Attachment A

5-Cities Alliance

Comment Letter

& Technical Studies

- Technical Appendix 1: Transportation
- Technical Appendix 2: Noise and Vibration
- Technical Appendix 3: Geology, Seismic, Soils and Groundwater
- Technical Appendix 4: Air Quality

SHUTE, MIHALY
& WEINBERGER LLP

396 HAYES STREET, SAN FRANCISCO, CA 94102
T: (415) 552-7272 F: (415) 552-5816
www.smwlaw.com

Rachel B. Hooper
Laurel L. Impett

July 9, 2015

Garrett Damrath, Chief Environmental Planner
Division of Environmental Planning
Department of Transportation, District 7
100 S. Main St., MS-16A
Los Angeles, CA 90012

Re: Draft Environmental Impact Report/Environmental Impact Statement SR 710 North Study

Dear Mr. Damrath:

This firm represents the cities of Glendale, La Cañada Flintridge, Pasadena, South Pasadena and Sierra Madre ("5-Cities Alliance") in connection with the State Route ("SR") 710 North Project ("Project").[1] On behalf of 5-Cities Alliance, we respectfully submit these comments to help ensure that agency decision-makers fully comply with the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000 *et seq.*, and the National Environmental Policy Act ("NEPA"), 42 U.S.C. section 4321 *et seq*. Our client is deeply concerned about the far-ranging environmental impacts the Project may have on their cities.

After carefully reviewing the SR 710 Draft Environmental Impact Report/Statement ("DEIR/S") for the Project, we have concluded that it fundamentally fails to comply with the requirements of CEQA and NEPA in numerous respects. As described below, the DEIR/S violates these laws because it: (1) fails to identify

[1] For purposes of this letter, the "Project" refers collectively to the build alternatives unless we indicate otherwise. The build alternatives include: Transportation System Management/Transportation Demand Management ("TSM/TDM"); Bus Rapid Transit ("BRT"); Light Rail Transit ("LRT"); and single bore and dual bore variations of the Freeway Tunnel alternative (collectively, "Freeway Tunnel").

thresholds of significance for the vast majority of the environmental impact analyses; (2) fails to provide significance determinations for numerous environmental impact categories; (3) fails to properly describe the Project's environmental setting; (4) defers analysis of critical environmental impacts and fails to adequately analyze those impacts it does address; (5) fails to support its conclusions with substantial evidence; (6) fails to propose adequate mitigation measures for the Project's numerous significant environmental impacts; and (7) fails to undertake a sufficient study of alternatives to the Project.

Of critical importance, the DEIR/S fails in its role as an informational document. In order to fully understand the analyses and conclusions in the DEIR/S, the public must wade through over 25,000 pages. While one would expect that the main body of the EIR/S would contain an accurate summary of the information contained in the technical appendices, this is not the case. In certain instances, the DEIR/S's conclusions are contradicted by analyzes in the technical appendices. For example, the DEIR/S concludes the Project would result in a benefit to public health while the technical appendix shows that that certain of the Project alternatives would harm public health by increasing the risk of cancer in certain locations. Such fundamental errors undermine the integrity of the EIR/S.

The EIR is "the heart of CEQA." *Laurel Heights Improvement Ass'n v. Regents of University of California* (1988) 47 Cal.3d 376, 392 ("*Laurel Heights*") (citations omitted). It is "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' Because the EIR must be certified or rejected by public officials, it is a document of accountability." *Id.* (citations omitted). Likewise, NEPA requires that federal agencies "consider every significant aspect of the environmental impact of a proposed action . . . [and] inform the public that [they have] indeed considered environmental concerns in [their] decision-making process[es]." *Earth Island Institute v. U.S. Forest Service* (9th Cir. 2003) 351 F.3d 1291, 1300 (citations omitted).

CEQA requires the EIR not only to identify a project's significant effects, but also to identify ways to avoid or minimize them. Pub. Res. Code § 21002.1. An EIR

generally may not defer evaluation of mitigation to a later date. CEQA Guidelines[2] § 15126.4(a)(1)(B). Rather, an EIR must assess each mitigation proposal that is not "facially infeasible," even if such measures would not completely eliminate an impact or render it less than significant. *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1029-31. Furthermore, for every mitigation measure evaluated, the agency must demonstrate that the mitigation measure either: (1) will be effective in reducing a significant environmental impact; or (2) is ineffective or infeasible due to specific legal or "economic, environmental, social and technological factors." *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 1352, 1359-61; Pub. Res. Code §§ 21002, 21061.1; CEQA Guidelines §§ 15021(b), 15364.

NEPA's requirements are similar. NEPA requires an EIS to contain a detailed discussion of all unavoidable environmental impacts. 42 U.S.C. § 4332(C)(ii). In its discussion of the proposed actions and alternatives, the EIS must "[i]nclude appropriate mitigation measures" and discuss the "[m]eans to mitigate adverse environmental impacts." 40 CFR §§ 1502.14(f), 1502.16(h). The statute "require[s] that an EIS discuss mitigation measures, with 'sufficient detail to ensure that environmental consequences have been fairly evaluated.' An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective." *South Fork Band Council of W. Shoshone of Nevada v. U.S. Dep't of Interior* (9th Cir. 2009) 588 F.3d 718, 727 (quoting *Robertson v. Methow Valley Citizens Council* (1989) 490 U.S. 332, 352).

Where, as here, the environmental review document fails to fully and accurately inform decision-makers and the public of the environmental consequences of proposed actions, or identify ways to mitigate or avoid those impacts, it does not satisfy the basic goals of either CEQA or NEPA. *See* Pub. Res. Code § 21061 ("The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project."); 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."). As a

[2] 14 California Code of Regulations § 15000 *et seq.*

result of the SR 710 DEIR/S's numerous and serious inadequacies, there can be no meaningful public review of the Project.

This letter, along with the report by Nelson Nygaard on transportation (Exhibit 1), the report by Landrum & Brown on air quality and greenhouse gas ("GHG") (Exhibit 2), the report by Landrum & Brown on noise (Exhibit 3), and the report by Wilson Geosciences Inc. on geology and groundwater resources (Exhibit 4), constitutes 5-Cities Alliance's comments on the DEIR/S. We respectfully request that the Final EIR/S respond separately to each of the points raised in the technical consultants' reports as well as to the points raised in this letter. In addition, each of the 5-Cities Alliance member cities will be submitting letters under separate cover. The Alliance joins in the CEQA and NEPA comments of all of its member cities.

THE PROPOSED FREEWAY TUNNEL ALTERNATIVE IS FLAWED AND UNNECESSARY.

This letter focuses primarily on the DEIR/S's failure to comply with CEQA and NEPA. Nevertheless, it is important to emphasize at the outset that the Project's primary alternative,[3] the Freeway Tunnel, is itself flawed and unnecessary. The DEIR/S has posited an ill-defined Project objective and, consequently, the Freeway Tunnel alternative does not address the region's transportation needs. According to the DEIR/S, the Project's primary objective is to resolve the lack of continuous north-south transportation facilities in the San Gabriel Valley. DEIR/S at 3. The DEIR/S suggests that it is this lack of facilities that results in congestion on freeways and "cut-through" traffic that affects local streets. *Id.* Yet, as the Nelson Nygaard Report explains, the region actually lacks east-west transportation facilities, not north-south. Moreover, very little – about 14 percent – of current peak period traffic is cut-through traffic. By providing a new freeway link, the Freeway Tunnel alternative would reduce this cut-through traffic from about 14 percent to between 7 percent and 11 percent. By reducing

[3] The DEIR/S purports to analyze Project alternatives on equal footing, without giving priority to any single one. However, the document subtly reveals an implicit bias in favor of the Freeway Tunnel alternative based, for example, on its selection of Caltrans (not Metro) as lead agency, and SCAG's inclusion of the Freeway Tunnel in the 2012 Regional Transportation Plan/Sustainable Communities Strategy. *See* Section I.B, below.

this cut-through traffic, approximately 7 percent to 13 percent of all motorists throughout the study area would receive a nominal travel time savings of 2.5 minutes.[4] This means that about 90 percent of motorists in the study would receive no significant travel time savings, or their travel time would worsen, as a result of this alternative.

