San Joaquin Hills Transportation Corridor (Project ID: 10254); the Eastern Transportation Corridor (Project ID: ORA050); and the Foothill Transportation Corridor-North (Project ID: ORA051). These three projects are included as committed TCM's in SCAG's 2020 RTP/SCS (Connect SoCal) and 2016 South Coast AQMP/ Ozone SIPs. The 2020 RTP/SCS project descriptions of these three committed TCM's are below:

- SAN JOAQUIN HILLS TRANSPORTATION CORRIDOR (SJHTC - SR 73). 15 MI TOLL RD BETWEEN I-5 IN SAN JUAN CAPISTRANO & RTE 73 IN IRVINE, CONSISTENT WITH SCAG/TCA MOU 4/5/01. EXISTING 3 M/F EA DIR. 1 ADDITIONAL M/F EA DIR, PLUS CLIMBING & AUX LANES BY 2022.
- FOOTHILL TRANSPORTATION CORRIDOR-NORTH (FTC-N - SR 241). 12.7 MI TOLL ROAD BETWEEN OSO PKWY AND ETC, CONSISTENT WITH SCAG/TCA MOU 4/05/01. EXISTING 2 M/F IN EA DIR. 2 ADDITIONAL M/F, PLS CLIMBING & AUX LANES BY 2022.
- EASTERN TRANSPORTATION CORRIDOR (ETC- SR 241/261/133) 26.4 MI TOLL ROAD CONNECTS SR 91 to I-5 via SR 261 and SR 133, CONSISTENT WITH SCAG/TCA MOU 4/05/01. EXISTING 2 M/F EA DIR. 2 ADDITIONAL M/F IN EA DIR, PLUS CLIMBING AND AUX LANES BY 2022.

Based upon TCA's 2018 Capital Improvement Program, adopted on June 14, 2018, these committed transportation conformity measures (TCM's) will be delayed beyond the updated completion dates. Two substitute TCM projects (new high occupancy toll (HOT) lanes and pricing alternatives) - SR-241 Loma Segment Widening and Catalina View Traffic Improvements (SR-73) - are now proposed as a replacement TCM to the previously committed projects. The proposed substitute project description, evaluation assumptions, and methodology are discussed below.

Project Description

The replacement projects will improve traffic flow, congestion, and reduce stopping at key bottlenecks along the TCA system. The replacement projects will be completed by Fiscal Year 2022/2023 (December 2022). The locations of the replacement project TCMs and the previously committed project TCMs are graphically illustrated in Attachment A.

The descriptions of the replacement projects follow:

1) SR-241 LOMA SEGMENT WIDENING PROJECT DESCRIPTION

This SR-241 Segment Loma Widening Project includes widening of approximately 6.0 miles of SR-241 to provide one additional lane in each direction of travel. The project will include constructing a new pavement for southbound traffic on the existing graded roadbed along the westerly side of the existing SR-241. The existing graded roadbed, as constructed with original project in 1998, includes a rough graded area for the proposed southbound lanes and an existing single-span Hicks Canyon Haul Road Undercrossing Bridge (No. 55-0895L) structure which will be widened. The overall proposed project limits are from the SR-133 confluence at the southerly end to approximately 0.6 miles north of the existing SR-261 confluence. The length of the proposed SR-241 Loma Widening Project is approximately 6.0 miles.

Cost / Completion: \$77.4 million / December 2022

2) CATALINA VIEW TRAFFIC IMPROVEMENTS (SR-73) PROJECT DESCRIPTION (Draft Description Under Internal Review)

The proposed Catalina View Traffic Widening Project (SR-73) will consist of constructing one additional lane in both the northbound and southbound directions.

In the Northbound direction, for approximately 2.75 miles, a lane will be added as follows:

Beginning 0.4 miles north of State Route 133 undercrossing (PM 16.75) add one northbound lane that will extend through the Catalina View Toll Plaza and to a location approximately 0.5 miles north of the Sand Canyon Avenue Undercrossing Bridge (PM 19.5). At this location, the proposed 4-lane configuration would conform to the existing 4-lane northbound configuration.

In the Southbound direction, for approximately 4.5 miles, lanes will be added as follows:

Beginning at the southbound on ramp from Newport Coast drive (PM 21.53), widening to provide an auxiliary lane (5th SB lane) from the on-ramp to the toll plaza, and from that location, widening of the southbound mainline to provide a fourth southbound lane through the toll plaza area and continuing to a point 500' south of the exit to Laguna Canyon Road (PM 16.75). The

new fourth southbound through lane will terminate with a lane drop taper just south of the exit to transition from a 4-lane to a 3-lane southbound configuration.

