



July 2, 2015

Kelly Ewing-Toledo  
Department of Transportation - District 7  
100 South Main Street, Suite 100  
Los Angeles, CA 90012

**Draft Finding of No Adverse Effect for SR 710 North Study, May 2015**

Dear Ms. Ewing-Toledo,

Thank you for the opportunity to provide comments and feedback regarding the draft Finding of No Adverse Effect for the SR710 North Study project released in May 2015 and received from your office in mid-June. Below you will find our specific comments on this document, followed by comments concerning the SR 710 North Study Supplemental Construction Vibration Impact Assessment for Historic Properties (Wilson Ihrig Assoc., 2015).

**Having carefully reviewed these documents, Pasadena Heritage cannot support the stated conclusion that the proposed project will have no adverse effect on historic resources. As you will see from the specific comments that follow, we found a number of incorrect statements, inconsistencies, missing information, and, most importantly, what we find to be unsubstantiated conclusions in these documents.**

Among the most troubling issues we have identified are:

- The failure to adequately address subsidence risks relative to the actual types of historic building foundations and era(s) of construction.
- The lack of information about excavation-induced ground settlement effects on historic properties in various tables in the documents, though referenced in the narrative.
- The consistently misleading use of depth measurements to tunnel centerlines, meaning that the actual depth at the tunnel crown would be at least 30 feet closer to the surface where existing buildings are located.
- Numerous inconsistencies in the use of historic resource identification and terminology (historic resource, historic property, parcel, group)
- The lack of definition in the Effects Analysis of “slight”, “moderate”, “moderate-severe”, and “severe” effects.
- The failure to study or even reference the ventilation towers for the Freeway Tunnel Alternative proposed along Colorado Boulevard, potential impacts of their construction, and the visual and aesthetic impacts of these towers to the adjacent Historic District.

A number of additional and more detailed comments and questions are included below.

We hope that this feedback is helpful as your office works to revise the draft document. We will be pleased to review the final version.

Sincerely,

Susan N. Mossman  
Executive Director

Jesse Lattig  
Preservation Director

CHAPTER 1 – Introduction, p1-3

This document incorrectly concludes that no detectable risk of adverse effect to any of the historic properties would occur because of constructing the freeway tunnel. This conclusion conflicts with:

- Section 5.3 LRT Alternative regarding the primary effects to historic properties related to construction
- Settlement TM document (JA 2015) prepared for the SR 710 North Study DEIR
- This document separates vibration impacts from excavation-induced settlement impacts and fails to evaluate them equally.

This document fails to adequately address subsidence risks and the associated levels of vulnerability based on the types of building foundations and era(s) of construction. Page 1-3 of Chapter 1 states that:

“The remaining 13 historic properties are analyzed in Section 5.7 for effects due to excavation depths of 100 ft or less and a corresponding risk of excavation-induced ground settlement or for effects from construction and operational effects at the surface.”

However, the last sub-section in Chapter 5 is 5.5.4.13. **The analysis of the 13 properties that are located within 100ft or less of the tunnel centerlines is not included in this document.**

CHAPTER 4 - Descriptions of Historic Properties and Resources

640 South St. John Ave.

The property is missing a Period of Significance.

233 Columbia Street

This property has number of features early for its period of significance and its eligibility for individual listing should to be re-evaluated.

Figure 4-78

The image should be recent to reflect the same period of the other figures in the report, which are consistently within the last year to two years.

26 S. Pasadena Ave, Figure 4-124

The resource description is inaccurate and does not reflect the National Register nomination.

169 West Colorado Blvd.

The property's contributor status is incorrect.

148 West Colorado Blvd.

Address should be 148-154 West Colorado. Additional resource information from the National Register nomination should be included.

161 West Colorado Blvd.

The information given does not reflect the National Register District listing.

281 **NORTH** Raymond

The address incorrectly gives the direction as South Raymond, when it should be North Raymond. The corresponding Figure caption is also incorrect. Additionally, neither the address nor the resource information corresponds with the updated National Register District listing.

## CHAPTER 5 – Application of the Criteria of Adverse Effect

### Section 5.2 - LRT Alternative

This section fails to state the number of historic properties located within the LRT APE.

The presence of groundwater in and above the range of excavation is referenced as a potential risk; specifically the risk of ground settlement that would destabilize nearby building foundations. This risk is not identified in Jacobs Associates/CH2M HILL 2015: Settlement Technical Memo.

#### Section 5.2.1 Case Studies

References the Madrid M30 Project, but unlike the other three case studies, gives no information about the kinds of settlement or vibration induced impacts from the project, nor the type of soil in which the tunnel was bored, which weakens its relevance as a precedent.