Nor would the Freeway Tunnel actually improve regional traffic. Instead, it would shift congestion around. Traffic would significantly worsen on various connecting freeways as a result of the tunnel, in part because the Freeway Tunnel induces extra driving. The Freeway Tunnel would also increase traffic congestion in parts of Alhambra, Rosemead, San Marino, Pasadena and South Pasadena.

The Freeway Tunnel would also bypass many of the destinations people want to go. According to the New Initiative for Mobility and Community, the San Gabriel Valley is a community of diverse people with widely varying commute patterns. *See* "New Initiative for Mobility and Community," prepared by Nelson Nygaard for Connected Cities and Communities, attached as Exhibit 5. Eighty-five percent of commuters exiting the 710 Freeway at Valley Boulevard are intent on reaching local destinations. Employees need to make short commutes to Pasadena and longer commutes to Burbank (Metro has found that 70 percent of study-area vehicle trips start and end within the San Gabriel Valley). Students attending Cal State LA and East LA College need ways to make short commutes to school. The Freeway Tunnel Alternative simply would not serve these types of transportation needs.

In addition, the Freeway Tunnel does not provide a *sustainable* solution to the region's transportation needs, and confers no support for active transportation. Every trip starts by walking, and the people of San Gabriel Valley deserve to be able to walk safety and comfortably. The region should be striving toward a transportation solution that will make car ownership an option rather than a necessity. Projects such as the Freeway Tunnel that facilitate the automobile and promote increased vehicular speeds threaten the walkability of a community. Clearly, there must be a better solution to meeting the region's transportation needs, especially given the Freeway Tunnel's hefty

[4] 2.5 minutes is the threshold used to count vehicle hours travelled during peak periods; some savings may be greater but the DEIR/S does not contain this granular information. *See* DEIR/S Transportation Technical Report at 4.3.

$5.5 billion price tag—and the fact that it will not "pay for itself" through tolls as some have asserted.

Furthermore, the Freeway Tunnel's increase in vehicular capacity will cause a substantial increase in vehicle miles travelled ("VMT"), with resulting increases in greenhouse gas ("GHG") emissions and other air pollution. As explained further below, ample studies demonstrate that increased highway capacity increases VMT and GHG emissions in the long-run.[5] Consequently, providing increased roadway capacity is unlikely to relieve congestion. The DEIR/S provides a real-world example of this effect, as it acknowledges that the Freeway Tunnel would result in a sizable increase in vehicular travel. Total VMT under all freeway tunnel alternatives would increase by as many as 460,000 miles per day. This increase in VMT demonstrates that adding highway capacity is a temporary solution, at best, to the complex problem of traffic congestion.

Because the Freeway Tunnel alternative would increase capacity and induce travel, it would take the region in a direction that prevents achieving the State's preeminent climate goals. Governor Brown's Executive Order issued on April 29, 2015 directs the state to cut its GHG emissions 40 percent below 1990 levels by 2030; this directive reiterates Governor Schwarzenegger's 2005 Executive Order, which calls for reducing statewide GHG emissions 80 percent below 1990 levels by 2050. The State will not be able to meet these goals without a reduction in motor vehicle travel. Tellingly, Caltrans itself specifically recognized this fact when it noted that achieving the State's climate change goals requires a "fundamental, holistic transformation of the transportation systems." *See* California's 2040 Transportation Plan, March 2015 at 4, attached as Exhibit 6 (stating that one of the main strategies to reduce future GHG emissions for the movement of people and freight is reducing vehicle miles traveled and increasing a shift to more sustainable transportation).

In addition, it is important to understand that even if a freeway tunnel were the appropriate solution to meet the region's transportation needs—which it is not—the Freeway Tunnel design being considered here is entirely unprecedented. The proposed

---

[5] *See* S. Handy and M. Boarnet, California Air Resources Board (CARB), *Policy Brief in the Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions*, September, 30, 2014, at 4, 5, attached as Exhibit 7.

60-foot diameter tunnel would be the widest subsurface tunnel attempted anywhere in the world. In December 2013, the tunnel boring machine ("TBM") used to construct Washington State's Alaskan Way Viaduct replacement project—the largest such tunnel to date (57-foot diameter)—became stuck after tunneling only one thousand feet of the tunnel's 1.7-mile length. Workers had to construct an access pit 120 feet deep and 80 feet wide to lift the TBM out in order to repair it. Had it not failed so early, accessing the machine for repairs would have been even more difficult—or impossible—because the tunnel's route takes it beneath downtown Seattle. The Seattle project is now at least two years behind schedule and it is unclear whether it can or will be successfully completed. That project serves as a cautionary tale for the proposed Freeway Tunnel alternative, yet the DEIR/S fails to address the impacts that could result if a TBM were stuck along the SR 710 route alignment, which is located in a densely developed area.

In sum, selection of the Freeway Tunnel alternative would result in the loss of a critical opportunity to fundamentally, holistically transform the region's transportation system. Indeed, this alternative reflects strategies from the 1960's, when the state pursued road-building projects without regard to global climate change and other environmental threats. The agencies should deny the proposed Project and go back to the drawing board, to design a project that is capable of meeting the region's transportation needs in a manner that is sustainable and environmentally responsible. In particular, as discussed more fully below, the 5-Cities Alliance urges the agencies to consider its "Beyond the 710" alternative, a multimodal option that combines mass transit, "great streets," and bikeways.

THE DEIR/S FAILS TO COMPLY WITH CEQA AND NEPA.

I. The DEIR/S's Description of the Project Violates NEPA and CEQA.

An accurate description of a proposed project is "the heart of the EIR process" and necessary for an intelligent evaluation of the project's environmental effects. *Sacramento Old City Ass'n. v. City Council* (1991) 229 Cal.App.3d 1011, 1023; *see also Rio Vista Farm Bureau v. County of Solano* (1992) 5 Cal.App. 4th 351, 369-370 (project description is the "sine qua non" of an informative and legally sufficient EIR); *see also Westlands Water Dist. v. U.S. Dep't of Interior* (9th Cir. 2004) 376 F.3d 853, 866-868 (the purpose and need statement of an EIS must "reasonably define[ ] the objectives of the project"). Consequently, courts have found that, even if an EIR is adequate in all other respects, the use of a "truncated project concept" violates CEQA and mandates the conclusion that the lead agency did not proceed in a manner required by

law. *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730. Furthermore, "[a]n accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Id.* (citation omitted).

Thus, an inaccurate or incomplete project description renders the analysis of significant environmental impacts inherently unreliable. While extensive detail is not necessary, the law mandates that EIRs should describe proposed projects with sufficient detail and accuracy to permit informed decision-making. *See* CEQA Guidelines §15124 (requirements of an EIR). NEPA similarly requires an accurate and consistent project description in order to fulfill its purpose of facilitating informed decision-making. 43 U.S.C. § 4332(2)(C).

The DEIR/S's description of the Project fails to fulfill these requirements. It lacks adequate detail regarding project construction, obscures the alternative preferred by Caltrans and Metro, fails to identify the standards by which the agencies will select an alternative, and lacks critical information about Project funding. As a result, the DEIR/S does not come close to meeting the basic thresholds for legal adequacy.

A. The DEIR/S Fails to Identify Performance Criteria or Objective Standards by Which Caltrans and Metro Will Evaluate the Alternatives.

The DEIR/S provides no objectives or standards by which the lead agency may evaluate the various alternatives' comparative performance. This omission undermines the public process, leaving interested parties without guidance as to how project selection will transpire. The document's lack of transparency violates CEQA's and NEPA's fundamental goals of ensuring that, especially for projects involving potentially significant environmental impacts, decisions are made with a maximum of transparency and public input. *See, e.g., Save Tara v. City of W. Hollywood* (2008) 45 Cal.4th 116, 136 ("CEQA's goal. . .[is] transparency in environmental decision-making."); *Sierra Club v. Gates* (S.D. Ind. 2007) 499 F.Supp.2d 1101, 1132 (lack of transparency in decision-making process was "troubling in light of the goal of NEPA to ensure public input into the process").

