

Date: March 1, 2018

To: Kelly Ewing-Toledo, Historic Resources Coordinator, Caltrans District 7, Division of Environmental Planning

References:

1. Finding of Adverse Effect (FOAE) for the State Route 710 North Project, E.A. 187900, 07-LA-710 (SR 710), EFIS 0700000191, December 2017.
2. 'West Pasadena Residents' Association (WPRA) Response to the SR-710 Draft Environmental Impact Report (DEIR) / Draft Environmental Impact Statement (DEIS), August 4, 2015.

Subject: WPRA Comments to the SR-710 North Study FOAE dated December 2017.

The WPRA appreciates the opportunity to review and comment on the FOAE for the SR-710 North Project. The WPRA is an all-volunteer organization dedicated to maintaining and enhancing the character of Southwest Pasadena and the quality of life throughout Pasadena. We represent 7,000 households and have nearly 1,000 dues-paying members. The SR-710 Study Project will have a very large and permanent impact on our community. The purpose of this letter is to formally submit our comments to the FOAE report.

The WPRA appreciates the considerable effort expended to develop the FOAE report. It provides new and useful information on the impact assessment process, and detail on the evaluations of individual historical properties. After reviewing this information, we have identified the following areas where we believe the FOAE report to be deficient:

1. **Similar to the SR-710 Project DEIR/DEIS, the FOAE fails to address the reasonable probability of a Tunnel Boring Machine (TBM) breakdown(s) and the resulting environmental impacts to historic properties should a TBM require repairs from above ground.** In FOAE Volume 1, Section 3.4.1 'Summary of Issues and Concerns Raised by the Public', it is acknowledged that the public "*Requested information on thepotential for and contingency plans related to breakdowns of tunnel boring machines in the tunnels.*" However a response to this request was not provided in the FOAE. In the WPRA response to the SR710 DEIR/DEIS (see Reference 2, Section 3.24, Construction and Tunnel Design), overwhelming evidence was provided that TBM breakdowns are not the exception – they are common. The SR-710 tunnels are particularly susceptible to breakdown risks primarily because the geology of the tunnel route is highly variable and complex. The route also crosses through solid rock, four earthquake faults and is in the proximity of water basins. The DEIR/DEIS also indicated that there were no plans for dewatering. These factors all make tunnel boring much more

challenging, especially when using a single Earth Pressure Balance TBM design as described in the DEIR/DEIS. Historical data shows that for some types of TBM breakdowns, the only reasonable option for repairing an underground machine is to provide access from the surface above. This requires building a construction site and an excavation pit to remove and repair parts of the TBM. This is not an extravagant, low probability scenario, as evidenced by the very recent breakdown of the Seattle Alaskan Way Viaduct TBM. The Seattle TBM breakdown required a surface-access recovery plan, which included a large construction site and repair plan that lasted more than a year. The Seattle project was fortunate in that the failure did not occur in a populated, high-density area. If a surface TBM recovery scenario would be required for the SR-710 Project, it could result in the permanent loss of historic assets, including the permanent loss of portions of entire historic neighborhoods or city blocks. Failure of the DEIR/DEIS and FOAE to address this reasonable risk, especially after numerous requests from the public, is not responsible and ignores global TBM tunneling history.

2. **Similar to the DEIR/DEIS, the FOAE fails to analyze vibrational impacts of potential blasting used for excavating the Freeway Tunnel alternatives.** On page 3.14-9 of the DEIR/DEIS, it is stated that

“No blasting is anticipated; however, if higher strength bedrock is expected in the cut-and-cover sections or in the excavation of the cross passages, controlled blasting methods may be evaluated. This would be determined when more detailed geotechnical information is evaluated for these areas.”

The preliminary evaluation of geotechnical information should have been performed prior to the submittal of the Draft EIR/EIS. Without this information, environmental impacts and mitigations cannot be assessed. This blasting would not be trivial, as it would be for hard rock material that can't be penetrated by the TBM. While the FOAE, Section 3.4 Summary of Issues and Concerns Raised by the Public, identified that the public

“Requested more information on the potential effects of ... blasting.... on historic properties above or in the vicinity of the Build Alternatives during construction,”

impacts related to blasting for freeway tunnel construction was not addressed by the document.