Cost / Completion: \$36.9 million / December 2022

Compliance with Substitution Requirements

- Equivalent Emissions Reduction: OCTA will analyze the countywide emissions impacts of the substitute TCM projects relative to those of previously committed TCM projects. The replacement TCM projects are expected to provide equivalent emission reductions.
- Similar Geographic Area: The substitute TCM projects and the previously committed TCM projects are in the Orange County portion of the South Coast Air Basin.
- Full Funding: Current funding is available for the replacement TCM projects.
- Similar Time Frame: The proposed substitute TCM projects will be operational by December 2022, equivalent to the schedule of the previously committed TCM projects.
- Timely Implementation: The proposed substitution is the means by which the obstacles to implementation of previously committed TCM projects is being overcome.
- Legal Authority: TCA has legal authority and personnel to implement and operate the substitute TCM projects.

Air Quality Analysis Methodology

The air quality impacts will be calculated for the previously committed TCM projects and the proposed substitute TCM projects using a multi-step method based on the SCAG emission methodology focused on Orange County. The following process will be used:

Step 1: Obtain daily vehicle miles traveled (VMT) and speed data for freeways and arterials from the Orange County Transportation Analysis Model 5.0 (OCTAM). OCTAM is a conventional four step transportation model used to forecast travel demand with a base year of 2016 (sometimes referred to as the existing year) and a forecast year of 2045. It is consistent with SCAG's regional travel demand model as it incorporates the most recent approved socio-economic data for Orange County and the surrounding region.

Two alternatives for forecast year 2045 will be run using OCTAM as part of this study. The coding of all alternatives will be consistent with previous OCTAM modeling practices. The 2020 RTP/SCS network will be used for all future year modeling.

The previously committed TCM projects generally add an additional general-purpose lane across the TCA system (SR-241, SR-261, and SR-73). The additional lanes are part of the existing toll road management and are assumed to be only available to drivers willing to pay a toll. The project is programmed and budgeted in the 2019 FTIP Consistency Amendment #19-12. This alternative was used for the modeling of previously committed TCM projects, referred to as the “no project” analysis.

The “with project” analysis will include the addition of the substitute TCM projects and the removal of the previously committed TCM projects. The substitute TCM projects are expected to improve traffic operations, reduce vehicular stops, and fix traffic bottlenecks along the TCA system.

Both alternatives will be modeled separately using OCTAM and post-processed using the National Cooperative Highway Research Program (NCHRP) 255 process. This process provides a standard methodology to refine forecasted volumes on links based on a combination of base year traffic counts, base year model estimates, and forecasted model estimates using incremental adjustments. The output of the travel demand model and post-processing will include travel information for both the “with project” and “no project” alternatives. Loaded link information, intrazonal travel speeds, and intrazonal travel volumes will be extracted for all time periods for both alternatives.

Step 2: The Emission Factors (EMFAC2017) model was developed by the California Air Resources Board and is used throughout California to calculate emission rates from motor vehicles, such as passenger cars and heavy-duty trucks, operating on freeways and local roads for typical summer, winter, and annual conditions. EMFAC model outputs include total emissions for all criteria pollutants for all Orange County.

A spreadsheet tool has been created to modify EMFAC input data to reflect the results of OCTAM runs. The tool will be run for the base year and forecast year 2045 using the extracted information from Step 1 as input to update the VMT and vehicle speed data needed by EMFAC. This process will be performed multiple times for each modeled alternative in order to analyze conditions for summer, winter, and averaged annual timeframes.

Note that interpolation of travel activity data between base year 2016 and forecast year 2045 (horizon year) results will be used to estimate the emissions changes for interim year 2022 (completion year) and 2037 (2015 8-hour ozone standard attainment year).

Step 3: Determine the emissions output from Step 2 (see Attachments B-D) to identify the potential emissions-related impacts of the previously committed TCM projects and substitute TCM projects.

Step 4: Update the emissions output to reflect SAFE Vehicle Rule Part 1 for the previously committed TCM projects and substitute TCM projects. OCTA will apply the SCAG developed tool.

Current Status

Currently, OCTA is in the process of coding the networks for both the “no project” and “with project” alternatives and has started running some preliminary model runs. It is expected that these preliminary runs will be finalized in the next few months.

Attachments

A. Transportation Control Measure Replacement of Three Transportation Corridor Agency Capital Improvement Projects with SR-241 Loma Segment Widening and Catalina View Traffic Improvements (SR-73) Map