The DEIR/S's omission is surprising, given that some objectives and performance measures were identified in Metro's Alternatives Analysis Report. That report included eight performance objectives related to transportation system

performance, environmental impacts, planning considerations, and cost efficiency. Alternatives Analysis Report (2012) ES-3 to -4. For each of these eight objectives, the document identified one or more performance measures. *Id.* at 2-4. It also described the screening criterion selection process Metro used to select the alternatives it would consider in the DEIR/S. *Id.* at ES-4. Yet, such criteria are entirely lacking in the DEIR/S, where their presence is even more crucial. The public is thus left in the dark as to whether Caltrans and Metro will be relying on these same objectives and performance measures to select from among the proposed project alternatives, or whether the agencies will be using a different set of objectives and performance measures.

Of course, Caltrans commonly relies on performance measures and criteria. For example, Caltrans' Strategic Management Plan 2015-2020 sets very specific targets for transportation mode shift and VMT reduction. Similarly, Caltrans' Smart Mobility Caltrans Report (2010) describes specific performance measures to advance "smart mobility." Smart Mobility Caltrans Report (2010) at 8, 50, attached as Exhibit 8. Neither document is even mentioned in the DEIR/S, however. Readers need to know if the agencies will be using these, or other performance measures, to assess the alternatives.

Equally troubling, the DEIR/S fails to clarify the respective roles of Caltrans and Metro in making the ultimate selection among project alternatives. The DEIR/S states that "Caltrans, in consultation with Metro, will identify a Preferred Alternative and make the final determination of the project's effect on the environment." DEIR/S at 2-107. But the document does not address how the two agencies will share responsibility for the choice among alternatives, or how they will each bring their distinct expertise to bear in that decision. This is especially confusing, as the lead agency for the Project will differ depending on the alternative eventually chosen. *See* DEIR/S at preface. As the City of South Pasadena's comment letter explains, changing the lead agency depending on the selected alternative is unlawful and improperly skews the analysis in favor of the Freeway Tunnel alternative. Letter from Rossman & Moore for City of South Pasadena, pp.__.

B. The DEIR/S Does Not Acknowledge That the Freeway Tunnel Is the Preferred Alternative.

The CEQ's regulations for implementing NEPA require the alternatives section of an EIS to "identify the agency's preferred alternative if one or more exists, in the draft statement, and identify such alternative in the final statement . . . ." 40 C.F.R. § 1502.14(e). Therefore, if the agency has a preferred alternative at the draft EIS stage,

that alternative must be labeled or identified as such in the draft EIS. *See also* Council on Environmental Quality, Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18028 (March 23, 1981).

Although the DEIR/S purports to evaluate the alternatives without giving priority to any single one, there are strong indications that the Freeway Tunnel is Caltrans' and Metro's preferred alternative, and that the agencies have already made their decision to select it for project approval. For example, the DEIR/S states, when discussing the Project generally: "Because *the proposed project would add a new freeway tunnel* to the project area and/or would widen existing local roads, it would potentially worsen air quality." DEIR/S at 3.13-16 (emphasis added).

Tellingly, unlike the other alternatives, the freeway tunnel is included in SCAG's 2015 Federal Transportation Improvement Program ("FTIP") and its 2012 Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS"). DEIR/S at 1-51; 3.13-14. Accordingly, the DEIR/S states that "[t]he forecast revenues in the RTP/SCS financial plan include toll revenues from the SR 710 freeway tunnel." *Id.* at 1-51. This is revealing. By acknowledging that SCAG's transportation plan includes, and actually relies on the toll revenues from the freeway tunnel, the DEIR/S suggests that the freeway tunnel is a foregone conclusion in the eyes of Metro and SCAG.

Together, these statements indicate that despite the DEIR/S's ostensible lack of a preferred alternative, Caltrans and Metro have already determined to approve and construct the Freeway Tunnel alternative. The DEIR/S must acknowledge that the Freeway Tunnel alternative is in fact the preferred alternative. By failing to do so, the document misleads readers and obscures the institutional momentum behind the Freeway Tunnel alternative.

C. The DEIR/S Lacks an Adequate Description of Potential Funding Sources for Each Alternative.

The DEIR/S's discussion of funding for each of the alternatives is altogether opaque, and the public therefore has no way to determine the Project's true costs. The DEIR/S should contain a separate, detailed description (accompanied by a summary in table format) of both: (1) the estimated costs of each project component, and (2) the estimated funding sources for each alternative.

Given the size and cost of the proposed Project, the public has a keen interest in ready access to cost and funding data for the various alternatives. Indeed, the environmental impacts of project alternatives cannot be fully considered without an understanding of this crucial information. As it stands, the DEIR/S addresses cost information only superficially, in one short paragraph at the end of the description of each project alternative. This approach is entirely unhelpful.

As for potential funding sources, the DEIR/S fails to discuss this topic in any focused manner. Instead, it sprinkles references to possible funding sources throughout the document, but with insufficient detail. The most specific discussion of funding for the alternatives appears, of all places, in two rows of the Table 3.1.3, which addresses the Project's consistency with state, regional, and local plans. DEIR/S at 3.1-36; 3.1-47 (Policy 4.2.3 and Policy 1.21). But these explanations merely state that "state and local funding sources are anticipated to be used" for all build alternatives, and that the TSM/TDM, LRT, and Freeway Tunnel alternatives would need to be added to the FTIP[6] to be eligible for federal funding. *Id.* Again, this information is too nebulous to be useful.

The DEIR/S's other statements about Project funding are vague or inconsistent. For example, the DEIR/S states that "[t]he Project is proposed to be funded entirely or in part by Measure R, a half-cent sales tax dedicated to transportation projects in Los Angeles County." DEIR/S at 1-1. Elsewhere, however, it explains that only $780 million in funding has been committed by Measure R to the SR 710 improvements.[7] *Id.* at 1-6; 1-51. This is a small fraction of the cost of the Project, which is estimated to be $5.5 billion for the Freeway Tunnel alternative. There is little mention of the other sources of local or regional funding, or how those funding sources may differ depending on the alternative selected.

---

[6] Confusingly, the document elsewhere states that the Freeway Tunnel Alternative is already included in SCAG's 2015 FTIP. DEIR/S at 3.13-14.

[7] Although the DEIR/S states that Measure R includes a "commitment" of $780 million to the 710 Project, DEIR/S at 1-52, Metro has previously taken the position that Measure R does *not* constitute a binding commitment to spend in a particular manner. Exhibit 9 at 37 (Opening Brief of Respondent Los Angeles County Metropolitan Transportation Authority, *City of South Pasadena v. Los Angeles County Metropolitan Transp. Authority* (Cal. Ct. App., Mar. 22, 2011, B221118) 2011 WL 989553).

Nor does the DEIR/S analyze the revenues expected from the toll version of the Freeway Tunnel alternative despite earlier indications that this analysis would be conducted at this stage. Specifically, Metro's 2012 Alternatives Analysis Report stated that "Metro . . . concludes that freeway tunnel alternatives could be funded by future toll revenues. However, no analysis of toll revenues has been conducted in this Alternatives Analysis so this conclusion will be verified in the PA/ED ["Project Approval & Environmental Documentation"] phase." Alternatives Analysis Report Appx. X, Cost of Alternatives Technical Memorandum at 5. Nevertheless, the DEIR/S includes only a single, offhand mention of toll revenues, noting that toll revenues from the freeway tunnel are included in SCAG's 2012 RTP/SCS financial forecast. DEIR/S at 1-51.

The DEIR/S's discussion of federal funding is similarly incomplete. It explains that the Project is classified as a "Type I" project because federal aid is proposed for construction for the Freeway Tunnel, BRT, and TSM/TDM alternatives. *Id.* at 3.14-7. But the document nowhere explains what a "Type I project" is. Nor does it explain in the project description why federal aid is proposed for all build alternatives except the LRT, and whether the (un)availability of federal funding will influence selection of the project alternative. Simply stating that federal funding is "proposed" provides little useful information. The reader is left guessing as to: (1) the likelihood that such funding will actually be secured, (2) the expected grant amount, and (3) what portion of the Project's overall cost would be covered by that funding.[8]

The absence of meaningful discussion of project funding is surprising, since the issue is not new. In 2003, the Federal Highway Administration ("FHWA") informed Caltrans that the FHWA was rescinding its 1998 Record of Decision (the NEPA approval document) for a prior version of the SR 710 project and requiring Caltrans to conduct a supplemental EIS. The FHWA based this decision, in part, on "[c]ontinued uncertainty regarding the financing of this project and the failure to develop a comprehensive financial plan for its implementation." Exhibit 10 at 7 (G. Hamby Letter to J. Morales, December 17, 2003).

