

Date: September 18, 2013

To: Cristin Hallissy and Ngoc Bui, Caltrans District 4

From: Lynn McIntyre, URS, on behalf of the Santa Clara Valley Transportation Authority

Subject: ***Supplement to Visual Impact Assessment, State Route 85 Express Lanes Project, Santa Clara County, CA (No. 0400001163/EA 4A7900)***

The purpose of this memorandum is to document a change to the proposed project since the *Visual Impact Assessment, State Route 85 Express Lanes Project, Santa Clara County, CA* (VIA, May 2013) was approved on June 12, 2013. Independent of the review and approval of the VIA, Caltrans issued a Traffic Safety Analysis Recommendations Memorandum (May 2013) and an Addendum (August 2013) for the project that recommended the addition of lighting on SR 85. No additional lighting is proposed on US 101 south of the SR 85 interchange in San Jose (between PM 23.1 and 28.6) or north of the SR 85 interchange in Mountain View (between PM 47.9 and 52.0).

Project lighting was not addressed in the approved VIA. Therefore, the following addresses the existing lighting conditions in the SR 85 corridor, the proposed lighting, and the potential project impacts. The addition of lighting on SR 85 would not result in substantial adverse changes to the visual environment from light trespass, glare, or surface brightness, as described further below.

Existing Conditions

As stated in the VIA, SR 85 in the project corridor is not designated or eligible for designation as a state scenic highway. The City of San Jose General Plan (San Jose 2011) identifies SR 85 as a scenic urban corridor. The City of San Jose General Plan also identifies “the broad sweep of the Santa Clara Valley, the hills and mountains which frame the Valley floor, the baylands and the urban skyline itself, particularly high-rise development” as scenic resources (San Jose 2008).

Lighting is present in approximately 460 locations along the 24.1-mile SR 85 corridor and adjacent streets, VTA light rail stops, and parking lots. Mast-arm luminaires¹ are present along the freeway shoulder, off- and on-ramps, and freeway overcrossings. Other types of lighting structures are visible along the project corridor on local streets, at VTA light rail stops, and in adjacent parking lots.

Project Lighting

As a result of the Caltrans recommendations, the following additional lighting is proposed:

- Mast-arm luminaires would be mounted on the concrete median barrier along each of the approximately 15 express lane access zones on SR 85. The conceptual access zones are shown in VIA Appendix A. At each access zone, approximately seven luminaires will be placed in the median over a distance of 2,000 feet (one luminaire every 250 to 400 feet). The number of luminaires would increase if the access zone is longer than 2,000 feet, to maintain a spacing of one luminaire every 250 to 400 feet.
- Light fixtures would be added to each of the approximately 15 tolling structures in the median of SR 85. The tolling structures are described in VIA Section 2.2.3. The light fixtures would be mounted on a mast arm that would be approximately 10 to 15 feet above the mast arm shown in Exhibit M in VIA Section 2.2.3.

¹ A luminaire is a light fixture that is mounted to a pole, either directly or on a cantilever arm (referred to as a mast arm).

- Light fixtures would be installed on project-related overhead signs described in VIA Section 2.2.3. Conceptual sign locations are shown in VIA Appendix A. A representative light fixture on an overhead sign is shown in Exhibit J in VIA Section 2.2.3.
- Mast-arm luminaires would be mounted on the concrete median barrier on SR 85 between approximately Almaden Expressway and the Samaritan Place pedestrian overcrossing (PM 6.0 to PM 10.0) and between approximately De Anza Boulevard/Saratoga Sunnyvale Road and Fremont Avenue (PM 16.0 to PM 20.0). Luminaires may be added to provide lighting every 250 to 400 feet along the roadway.

The actual spacing and number of lights in the project corridor will be determined during detailed project design in coordination with Caltrans Traffic Safety.

The maximum height of the luminaires and other light fixtures would be 35 to 40 feet. In some locations, the luminaires would be double mast arm to provide illumination to both directions of SR 85. All light fixtures will have light-emitting diodes (LEDs) configured at the minimum necessary number of bulbs, optimal mounting height, mast-arm length, and angle to restrict light to the freeway right-of-way. If needed, the fixtures will be outfitted with shields to prevent light trespass to adjacent properties.