3. **Similar to the DEIR/DEIS, the FOAE fails to consider impacts from unique tunnel construction facilities and equipment that will be operating at the north and south freeway portals for years.** These construction effects are considered temporary, but the 'tunnel construction complexes' located at the portals will be operational for years. In FOAE Section 5.1.1.2, sources of construction vibration and velocity levels are identified as generic equipment (e.g. bulldozers, loading trucks, jack hammers, etc.) used during typical construction. And in Section 5.6, Evaluation of Effects on Historic Properties Located Within the Freeway Tunnel APE, construction impacts considered are related to streets changes, changes to on/off ramps, etc. Besides the TBM, tunnel unique construction facilities and equipment planned for location at the north and south tunnel

portals are not addressed. Based on past large tunnel projects, this equipment may include a slurry filtering/recycling plant, trains to move muck, a dewatering plant, a tunnel lining segment plant, very large crawling cranes, etc. What are their noise and vibration levels for these different plants and equipment in their different operating modes? How do these tunnel construction facilities affect adjacent and nearby historic resources such as Old Pasadena, Ambassador Auditorium, Sequoia School, etc.? See WPRA DEIR/DEIS response (Reference 2), Section 3.14, Noise and Vibration, Finding #7, pg. 207.

4. **Similar to the DEIR/DEIS, the FOAE calculates Freeway Tunnel vibration effects for historic properties, without consideration of local soil conditions; settlement effects were calculated with limited geological data on soil conditions.** FOAE Section 5.1.1.2 describes how vibration thresholds were calculated using the distance of the historic property to the construction activity. Local soil conditions were not included. Because vibration impacts cannot be calculated without some assumption of the medium through which they pass, it is assumed that the FOAE analysts picked some 'average soil' to make calculations, but these assumptions were not described. This is a significant deficiency in the analysis. Both the DEIR/DEIS and FOAE demonstrate that the geology of the tunnel route is highly variable and complex, and selecting an 'average soil' type is inappropriate. Different types of rock and soil transmit vibrations differently, in intensity, frequency, and speed. In fact, a property located at greater distance from a vibration source can actually see more damage than a property that is closer in. This is because soil selectively absorbs higher frequency components, leaving the lower frequency vibrations that often have special resonances with building structures. In addition, FOAE Section 5.1.1.1 describes how settlement effects were calculated. While it is stated that local soil substrate was included in these calculations, the fidelity of the soil data used is in question. The DEIR/DEIS clearly states that key geological and geotechnical investigations were deferred until the project design phases (DEIR/DEIS Volume 1, Section 3.10.4).
5. **The conclusion that 'severe impact' noise increases at the edge of the Pasadena Historic District will result in 'no adverse effect' to the District is not substantiated.** On page 5.6-94, it is stated that for Freeway Tunnel variations,

"The current noise levels in the vicinity of the western edge of the Old Pasadena Historic District is 66 dBA and the Freeway Tunnel variations would potentially increase the noise levels to a maximum of 73 dBA. The increase fall within the 'Severe impact' spectrum. It is likely that the potential noise increase inside the historic district and away from the freeway would be significantly less, although it was not tested as part of this study."

If there is a 'severe impact' at the edge of the District, then there is a 'severe impact' within the District at its border. Moreover, the FOAE admits that there was no assessment of the noise impact of noise dropoff as it moves into the district from the edge. Furthermore, it is argued that noise impacts are irrelevant to the District because a "quiet setting is not a characteristic of a commercial historic district". Central District is

a Specific Plan Area, and *Old Pasadena* is a *National Register District* within that district. Zoning designation in the area is "Central District" (CD-1, AD-1, CD-6, with small pockets of RM-32), encompassing mixed-use zoning that includes a mix of commercial and residential units. By definition, mixed-use most prevalently is comprised of residential upper stories over street-level commercial, retail or office use. This is the case in Old Pasadena, where a significant number of residential units exist. Not all are historic, but residential nevertheless. Moreover, the FOAE fails to recognize the District's historic use as the home for the annual Pasadena Tournament of Roses Parade. This national event has been operating since 1890 and is called 'America's New Year Celebration'. It is a festival showcasing flowers, floats and equestrians with music as a key element of the event. Severe noise levels can severely affect the parade; the parade operates throughout the Old Pasadena Historic District, including at its western border, over and adjacent to the proposed SR-710 tunnel portal. In addition, the western edge of the proposed tunnel portal area is comprised almost entirely of residential zoned properties (RM-12, RM-16, RS-4), with pockets of PS --institutional--use. There are multiple historic properties within these areas, some of which are listed, and some eligible, as historic resources.

6. **In order to justify a 'no adverse effect' for a 'severe impact' noise increase to Ambassador Auditorium, the FOAE assumes that the concert hall will not be used during peak traffic hours; this assumption is not valid and would restrict the historical use of this property.** On pg. 5.6-82, in a discussion of the single-bore tunnel, the FOAE states

"The current noise levels in the vicinity of Ambassador Auditorium Performing Arts Center is 61 dBA and the single-bore variation of the Freeway Tunnel Alternative would increase the noise levels to a maximum of 69 dBA, in all potential variations. The increase in noise would fall in the "Severe Impact" spectrum. Therefore, based on the thresholds established for the Undertaking, the single-bore variation of the Freeway Tunnel Alternative would cause a potential indirect noise effect on the Ambassador Auditorium Performing Arts Center. However, the peak times for the projected noise increase would be during the morning and evening peak traffic period, which is not likely to intersect with performances in the auditorium. Therefore, based on the use of the property, the time of day when the noise increase would be most prominent, and the significance criteria for the historic property (Criterion C), the operation of the single-bore variation would not cause an adverse effect on the architectural significance of the Ambassador Auditorium Performing Arts Center."