---

[8] As noted above, simply referring to appendices or technical documents is not sufficient. The DEIR/S's information on costs and funding sources must be presented to the reader in a straightforward, comprehensible format. *See California Oak Found. v. City of Santa Clarita* (2005) 133 Cal. App. 4th 1219, 1239 (relevant information may not be "buried in an appendix").

The DEIR/S's omission of any useful information as to Project cost and funding is glaring. These monetary issues are vital, as they dictate not only whether the Project's purported benefit justifies the cost, but also whether the Project will ever be completed. Other tunnel-boring projects with lesser risks have encountered serious difficulties, resulting in huge cost-overruns and long delays. The Alaskan Way Viaduct tunnel, whose pre-project cost estimate was about half that of the dual-bore Freeway Tunnel alternative, again is illustrative. As noted previously, work has been stalled on the Seattle project since 2013, when the tunnel boring machine broke down in situ.[9] Additional costs are unknown,[10] although the Washington State Department of Transportation hopes to hold the contractor liable for such costs. [11]

The Alaskan Way Viaduct replacement project is not the only example of an underground infrastructure project involving the use of tunnel boring machines that is afflicted by high costs and delays. Contractors operating a tunnel boring machine for a similar project in Miami demanded an extra $150 million three months before the start of excavation based on the results of new geotechnical analysis.[12] Indeed, studies have shown that for large-scale transportation infrastructure projects like the SR 710 North Project, the likelihood of cost overruns correlates with the length of the project's

---

[9] Galloway, P., *et al.*, *Alaskan Way Viaduct Replacement Program Expert Review Panel Updated Report*, April 3, 2015 at 4, attached as Exhibit 11.

[10] The Washington State Department of Transportation currently estimates that additional costs could exceed $300 million. Alaskan Way Viaduct Replacement Expert Review Panel Update Report at 28.

[11] *See* KOMO NEWS, *Transportation officials: New cracks on Alaskan Way Viaduct* (April 7, 2015), available at: http://www.komonews.com/news/local/Transportation-officials-New-cracks-on-Alaskan-Way-Viaduct-298930741.html.

[12] *See* CBS MIAMI, *Company Building Port of Miami Tunnel Seeks More Money* (July 8, 2011), available at http://miami.cbslocal.com/2011/07/08/company-building-port-of-miami-tunnel-seeks-more-money/; *see also* THE COLUMBUS DISPATCH, *Project to bore tunnel under Columbus faces $29.5 million cost overrun* (Dec. 6, 2014), available at: http://www.dispatch.com/content/stories/local/2014/12/06/daunting-drilling.html (Cleveland project involving tunnel boring machine delayed two years with $29.5 million cost overrun).

implementation phase; here, the dual-bore Freeway Tunnel alternative is expected to take five years to construct, three years longer than the initial time estimate for the Seattle project. In addition, tunnel projects are especially likely to fall prey to higher levels of cost escalation. *See generally* Bent Flyvbjerg, et al. "What Causes Cost Overrun in Transportation Infrastructure Projects?" *Transport Reviews* (2004), attached as Exhibit 12; Bent Flyvbjerg, "What You Should Know About Megaprojects and Why: An Overview" *Project Management Journal* (2014), attached as Exhibit 13.

D. The DEIR/S's Description of the Project Fails to Include Adequate Detail Regarding Construction of the Tunnel Alternatives.

The description of a Project's construction details should be commensurate with its size and scope. Given the immense cost, size, and scope of the alternatives proposed in the DEIR/S, the Project description should have supplied more detail regarding their construction. Below are just three examples of the ways in which the Project description's discussion of construction details falls short.

First, the DEIR/S states that for the LRT and Freeway Tunnel alternatives, the tunnel would be fabricated from a precast concrete segmental lining system. DEIR/S at 2-52; 2-80. There is no explanation of how the precast concrete tunnel rings will be transported to, or fabricated at, the Project site. The precast concrete tunnel rings required to build very large diameter tunnels such as the dual bore are enormous: nearly 60 feet in diameter. Given the 4.2 miles of tunnel, the Freeway Tunnel alternative would require 1056 tunnel rings if they are 20 feet long, or 2,112 rings if they are 10 feet long. Concrete structures that are 60 feet in diameter would cover about five traffic lanes on a freeway and must be hauled to the tunnel entrance portal from the fabrication site. Given their size, they likely would be designed in several pieces to be assembled on site. The DEIR/S provides no description of this process, despite the obvious impacts. For example, the possibility of unaccounted-for truck trips implicates the transportation, air quality, noise, and GHG analyses.

Second, the DEIR/S states that the Project would be built in phases. However, the DEIR/S addresses construction phasing only in the most general terms; it even lacks factual detail about when the phases would occur. *See* DEIR/S at 2-24 (TSM/TDM); 2-38 to -39 (BRT); 2-57 to -60 (LRT); 2-85 to -86 (Freeway Tunnel). Construction is estimated to take up to five to six years, depending on the alternative selected. Details of the timing of construction are critical to understanding Project impacts, yet the DEIR/S lacks any description of this critical Project component.

Third, the DEIR/S contains no description of how repairs will be made to the tunnel boring machines in the event that they malfunction during Project construction. The DEIR/S must address this issue. As noted previously, the TBM for the Alaskan Way Viaduct Replacement Project tunnel malfunctioned during the early stages of tunnel construction and became stuck, requiring workers to lift it out to perform repairs. This intensive work, which involved the use of heavy equipment to excavate an access pit 120 feet deep and 80 feet wide, has delayed that project by at least two years. Given Seattle's experience, and the fact that the Freeway Tunnel alternative proposes to use up to *four* TBMs (thereby quadrupling the risk of mechanical failure), the DEIR/S should have addressed how repairs would be made in the event of a TBM malfunction. Unfortunately, this flaw in the Project description resulted in an incomplete analysis of the tunnel alternatives' impacts in a number of areas. For example, because the DEIR/S does not describe a TBM repair plan or strategy, it does not analyze the potential impacts from repair-related excavation and extended tunnel construction. Such impacts may include ground settlement and additional noise, vibration, and air quality impacts. In a worst-case scenario, homes and businesses above or adjacent to the Project site would need to be relocated in order to allow workers access to a TBM from the surface.

In sum, the DEIR/S's description of the Project suffers from serious flaws and omissions. Consequently, the DEIR/S does not meet CEQA and NEPA's basic requirements.

II. The DEIR/S's Analysis of and Mitigation for the Project's Environmental Impacts Are Inadequate.

The evaluation of a proposed project's environmental impacts is the core purpose of an EIR. *See* CEQA Guidelines § 15126.2(a) ("[a]n EIR shall identify and focus on the significant environmental effects of the proposed project"). Likewise, NEPA requires that federal agencies "consider every significant aspect of the environmental impact of a proposed action . . . [and] inform the public that [they have] indeed considered environmental concerns in its decision-making process." *Earth Island Institute,* 351 F.3d at 1300 (citations omitted). Each statute also requires that the EIR/S identify measures that would effectively mitigate a proposed project's significant effects on the environment. Pub. Res. Code § 21002.1(a); *Robertson,* 490 U.S. at 352-352. As explained below, the DEIR/S fails to analyze the Project's numerous environmental impacts, including those affecting air quality, climate change, traffic and transportation, noise, geology, hydrology and water quality. It also fails to identify effective mitigation measures for the Project's significant effects.

A. The DEIR/S's Analysis of and Mitigation for Air Quality Impacts Are Inadequate.

The Project is located within the South Coast Air Basin, which has the worst air quality – with the highest observed ozone concentrations – in the United States. *See* Letter to Michael Miles, Caltrans from USEPA, September 28, 2012 regarding the I-710 Project from Ocean Boulevard to State Route 60, at pdf page 6, attached as Exhibit 14. The South Coast Air Basin also has the greatest number of unhealthy air quality days.[13] Direct and indirect air pollutant emissions from transportation-related activities is a major contributor to this poor air quality. *See* Exhibit 14 (J. Blumenfeld Letter to M. Miles, September 28, 2012).