The Dublin Tunnel project is referenced as precedent, but no details are provided regarding how that project compares to the one proposed for the SR-710.

#### Section 5.2, Table 5.3

The Effects column only references vibration effects, while excavation-induced ground settlement effects are only listed under the Notes column. This format is misleading about the range of potential impacts to the affected historic properties. **Excavation-induced ground settlement effects should be listed with other effects under the Effects column.**

#### Section 5.3 Freeway Tunnel Alternative

This section states that the tunnel alignments would be located beneath 48 historic properties at a depth ranging from 78-230ft. The document also states that of these 48 historic properties, 37 are located above the tunnel alignments at depths ranging from 110-230ft. The document fails to reference the difference between these figures, which are 11 historic properties, located above the tunnel centerlines at depths from 78-110 ft. The section further fails to provide any analysis of effects for these remaining 11 historic properties **and its conclusion is therefore incomplete and misleading.**

The document identifies tunnel depths as measured to the tunnel *centerline*, which is misleading. Given the Freeway Tunnel diameter of 60ft, a 78ft centerline depth is equivalent to a 48ft depth to the tunnel crown, which is very shallow for tunnel excavation of any diameter, particularly in alluvium soil, where excavation-induced settlement effects are of serious concern to historic structures.

We also note that the number of properties given that would range from 110-230 ft above the tunnel centerlines contradicts the two different figures stated in the document Introduction.

Furthermore, none of the above figures reflects those given for the Freeway Tunnel Alternative in Jacobs Associates/CH2M HILL 2015 Technical Memorandum on Potential Settlement Effects on Historic Properties.

Section 5.3, Table 5.4

The Effects column only references vibration effects, while excavation-induced ground settlement effects are listed under the Notes column. This format is misleading about the range of potential impacts to the affected historic properties. **Excavation-induced ground settlement effects should be included with other effects listed under the Effects column.**

Section 5.5.3.1 Effects Analysis - LRT Alternative Effects

Vibration effects for the Raymond Florist Historic District at the Fillmore LRT Station excavation site states that nearest point of excavation would be 10 ft along the “entire western boundary of this historic property.” This conflicts with the historic property boundaries illustrated in Figure 5-32 and with various distances in Section 5.5.3.6. Clarification of the various tunnel, cut-and-cover, and station excavation distances and depths for the Raymond Florist Historic District is necessary.

Section 5.5.3.6 Effects Analysis - Raymond Florist District

See above; contradicting distances of excavation from the District’s boundaries are given throughout this section and contradict those given in Section 6.3.5 and its multiple sub-sections. Additionally, the location from which these distances are measured needs to be established, clearly stated, and consistently applied throughout the entire document.

Furthermore, no description is given for how the area is to excavated from where the TBM excavation stops to where the cut-and-cover terminal rail tracks and crossover excavation begins.

Figure 5-32 is inadequate and inconsistent with the above referenced Sections.

Section 5.5.4.1 Effects Analysis - Freeway Tunnel Alternative Effects

Vibration Effects

The document states that excavation expected to use the same technology described in Section 5.5.3.1 [LRT Alternative Effects, p 5-198], but fails to state the substantial difference in tunnel dimensions between the LRT and Freeway Tunnel Alternatives, which is misleading.

The tunnel depths and corresponding locations given in the Vibration Effects section contradict the figures stated in previous sections, as well as the depths given by Wilison, Ihrig & Associates, 2015 for Markham Place Historic District. Additionally, the document gives depths to tunnel *centerlines*, which is misleading; given the Freeway Tunnel diameter of 60ft, a 75ft centerline depth is equivalent to a 45ft depth to the tunnel crown, which is very shallow for tunnel excavation of any diameter, particularly in alluvium soil.

Ground Movement

This section does not adequately cite the 2015 report upon which conclusions regarding 18 historic properties were made; this should be clarified.

This section goes on to reference the predicted levels of effect but fails to identify which properties the damage classifications apply to.

This section states that the supplemental report concluded: “of the 18 historic properties analyzed, 1 was predicted to sustain ‘very slight’” effects, which contradicts the figures given

in Section 5.5.4.2, pg 5-275 and with the 8 contributing properties in the Pasadena Avenue Historic District identified in the same supplemental report that may sustain effects from excavation-induced ground settlement.

The gross inconsistencies resulting from the failure to adequately and definitively establish the terms historic resource, historic property, parcel, group, and building is negligent and misleading.

Section 5.5.4.2 Effects Analysis - Pasadena Avenue Historic District

This under Application of the Criteria of Adverse Effect references a supplemental report that identified 8 properties in the district that were predicted to sustain “very slight” effects. This figure contradicts the figure given in Section 5.5.4.1, p5-273 which states under Ground Movement that only 1 historic property was predicted to sustain “very slight” effects. This inconsistency is misleading and requires clarification.