The proposed luminaires would have a slender profile and would be visually compatible with those in the existing freeway corridor. SR 85 in the project limits already contains lighting along and just outside of the freeway, and adjacent commercial and other land uses have nighttime illumination. Project lighting would introduce a moderate level of change to the existing environment.

Impacts

The following discusses project impacts from (1) the lighting structures and (2) project illumination and glare.

Lighting Structures

The luminaires and other light fixtures would be visible in the foreground of motorists' distant views of hills and undeveloped areas adjacent to the freeway. Mast-arm luminaires are already present along the project corridor. Views of the lighting structures would be consistent with existing freeway apparatus in the corridor and short in duration for motorists moving at freeway speeds.

Like the majority of the project signs and tolling structures, the luminaires and other light fixtures would be on SR 85 between I-280 and SR 87, where large sections of roadway are as much as 25 feet lower in elevation than surrounding development and bordered by berms or embankments topped by sound walls. In many such sections (such as between east of Camden Avenue and west of Union Avenue, and west of SR 17), the height differential would fully or partially block views of the luminaires and other light fixtures to observers outside of the freeway corridor. In other depressed sections (such as east of the SR 17 interchange), the upper stories of homes and other development along the freeway could have views of the tops of luminaires and other light fixtures. Partial views of these project features would not be highly conspicuous or intrusive, and would not substantially change the visual quality of the setting.

The luminaires and other light fixtures would also be visible to viewers at various land uses adjacent to SR 85 in locations where the freeway corridor is not shielded by sound walls, trees, tall embankments, or development. Views of the lighting structures would be generally compatible with this highly trafficked corridor and its segments of urbanization. The luminaires would have slender profiles that would not obstruct views and would be minimally visible from a distance.

The lighting structures represent a low to moderate level of change to the existing visual setting and would be visible to motorists and to some viewers outside of the project corridor. Views of the lighting structures would be consistent with the existing freeway setting. No substantial adverse effects on scenic vistas, scenic resources, or visual quality in or around the project corridor would occur.

Project Illumination and Glare

As noted above, the proposed luminaires and other light fixtures would have LEDs configured at the minimum necessary illumination level and optimal angle to restrict light to the freeway right-of-way. If needed, the fixtures would be outfitted with shields to prevent light trespass to surrounding properties. The proposed luminaires would be the same or similar to those used by Caltrans on Dumbarton Bridge and approved for use on other roadways. LED fixtures minimize light trespass, uplighting (i.e., urban sky glow), and reflected light from the roadway compared with high-pressure sodium fixtures (Leotek 2013). The distance of the light spread by an LED fixture similar to the type proposed for this project ranges from 50 to 80 feet in front of the fixture and from 20 to 50 feet behind the fixture, depending on configuration and shielding (ALR 2013). The extent of the light spread by LED fixtures would remain within the freeway right-of-way. In addition, the distance and pattern of the light distribution would be controlled by the number of LED bulbs, mounting height, mast-arm length, shielding, and angle of the fixture as part of project design.

The project lighting would not adversely affect motorists on SR 85. Additional lighting would increase visibility of roadway and traffic conditions, which would benefit motorists by improving safety conditions.

There is residential development adjacent to SR 85 and US 101 along many portions of the project corridor. As stated previously, the majority of SR 85 (approximately 20 miles of the 24.1-mile corridor) has sound walls, and large sections of SR 85 are depressed below surrounding development. Elsewhere, trees provide visual shielding. Nighttime lighting from the luminaires and other fixtures would be confined to the SR 85 right-of-way, with minimal glare or trespass affecting surrounding residences and other properties.

Conclusions

The lighting structures and project illumination would be visible to motorists and to some viewers outside of the project corridor. The proposed lighting would be installed as needed to ensure motorist safety and would not result in inappropriate intensities of light and glare. The luminaires and other light fixtures would have nonreflective surfaces. LED fixtures minimize uplighting and reflected light from the roadway compared with high-pressure sodium fixtures, and would not contribute appreciably to urban sky glow. Substantial adverse changes to the visual environment from light trespass, glare, or surface brightness will not occur. No avoidance, minimization, or mitigation is proposed.

References

ALR 2013. E-mail communication between Tim Haley, Associated Lighting Representatives, Inc., Oakland, CA, and Angela Obeso, URS, June 17, 2013.

Leotek 2013. Green Cobra LED product information. URL:
<http://www.leotek.com/products/documents/ci/Leotek.GC.Brochure.051413.811.pdf>.