Given the severe air pollution in the Project study area, and the Project's potential to contribute to that pollution (particularly if the Freeway Tunnel is selected), one would expect the DEIR/S to provide a comprehensive analysis of the Project's impacts and to thoroughly mitigate for these impacts. Yet, the DEIR/S fails to achieve CEQA's and NEPA's most basic purpose: informing governmental decision-makers and the public about the potential significant environmental effects of a proposed activity. CEQA Guidelines § 15002 (a) (1); 40 C.F.R. § 1500.1(b). Because the attached air quality report by Landrum & Brown discusses the inadequacies of the DEIR/S's air quality analysis in detail, this letter will highlight just a few of these deficiencies. *See also* Letter of the City of La Cañada Flintridge (presenting detailed discussion of DEIR/S's defective air quality analysis).

1. The DEIR/S's Analysis of Construction-Related Air Quality Impacts Is Flawed, and the Proposed Mitigation Insufficient.

Determining whether a project may result in a significant adverse environmental effect is one of the key aspects of CEQA and NEPA. CEQA Guidelines § 15064(a) (determination of significant effects "plays a critical role in the CEQA process"); 40 C.F.R. § 1502.16 (Discussion of environmental consequences "shall include discussions of...[d]irect effects and their significance [and] [i]ndirect effects and their significance."). CEQA specifically anticipates that agencies will use thresholds of

[13] *See* "State of the Air," American Lung Association, available at: http://www.stateoftheair.org/2014/key-findings/ozone-pollution.html, accessed on May 26, 2015.

significance as an analytical tool for judging the significance of a Project's impacts. *Id.* § 15064.7. Because the requirement to provide mitigation is triggered by the identification of a significant impact, an EIR's failure to identify a project's significant impacts also results in a failure to mitigate these impacts. Here, the DEIR/S fails to identify construction-related thresholds of significance; as a result, it never comes to a conclusion regarding the significance of the Project's construction-related impacts, or identifies adequate mitigation for those impacts.

The DEIR/S quantifies the increase in construction-related criteria air pollutant emissions (Table 3.13.4 at page 3.13-11) and states that "short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other construction equipment." *Id.* at 4-6. The DEIR/S then fails to take the next critical step in the analysis: to disclose whether the Project's increase in emissions constitutes a significant impact. According to the Landrum & Brown Air Quality Report, the Project's construction emission levels before mitigation are well above the regional significance thresholds recommended by the South Coast Air Quality Management District ("SCAQMD"). *See* SCAQMD Air Quality Significance Thresholds, attached as Exhibit 15. The LRT and Freeway Tunnel alternatives would exceed relevant thresholds for reactive organic gasses ("ROGs"), and carbon monoxide ("CO") emissions. *See* Landrum & Brown Air Quality Report. All of the build alternatives greatly exceed the SCAQMD thresholds for particulates and NO_x emissions. Indeed, For the LRT and Freeway Tunnel alternatives, particulate emissions are between 3.8 and 9.7 times greater than the SCAQMD thresholds. NO_x emissions are 22.4 times greater than the SCAQMD thresholds for the LRT alternative and 43.9 and 49.3 times greater for the two Freeway Tunnel alternatives. *Id.* The DEIR/S does not disclose these exceedances of regional air quality standards.

Notwithstanding the Project's clearly significant construction-related emissions, the DEIR/S errs further by failing to evaluate whether these emissions also violate federal and state ambient air quality standards. The SCAQMD recommends using an approach called a "localized construction impact assessment" to determine whether construction emissions will create any exceedances of these ambient air quality standards, or worsen any existing exceedances. *See* SCAQMD's Localized Significance Threshold ("LST") Methodology, attached as Exhibit 16. LSTs, which are developed based on the ambient concentrations of pollutants for each source receptor area, represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. Projects larger

than five acres typically are not exempt from this analysis but must perform their own dispersion modeling to determine pollutant concentrations at nearby receptors. We can find no indication that the DEIR/S conducted the necessary dispersion modeling to evaluate whether construction emissions from the Freeway Tunnel alternative would violate federal or state air quality standards even though the proposed freeway tunnel(s) would be much larger than five acres in size. The DEIR/S also should have analyzed the construction-related emissions from the other Project alternatives under this threshold. This omission alone constitutes a fatal flaw in the DEIR/S.

Although the DEIR/S fails to come to a determination regarding the significance of the Project's construction-related emissions, it nonetheless identifies some air quality mitigation measures. DEIR/S at 3.13-40 – 42. Yet, here too, the DEIR/S fails because it does not provide any information as to the expected effectiveness of these measures. *See Friends of Oroville,* 219 Cal.App.4th 1352, 1359-61. Consequently, it does not provide any evidentiary support for the DEIR/S's conclusion that the Project's construction-related air emissions would be less than significant.

Nor, as the Landrum & Brown Air Quality Report makes clear, does the DEIR/S propose the most effective measures to control construction-related emissions, particularly for the Freeway Tunnel alternative. For example, the DEIR/S identifies a very stringent measure (complying with Metro's Green Construction Policy) for the TSM/TDM, LRT, and BRT alternatives, but it does not require this same protective measure for the Freeway Tunnel alternative. *Id.* at 3.13-42. Metro's Green Construction Policy requires, among other things, all construction equipment greater than 50 horsepower to meet Tier 4 standards and be equipped with diesel particulate filters after January 1, 2015.[14] Yet the sole mitigation measure for reducing emissions from construction of the Freeway Tunnel alternative requires only compliance with Tier 3 standards. *Id.* at 3.13-41. The DEIR/S provides no explanation as to why the Freeway Tunnel alternatives would not be mitigated using the most stringent measures, especially since they would have greater emissions than the other alternatives. DEIR/S at 3.13-11. Indeed, according to Landrum & Brown, this less restrictive measure means that the NO_x emissions under the tunnel alternative would be reduced only by about 33 percent, as compared to a 90 percent reduction if the tunnel alternative were required to meet Tier 4 standards. Notably, the less restrictive measure would not reduce particulate emissions at

[14] Tier 4 standards are the most stringent.

all. The failure to require the most effective mitigation measures for these significant effects violates CEQA. Pub. Res. Code §§ 21002, 21081.

2. The DEIR/S's Analysis of Operation-Related Air Quality Impacts Is Flawed, and the Proposed Mitigation Insufficient.

(a) The DEIR/S Underestimates the Project's Increase in Operation-Related Regional Emissions.

As discussed below, the DEIR/S underestimates predicted traffic volumes because it fails to take into account all of the Freeway Tunnel alternative's induced travel demand beyond the first 10 years of operation. It also greatly understates increased delay where the Freeway Tunnel would create new bottlenecks or make existing bottlenecks worse. Inasmuch as the Project's air quality emissions are dependent on the transportation assumptions, any underestimation of vehicular trips and/or vehicle delay necessarily results in an underestimation of vehicular emissions. Moreover, as the Landrum & Brown Air Quality Report explains, the DEIR/S also underestimates vehicular emissions because it overestimates the increase in vehicle speeds that would occur as a result of the Freeway Tunnel.

Because Metro's inaccurate modeling leads to flawed conclusions regarding the severity of these impacts, the EIR violates both CEQA and NEPA. *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 829 (EIR must provide accurate information regarding "how adverse the adverse impact will be"); *see* 40 C.F.R. § 1502.24 ("Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements"); *Natural Resources Defense Council v. U.S. Forest Service* (9th Cir. 2005) 421 F.3d 797, 812-813 (EIS's erroneous calculations based on improper assumptions subverted NEPA's purpose and presented a "misleading…evaluation of alternatives").

(b) The DEIR/S Fails to Adequately Analyze or Mitigate Impacts Relating to Particulate Hotspots.

It is critical that the DEIR/S conduct an adequate analysis of particulate impacts given the well documented serious health risks associated with $PM_{2.5}$ exposure. In its final rule designating attainment and non-attainment of $PM_{2.5}$ standards, the U.S. EPA noted the "significant relationship between $PM_{2.5}$ levels and premature mortality, aggravation of respiratory and cardiovascular disease . . . , lung disease, decreased lung

function, asthma attacks, and certain cardiovascular problems such as heart attacks and cardiac arrhythmia," particularly among "older adults, people with heart and lung disease, and children." *See generally* Air Quality Designations and Classifications for the Fine Particles ($PM_{2.5}$) National Ambient Air Quality Standards, 70 Fed. Reg. 944, 945 (Jan. 5, 2005) [Vol. 2, Ex. 28-e]; s*ee also* Assessment and Mitigation of Air Pollutant Health Effects from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review, Rajiv Bhatia and Thomas Rivard, May 6, 2008, attached as Exhibit 17. The study by Bhatia and Rivard, in particular, elaborates on the health effects of particulate matter exposure and the epidemiology of roadway proximity health effects, providing guidance for assessing these effects.