On page 5.6-83, similar arguments are made for the dual-bore tunnels. Restricting the hours of use of the auditorium is not within the purview of Caltrans. Moreover is not reasonable to assume that the auditorium would not be used when there is heavy traffic; concerts and rehearsals can occur at all times of the day, including during evening traffic hours. Moreover, Los Angeles freeways often experience heavy traffic at all hours of the day.

7. **Similar to the DEIR/DEIS, the FOAE failed to assess the current compromised condition of many of the historic properties before determining the effect and impact on those properties; consequently adverse effects and impacts are likely underestimated and the number of planned pre-construction surveys are likely inadequate.** Many of the Caltrans owned properties along the tunnel route(s) - a significant number of them historic - are already in disrepair and diminished in structural integrity due to decades of Caltrans neglect and lack of maintenance. Logic dictates that the potential damage to these properties from vibration, subsidence, and nearby construction impacts may be greater than for typical properties that have been consistently maintained. Unfortunately, both the DEIR/DEIS and FOAE, defer the limited building condition surveys until after the project is selected and during the design phase. Without an assessment of the condition of these properties, it is highly likely that the findings of effects and impacts for these properties has been underestimated, and that some adversely affected properties have not been identified. Moreover, the FOAE Section 8, Avoidance, Minimization and Mitigation, states that

"As a baseline for information prior to effects and subsequent avoidance, minimization, or mitigation measures, baseline information is necessary. A pre-construction survey is required for all properties with a finding of adverse effect or conditional no adverse effect."

Consequently, only properties currently identified in the FOAE as having a finding of adverse effect, or conditional no adverse effect, will be considered for avoidance, minimization and mitigation measures if the tunnel projects are selected. Compromised Caltrans properties that have an adverse affect, but have yet to be identified, will not be considered for such measures. Moreover, there does not appear to be any approach for managing effects for other historic structures, whose overly simplified analysis (See item #4 above) did not identify potential adverse effects.

8. **TABLE 5.1.1-2, Classifications of Visible Settlement-Induced Damage from TBM and Cut-and-Cover Excavations and Effects Thresholds, is not realistic in mapping 'damage level' to 'effect thresholds.'** To categorize *"Cracks may require cutting out and patching. Recurrent cracks can be masked by suitable linings. Tuck-pointing and possibly replacement of a small amount of exterior brickwork may be required. Doors and windows sticking. Utility service may be interrupted. Weather tightness often impaired"* as only moderate damage is naive at best. Homes exhibiting this type of damage are potentially not habitable, but according to the table, this is classified only as a 'potential adverse effect'. Not until the severity of damage requires, *"Extensive repair involving removal and replacement of sections of walls, especially over doors and windows required. Windows and door frames distorted, floor slopes noticeably. Walls lean or bulge noticeably, some loss of bearing in beams. Utility service disrupted."* that it is classified as having adverse effects. The damage classifications need to be revised to reflect a more realistic evaluation.
9. **The FOAE 'Summary of Effects on Historic Resources' improperly identifies the Markham Place Historic District as a 'property'; thus, mischaracterizing the**

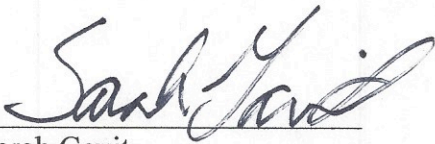
magnitude of the damage to historic properties for the freeway tunnel alternatives.
In Section 9.1, Summary of Effects on Historic Resources (pg. 9-2) of the FOAE it is stated that

"The Freeway Tunnel would cause an adverse effect on the following four properties: Markham Place Historic District, Caroline Walkley House and Small Apartment (counted as one historic property), Driscoll House, and Neighborhood Church/Sequoyah School."

What is not made clear is that the Markham Place National Register District is comprised of over 50 historic properties. Classifying the entire district as one property is incorrect and greatly diminishes the scale and extent of the damage that will occur to contributing properties if the tunnel alternatives are selected.

Thank you again for allowing the WPRA to participate in the FOAE process as a consulting party. We appreciate your consideration of our comments.

Sincerely,



Sarah Gavit
WPRA Board Member, SR 710 Lead
SR-710 Section 106 Consulting Party Member

Distribution:

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