The depths of tunnel centerlines stated under the Dual-Bore Design Variation conflict with the depths given two paragraphs later, under Application of the Criteria of Adverse Effect. The description of the Dual-Bore Design Variation should be as thorough as that given in Section 5.5.4.3, p5-282.

Section 5.5.4.3 Effects Analysis - Markham Place Historic District

Under Proposed Improvements, the Dual-Bore Design Variation is described as two 60ft diameter tunnels and the excavated tunnel centerlines are stated as being 121ft below Bellefontaine and rise to 78ft at the northern District boundary line. If the diameter were 60ft and the centerline depth ranges from 78-121ft, the depth of the tunnel crowns would range from only 48ft – 91ft, which is very shallow given the unprecedented tunnel diameter size.

Under Application of the Criteria of Adverse Effect, the “tunnel excavations” should be clarified as centerline measurements.

This section under Ground Movement states the two-stage effects analysis was intended to reflect “a worst-case scenario,” which is incorrect and misleading.

This section references Jacobs 2015: 3, 8 and its analysis of 8 parcels in the Markham Place Historic District for effects from excavation-induced ground settlement. Of these 8 parcels, this section says 3 parcels were predicted to sustain “slight” effects. This number contradicts the number given in Section 5.5.4.1, p5-273, which states under Ground Movement that only 1 historic property was predicted to sustain “slight” effects. This inconsistency is misleading and requires clarification.

**This section fails to state how “slight,” “moderate,” “moderate-severe,” and “severe” effects are defined in the Jacobs Associates/CH2M HILL supplemental report prepared in 2015 and repeatedly referenced in this document; an omission that appears to skew the analysis.**

**Given the discrepancies in identification of how many properties would be impacted to what degree, we cannot agree with the conclusion that project activities as described in this section would not result in an adverse effect.**

Section 5.5.4.4 Effects Analysis – Ambassador West Cultural Landscape Historic District

This section fails to identify the Harvest Rock Church auditorium as a sensitive receptor, for purposes of evaluating impacts from construction and operational vibrations, in addition to road noise.

Section 5.5.4.6 Effects Analysis – Raymond-Summit Historic District

Neither Figure 5-51 nor 5-52 correctly illustrates the boundaries of the Raymond-Summit Historic District.

Section 5.5.4.7 Effects Analysis – Old Pasadena Historic District

The City of Pasadena has identified corridors within the city that function as “gateways,” and the intersection of Colorado Boulevard and Pasadena Avenue serves as one of these important gateways into the City’s world-renown Old Pasadena Historic District and is an important segment of the nationally significant annual Rose Parade route. The erection of an 8ft sound wall as part of the Dual-Bore Tunnel Alternative would impact the setting and feeling of this sensitive location and is unacceptable. It is additionally unclear why this document fails to reference the ventilation towers along Colorado Blvd., west of Pasadena Ave. proposed by Caltrans as part of the Freeway Tunnel Alternative. See Rehabilitation Standards 9 and 10.

Figure 5.53 contradicts the Proposed Improvement description for the Single-Bore Design Variation.

The Application of Criteria for Adverse Effect fails to reference the ventilation towers that have been proposed along Colorado Blvd. as part of the Freeway Tunnel Alternative, which would introduce a discordant type of visual obstruction out of scale a proportion with the historic district. See Rehabilitation Standards 9 and 10.

CHAPTER 6 - Conditions Proposed

Section 6.2.2.2 Conditions Proposed - BRT Alternative / Conditions for 330 S.Fair Oaks

Conditions are required that would ensure historic sidewalk patterns, finish texture, and finish colors are retained.

Section 6.3 Conditions Proposed - LRT Alternative

This section fails to clarify if the 60ft tunnel depth measurement is to the tunnel centerline.

The Jacobs Associates 2015 supplemental report identifies 16 historic properties in the LRT APE, of which they evaluated 11 (3 selected for secondary analysis, p3); this section references only 7 properties “identified in Chapter 5 that would sustain effects as a result of LRT construction.” This discrepancy needs to be clarified and corrected.

The gross inconsistencies resulting from the failure to adequately and definitively establish the terms historic resource, historic property, parcel, group, and building is negligent and misleading.

Section 6.3.5 Conditions Proposed - Raymond Florist Historic District

The distance of excavation from the District's U-shaped boundaries needs to be clearly stated and correspond with those given in Sections 5.5.3.6 and Section 6.3.5.2.