The purpose of a particulate hotspot analysis, such as the one the DEIR/S purports to undertake, is to determine whether a project would: (a) conflict with or obstruct implementation of an applicable air quality plan, or (b) violate the ambient air quality standard or contribute substantially to an existing or projected air quality violation. DEIR/S at 3.13-19. In order to determine if a project would result in exceedances of air quality standards, the DEIR/S must describe existing air pollutant concentrations, identify the increase in emission concentrations from the Project, and then model the Project-related concentrations together with ambient concentrations.

Unfortunately, the DEIR/S's particulate hotspot analysis is flawed. Critical analytical details are missing altogether, while others are clearly erroneous. First, the DEIR/S does not describe the existing environmental setting. For example, the DEIR/S does not appear to take into account existing sources of particulate emissions in the Project area. Data from areas immediately adjacent to the proposed alignment are necessary to predict local impacts.

Second, the DEIR/S does not identify any of the technical data and/or assumptions that were used to conduct the quantitative particulate hotspot dispersion modeling. The document does not provide any specific input parameters such as specific roadways included in the model and their traffic volumes, speeds and emission rates.

Third, the DEIR/S appears to rely on faulty methodology for evaluating the Project's particulate concentrations. While the document never actually discloses its particulate hot spot methodology, the technical report for the DEIR/S's health risk assessment ("HRA"), provides a reasonable amount of documentation of the input parameters used for the mobile source air toxics ("MSAT") dispersion modeling. It is likely that the DEIR/S preparers used the same methodology and assumptions for the

particulate hotspot analysis as they did for the HRA. According to Landrum & Brown, the methodology and data used for the MSAT dispersion modeling show that the consultants used average daily traffic volumes and speeds in the modeling. Yet, as discussed more fully below, the use of average data does not properly account for diurnal variations in traffic characteristics, e.g., increased emissions during peak commute hours. Consequently, this averaging underestimates the Project's particulate emissions and concentrations.

Fourth, the DEIR/S fails to provide any thresholds of significance for determining whether the Project's particulate concentrations would be significant. How high would the Project's particulate concentrations have to be in order to exceed the state or federal ambient air quality standards? The DEIR/S never identifies this critical numerical threshold. In fact, the DEIR/S never explains the results of its "analysis" at all. While the document identifies PM_{10} and $PM_{2.5}$ concentrations for each Project alternative in 2025 (*see* Tables 3.13.7, 8 and 9 at page 3.13-25), these values have no context other than indicating that concentrations would be less than the "no-build" alternatives. *Id.* CEQA is clear that the no-project alternative is not the baseline for determining whether the proposed project's environmental impacts may be significant. CEQA Guidelines § 15126.6. The DEIR/S should have identified a threshold of significance and then evaluated the Project's increase in particulate concentrations against a baseline of existing conditions.

Fifth, the DEIR/S asserts that it modeled particulate concentrations at thirteen freeway locations that are considered "areas that are potentially of air quality concern" (at 3.13-20), but the document never explains the effect the Project's increase in particulate pollution would have at these locations. This information is of critical importance. Members of the public who reside in homes or attend schools near these freeway locations must be informed as to whether they could be exposed to excessive particulate concentrations. In order to disclose the effects of the Freeway Tunnel alternative, the specific receptor locations must be presented graphically to show the particulate concentrations in each modeled location, along with some indication as to whether these concentrations result in particulate hotspots.

Sixth, the DEIR/S does not mention, let alone analyze, the Freeway Tunnel alternative's potential to exceed California's ambient air quality standards. The flawed analysis discussed above, relates only to the Project's potential to exceed the federal air quality standards. The South Coast Air Basin, which is the setting for the Project, is designated "nonattainment" of the State PM_{10} and $PM_{2.5}$ standards. DEIR/S at 3.13-7.

California's standards for particulate matter are more protective of public health – and therefore more stringent – than respective federal standards. *See* California Air Resources Board ("CARB"), "California Ambient Air Quality Standards" available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm.[15] Accordingly, it is critical that the DEIR/S analyze the Project's potential to violate the state standards.

For all of these reasons, the DEIR/S's analysis of particulate hotspots violates CEQA and NEPA by failing to accurately assess health impacts, thereby precluding Project approval.

3. The DEIR/S Fails to Adequately Analyze or Mitigate the Project's Health Risks.

(a) The DEIR/S Substantially Underestimates the Project's Health Risk Because the HRA Relied on Inappropriate Methodology.

As the Landrum & Brown Air Quality Report explains, the DEIR/S substantially underestimates the Project's cancer and chronic-non-cancer risks because the health risk assessment ("HRA") relied on flawed methodology. First, as with the DEIR/S's particulate hot spot analysis, the HRA's dispersion modelling utilized average variables, such as average daily trips and daily average speed, to characterize the Project's pollutant concentrations. In other words, the modeling assumed that each roadway link generated the exact same amount of pollutants each hour of the day. Thus, according to the DEIR/S, total daily emissions = average daily traffic volume X emission

[15] Ambient air quality standards ("AAQS") define the maximum amount of pollution that can be present in outdoor air without harm to the public's health. The Federal Clean Air Act requires the U.S. EPA to set ambient air quality standards for the nation. It also permits states to adopt additional or more protective air quality standards if needed. The California Legislature authorized CARB to set ambient air pollution standards for the state. Health & Safety Code section 39606. Accordingly, CARB has set standards for certain pollutants, such as particulate matter and ozone, which are more protective of public health than the respective federal standards. CARB has also set standards for some pollutants that are not addressed by federal standards

rate based on average speed. This approach is inaccurate, of course; in reality, emissions from a roadway source vary throughout the day as traffic volumes and speeds change.

A vehicle's travelling speed affects the amount of emissions it generates. However, emission rates are not linearly correlated with speed. For most pollutants, emissions per mile are greatest at low and high speeds and lower at medium speeds. Because emission rates and speed are not linearly correlated, multiplying the average traffic volume with an emission rate based on average speed does not result in the average emissions. This averaging improperly minimizes a project's emissions.

An accurate prediction of emissions thus requires modeling across time of year, day of week, and hour of the day. Here the DEIR/S's use of extremely simplified modeling inputs – a single hourly average based on the daily average – filtered out differences such as traffic volumes, speed and weather conditions. Consequently, the DEIR/S underestimates the Project's increase in mobile source air toxics ("MSAT") emissions and therefore understates the Project's potential to result in cancer and chronic-non-cancer risks.

The U.S. EPA's PM_{10} Hotspot Guidance identifies an appropriate methodology to model health risks (and particulate concentrations). EPA suggests that a health risk model use four different emission factors for each highway link, one each for the AM and PM peak periods, one for the midday period, and one for the overnight period. We can find no plausible explanation why the DEIR/S did not rely on the EPA approach. As the Landrum & Brown Air Quality Report explains, the traffic model used for the DEIR/S provides AM and PM peak period traffic volumes speeds as well as average daily volumes and speeds. Emission factors could easily have been developed based on these data. The agencies' decision to rely on a methodology that understates impacts violates CEQA. *Berkeley Keep Jets Over the Bay Com. v. Bd. of Port Cmrs.* (2001) 91 Cal.App.4th 1344 ("*Berkeley Keep Jets*").

Equally concerning, the DEIR/S fails to take into account revisions to the Air Toxics Hot Spots Program Risk Assessment Guidelines adopted by the Office of Environmental Health Hazard Assessment ("OEHHA") earlier this year. *See* Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, OEHHA, February 2015, attached as Exhibit 18. The revised guidelines recognize the Children's Environmental Health Protection Act of 1999 (Health and Safety Code Section 39606), which requires explicit consideration of infants and children in assessing risks from air toxics. *Id.* The HRA prepared for the SR 710 Project

should consider this guidance in order to ensure that risks from the Project are properly identified and mitigated.

(b) The DEIR/S Fails to Disclose the Project's Potential to Cause a Significant Increase in Cancer Risk, and Fails to Identify Any Mitigation.

The DEIR/S asserts that the Project would result in substantial regional benefits that will reduce health risks from exposure to mobile source air toxics ("MSATs") in the majority of the study area. DEIR/S at 4-8. The DEIR/S attributes this benefit to the Project: "The No Build Alternative and all the Build Alternatives would *cause* a net decrease of cancer risks compared to the 2012 existing condition everywhere in the study area." *Id.* (emphasis added). But the DEIR's claim is unsupported by evidence. In fact, evidence in the record overwhelmingly demonstrates that the Project—particularly the Freeway Tunnel alternative—would result in a significant increase in cancer risk.

The DEIR/S's technical appendix discloses that all of the freeway tunnel alternatives could cause a localized cancer increase due to the added vehicle emissions from the new freeway corridor and the roadways directly connected to it. Health Risk Assessment Appendix at page 3-8. The appendix identifies the particular tunnel alternative variants that would have the worst case localized impacts (dual-bore without toll tunnel variation) and the specific locations with the largest cancer impact (a narrow strip around the north and south tunnel portals and the adjacent interchanges). *Id.*, Chapter 3. Many of these locations would result in cancer increases that greatly exceed the SCAQMD's 10-in-1-million cancer risk significance threshold established in its Air Toxics Hotspot Rule (Rule 1401). *Id.* The appendix acknowledges that the increased cancer risk at certain locations would be a staggering 149 in 1 million. *Id.* at ES-4 and Table 3-4.

Given the Freeway Tunnel alternative's potential to greatly increase the risk of cancer in numerous locations, the DEIR/S's assertion that it would improve health is deeply misleading. MSATs are expected to decline substantially in the future – not as a result of building a new freeway-based tunnel, but due to stringent environmental regulations. EPA's 2007 rule, in particular, requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. DEIR/S at 3.13-31. Accordingly, the DEIR/S errs in giving the Project credit for these improvements. *See Neighbors for Smart Rail v. Exposition Metro Line Const. Auth.* (2013) 57 Cal.4th 439,

445, 457. In fact, without the Freeway Tunnel and the substantial VMT that will accompany it, the region's residents would likely be far healthier.

Furthermore, the lead agencies' decision to present the cancer risk information in the DEIR/S's technical appendix is wholly improper under CEQA. Essential information of this sort must be included the text of the EIR, not buried in some appendix.

Finally, the DEIR/S's failure to disclose the increased cancer risk associated with the Freeway Tunnel alternative as a significant impact is yet another fatal flaw. As a result of this error, the document fails entirely to identify mitigation measures capable of eliminating or offsetting these impacts, as required by CEQA and NEPA. CEQA Guidelines §§ 15121(a); 15123(b)(1); *see* 40 C.F.R. 1502.16(h) (EIS must discuss "[m]eans to mitigate adverse environmental impacts").

Because the DEIR/S misleads the public and decision-makers about the Freeway Tunnel's potential to increase cancer in the region, and identifies no mitigation for this impact, the document cannot support approval of the Freeway Tunnel alternative.

B. The DEIR/S Fails to Adequately Evaluate or Mitigate Impacts Related to Climate Change.

1. Analyzing Climate Change Impacts Is Required Under CEQA and NEPA.

The law is clear that lead agencies must thoroughly evaluate a project's impacts on climate change under CEQA. *See Communities for a Better Env't v. City of Richmond* (2010) 184 Cal. App. 4th 70, 89-91. In 2007, the state Legislature passed Senate Bill 97, which required the Governor's Office of Planning and Research to prepare guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions *as required by* [CEQA], including, but not limited to, effects associated with *transportation* or energy consumption." SB 97 (2007), codified as Pub. Res. Code § 21083.05 (emphasis added). Consistent with this mandate, the state Natural Resources Agency adopted revisions to the CEQA Guidelines that require lead agencies to determine the significance of a proposed project's greenhouse gas ("GHG") emissions. CEQA Guidelines § 15064.4.

Climate change is the classic example of a cumulative effects problem; emissions from numerous sources combine to create the most pressing environmental and societal problem of our time. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.* (9th Cir. 2008) 538 F.3d 1172, 1217 ("the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct."); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720 ("Perhaps the best example [of a cumulative impact] is air pollution, where thousands of relatively small sources of pollution cause serious a serious environmental health problem."). If an agency's analysis indicates that a proposed project will have a significant project-specific or cumulative impact on climate change, the agency must identify and adopt feasible mitigation measures to address this impact. CEQA Guidelines § 15126.4(c).

NEPA also requires an analysis of the Project's GHG emissions. *Ctr. for Biological Diversity*, 538 F.3d at 1217 (NEPA requires agencies to assess impacts of project on GHG emissions); *Earth Island Institute,* 351 F.3d at 1300 (NEPA requires that federal agencies "consider *every* significant aspect of the environmental impact of a proposed action . . . .") (emphasis added) (citations omitted). The President's Council on Environmental Quality has issued draft guidance on analyzing this issue under NEPA. *See* December 18, 2014, Revised Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, attached as Exhibit 19. This document recognizes that during the NEPA process, agencies should consider both "the potential effects of a proposed action on climate change as indicated by its GHG emissions" and "the implications of climate change for the environmental effects of a proposed action." *Id.* at FR 77824. Specifically, the proposed regulations require that agencies analyze a project's GHG emissions and consider reasonable mitigation measures and alternatives to lower the level of the potential GHG emissions. *See generally, id.* Agencies are not excused from analyzing impacts from GHG emissions just because these regulations are not yet in effect; instead, as the draft document states, the new regulations are "on par with the consideration of any other environmental effects and this guidance is designed to be implemented without requiring agencies to develop new NEPA implementing procedures." *Id.* at FR 77824. The draft document also urges agencies to make a determination as to whether emissions from a project are consistent with relevant emissions targets and reduction goals, and specifically references California's AB 32 as an example. *Id.* at FR 77826.

2. The DEIR/S's Perfunctory Climate Change Analysis Fails to Inform the Public and Decision-makers About the Freeway Tunnel Alternative's Greenhouse Gas Emissions.

The DEIR/S is seriously flawed because it trivializes the Project's contribution to climate change, particularly that of the Freeway Tunnel alternative. The DEIR/S labels impacts due to climate change as "speculative" and then fails to conduct an adequate analysis of these potential impacts. However, the Freeway Tunnel alternative's GHG emissions from construction activities, increased VMT, and energy use are far from speculative. As detailed below, the DEIR/S's failure to properly assess the Freeway Tunnel's significant impacts on global climate change, and to identify enforceable mitigation for them, is fatal.

The United States Supreme Court has noted that "[t]he harms associated with climate change are serious and well recognized." *Massachusetts v. EPA* (2007) 549 U.S. 497, 499. Reducing greenhouse gas emissions in order to limit these harms is one of the most urgent challenges of our time. In recognition of this urgency, in 2005, Governor Schwarzenegger's signed Executive Order S-3-05. The order established a long-term goal of reducing California's emissions to 80 percent below 1990 levels by 2050. The order also directed several state agencies (collectively known as the "Climate Action Team") to carry its goals forward. The following year, the Legislature enacted the Global Warming Solutions Act of 2006 ("AB 32"), codified at Health and Safety Code § 38500, *et seq*. By these authorities, California has committed to reducing emissions to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Most recently, Governor Brown took further action to meet this challenge by issuing a new executive order, B-30-15. It sets an interim target of 40 percent below 1990 levels by the year 2030. This order, like EO S-3-05, is binding on state agencies such as Caltrans.

The California Climate Action Team's 2009 Report to Governor Schwarzenegger details the science behind, and the environmental impacts of, global warming.[16] This report makes clear that the release of greenhouse gases into the

[16] *See* California Environmental Protection Agency, Climate Action Team Biennial Report to Governor Schwarzenegger and the Legislature, December 2010, available at http://www.climatechange.ca.gov/climate_action_team/reports/#2010. The entire Report is incorporated herein by reference.

atmosphere leads to global warming, which in turn leads to myriad environmental impacts. As the report explains, "[c]limate change poses serious risks to California's natural resources. California-specific impacts are expected to include changes in temperature, precipitation patterns, and water availability, as well as rising sea levels and altered coastal conditions."