The location from which these distances are measured needs to be established, clearly identified, and consistent throughout the entire document.

Section 6.3.8.1 Conditions Proposed - LRT Alternative Public Outreach

Why does this paragraph reference BRT Station components when it is in the LRT Alternative section?

No excavation-induced ground settlement mitigation measures are stated in this section, which is a serious and concerning omission.

Section 6.4.2 Conditions Proposed – Ground Settlement

Section 5.5.4.1 states that 18 historic properties were concluded in a 2015 report to be impacted by tunnel boring, while this section states 17 historic properties. This discrepancy is to be corrected.

Inconsistencies resulting from the failure to adequately and definitively establish the terms historic resource, historic property, parcel, group, and building is negligent and misleading and must be corrected.

Section 6.4.3 Conditions Proposed – Freeway Alternative Project Conditions

**As proposed, the Project Conditions are inadequate to sufficiently mitigate the risks to acceptable levels given the authors' limited knowledge of the building circumstances.**

Section 6.4.3.1 Conditions Proposed - Public Outreach

Why does this paragraph reference LRT Station components when it is in the Freeway Tunnel Alternative section?

CHAPTER 8 - Conclusions

Due to the numerous inconsistencies and errors in this draft document, we cannot support the conclusion that the SR710 North Study would not result in an adverse effect to historic properties.

**JACOBS ASSOCIATES 2015 SUPPLEMENTAL TECHNICAL MEMO:  
Potential Settlement Effects for Historic Properties**

Authors assume shallow building foundations "due to limited knowledge about building types." Basement construction methods and depths varied wildly before standardization in the late 1920s, a circumstance unique to historic properties that compromises the authors' assumptions and associated conclusions.

**WILSON IHRIG & ASSC SUPPLEMENTAL CONSTRUCTION VIBRATION IMPACT ASSESSMENT  
FOR HISTORIC PROPERTIES, May 2015**

Anticipated vibration levels from construction near historic properties located within APE; supplements analysis in Groundborne Noise and Vibration Impacts technical studies (Wilson, Ihrig 2014).

This report studies potential for damage to identified historic properties and built structures included in National Register of Historic Place but fails to address those properties that are eligible but undesignated. It also fails to identify its source of historic property data.

The report considers potential effects on occupants of these buildings temporary and no different than those for similar buildings that are not historic with similar occupancy. This is problematic because effects on occupants is unrelated to effects on historic fabric of buildings; the buildings are historic and fragile, not the occupants.

The authors fail to explain the relevance of alluvium soil type at tunnel portal to vibration impacts on historic buildings.

A comparison of the two tunnel types is irrelevant; they are two different projects with different size tunnels in different locations – any comparison to EACHOTHER is of minimal value to the people evaluating the different impacts of either.

The report references source data for vibration generated by a typical TBM, which is useless because the FWT TBM is anything but typical at 60ft in diameter.

No acceptable reason is given why this report assumes the depths of TBM tunnels when other technical reports give specific distances.

The Dowding formula for “typical TBM” is used to project vibration and scaled by a factor of 3. Is this adequate? What precedent is this factor based on? Is it arbitrary? Further clarification is required to accept these calculations as reliable best practice.

Given the potentially damaging construction vibrations predicted at Fair Hope and Raymond Florist Historic District buildings, detailed mitigation measures based on precedent are missing from this analysis.

6.0 Standard Conditions for Construction Vibration Control and Monitoring

Given the damage anticipated from vibration impacts, the report fails to address how the project could be ‘re-designed’ to avoid damage rather than reduce it.

Table 1

Incorrectly identifies Glenarm Building and Electric Fountain as located within Unincorporated Los Angeles County; it is located in the City of Pasadena.



Table 2

Should list the Center Tunnel Depth below the Pasadena Avenue and Markham Place Historic Districts as a range, given that the tunnel depth decreases as it moves north. These ranges should be proofed for their consistency with those given in Sections 5 and 6 of the Finding of Effect evaluation as well as the Draft EIR documents.

Table 3

It is unclear and questionable why the predicted TBM Vibration Levels within North Portal Area for the historic property at 595 S. Pasadena Ave. differ from those given for its historic neighbor at 206-216 W. California Blvd. in Table 2.

Cc: Sarah Gavit, West Pasadena Residents Association  
Christina Morris, National Trust for Historic Preservation  
Adrian Scott Fine, Los Angeles Conservancy  
Antonio Rossmann, Rossmann and Moore, LLP  
Margaret Lin, City of South Pasadena  
Claire Bogaard, No 710 Action Committee  
Vince Bertoni, Planning & Community Development, City of Pasadena  
Fred Dock, Department of Transportation, City of Pasadena