Despite all of this—the scientific consensus, the potentially catastrophic impacts on the State, and California's well-founded commitment to reducing emissions—the DEIR/S's climate change analysis is perfunctory. It fails to determine a threshold of significance, it calculates only a portion of the GHG emissions for which the Project alternatives will be responsible, and then it ignores its obligation to determine whether the impact is significant. It thus fails to satisfy the most basic purpose of an EIR/EIS: to disclose to decision-makers and the public a project's significant environmental impacts. *See* Pub. Res. Code § 21061 ("The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect that a proposed project is likely to have on the environment"); 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.").

Having avoided its obligation to make a significance determination, as CEQA and NEPA require, the DEIR/S then fails to identify credible mitigation measures to reduce or avoid the Project's contributions to global warming. This approach, which ignores science and law, stands in stark contrast to the conscientious treatment of global warming impacts undertaken by other lead agencies throughout the state. The agencies must make substantial modifications to the DEIR/S's climate change analysis to achieve compliance with CEQA and NEPA.

3. The DEIR/S's Refusal to Make a Significance Determination Regarding the Project's Contribution to Climate Change Is Unlawful.

The DEIR/S contains no thresholds of significance for the Project's potential impacts on climate change. Instead, the DEIR/S states that "in the absence of further regulatory scientific information related to GHG emissions and CEQA significance, it is too speculative" to make a significance determination. DEIR/S at 4-102. This approach is unlawful, as the statute expressly requires a lead agency to determine if a project's impacts are significant. Pub. Res. Code § 21002.1(a) ("The purpose of an environmental impact report is to identify the significant effects on the

environment of a project. . . ."). Accordingly, the CEQA Guidelines require agencies to "make a good-faith effort . . . to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." CEQA Guidelines § 15064.4. The Guidelines also include a section entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." *Id.* There is nothing in CEQA that relieves a lead agency from its obligation to determine significant effects simply because the impact is related to a rapidly-evolving area of science and policy. *See Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1106-12 (CEQA does not allow impact analysis to be labeled too "speculative" based on lack of threshold). *See also* CEQA Guidelines § 15065 (entitled "*Mandatory* Findings of Significance") (emphasis added). Thus, there is no justification for the DEIR/S's failure to contain a significance finding for GHG emissions.

CEQA Guidelines section 15064.4(a)(1) & (2) provides two methods for making a significance determination related to GHG emissions. An agency may either:

> (1) use "a model or methodology to quantify greenhouse gas emissions resulting from a project . . . [that] it considers most appropriate provided it supports its decision with substantial evidence," or
>
> (2) "[r]ely on a qualitative analysis or performance based standard []."

The DEIR/S follows neither approach here, opting to make no significance determination at all. The Guidelines do not sanction such approach.

Determining whether a project may have a significant effect plays a critical role in the CEQA and NEPA processes, and this determination must be "based to the extent possible on scientific and factual data." CEQA Guideline § 15064(a) and (b). Accordingly, a significance threshold for greenhouse gases must reflect the grave threats posed by the cumulative impact of adding new sources of GHG emissions into an environment when deep reductions from existing emission levels are necessary to avert the worst consequences of global warming. *See Center for Biological Diversity*, 508 F.3d at 550 ("we cannot afford to ignore even modest contributions to global warming.").

Although the CEQA Guidelines do not prescribe a particular methodology for making the significance determination, other agencies and groups have established

methodologies, and their analysis may be useful for Caltrans. The California Air Pollution Control Officers Association ("CAPCOA")[17] has issued a "CEQA & Climate Change" white paper to assist lead agencies in analyzing greenhouse gas impacts under CEQA. *See* Exhibit 20. Noting that "the absence of an adopted threshold does not relieve the agency from the obligation to determine significance" of a project's impacts on climate change, CAPCOA explored various approaches to determining significance and then evaluated the effectiveness of each approach. *See* Exhibit 20. According to CAPCOA's analysis, the only two thresholds that are highly effective at reducing emissions and highly consistent with AB 32 and Executive Order S-3-05 are a threshold of zero or a quantitative threshold of 900-tons CO_2 Equivalent ("CO_2 eq.")[18]. *Id.* A zero threshold is preferable in light of ongoing scientific advances showing that global warming is more significant than originally anticipated. For example, even the ambitious emissions reduction targets set by Executive Order S-3-05 in 2005, which were consistent with contemporaneous science indicating that this level of reductions by developed countries would be sufficient to stabilize the climate, are now believed to be insufficient. Given the recent extreme losses in arctic sea ice, scientists at the National Snow and Ice Data Center have concluded that the observed changes in the arctic indicate that this feedback loop is now starting to take hold.[19]

Based on these and other recent climate change observations, leading scientists now agree that "humanity must aim for an even lower level of GHGs."[20] Thus, the scientific and factual data now support a threshold of significance of zero in order to

---

[17] CAPCOA is an association of air pollution control officers representing all local air quality agencies and air districts in California.

[18] Carbon dioxide equivalents (CO2 eq.) provide a universal standard of measurement against which the impacts of releasing different greenhouse gases can be evaluated. As the base unit, carbon dioxide's numeric value is 1.0 while other more potent greenhouse gases have a higher numeric value.

[19] *See* Oct. 3, 2006 press release by National Snow and Ice Data Center, available at: http://nsidc.org/news/newsroom/2006_seaiceminimum/20061003_pressrelease.html. This document is incorporated herein by reference.

[20] James Hansen et al., *Target Atmospheric CO_2: Where Should Humanity Aim?* 2 Open ATMOSPHERIC SCI. J. 217, 226 (2008).

ensure that new projects do not have a cumulatively significant impact on global warming. Consistent with this data, many EIRs have adopted a zero threshold of significance as the most scientifically supportable threshold. *See, e.g.*, San Francisco Metropolitan Transportation Commission, Transportation 2035 Plan DEIR, at 2.5-15, SCH # 2008022101 (project would have a significant impact if it resulted in an increase in CO_2 eq. emissions from on-road mobile sources compared to existing conditions); San Francisco Metropolitan Transportation Commission & Association of Bay Area Governments, Plan Bay Area 2040 DEIR, at 2.5-41, SCH # 2012062029 (project would have a potentially significant impact if it would result in a net increase in direct and indirect GHG emissions in 2040 when compared to existing conditions). These examples, and others, demonstrate that, contrary to this DEIR/S's assertion, it is feasible to establish thresholds of significance.

The Bay Area Air Quality Management District ("BAAQMD") has also adopted guidelines to establish thresholds for GHG emissions. *See* BAAQMD Air Quality Guidelines, excerpts attached as Exhibit 21. These thresholds establish 1,100 metric tons of CO_2 eq. as the standard for most new development, and n*o net increase* in emissions for transportation and other regional plans. *Id.* at pp. 2-1 to 2-4.

Although the DEIR/S fails to make a significance determination, it offers minimal, unsupported data purporting to demonstrate that the Project, including even the Freeway Tunnel alternative, would actually reduce GHG emissions. DEIR/S at 4-98 to 4-100. The DEIR/S preparers may have intended that these data show the Project would not result in significant impacts to climate change, yet the paltry analysis is insufficient for a true significance determination and, in any event, is faulty itself, as described below. Pub. Res. Code § 15064(f) (significance determination must "be based on substantial evidence in the record").

4. The DEIR/S's Claim That the Project Will Reduce Greenhouse Gas Emissions Is Flawed.

The DEIR/S concludes that all of the Project's build alternatives—including construction of 4.2 new miles of an eight-lane freeway—will actually *reduce* vehicle emissions, and therefore GHG emissions. DEIR/S at 4-98 to -99. This conclusion is contradicted by current transportation research and is also unsupported by substantial evidence in the record. As the DEIR/S acknowledges, total VMT will increase in the Project area as a result of all of the tunnel alternatives by as many 460,000 miles per day. *See* DEIR/S Transportation Technical Report Table 4-8 at pg., 4-15. Per

capita VMT also increases with all freeway tunnel alternatives. *Id.* These impacts directly contradict, or undermine, State and regional efforts to reduce GHG emissions, as the increase in VMT from operation of the Freeway Tunnel will lead to substantial increases in emissions.

The link between increased VMT and increased GHG emissions is well-established. Studies show how the nation's increase in VMT is projected to overwhelm planned improvements in vehicle efficiency, thus making reductions in GHG emissions impossible without concomitant reductions in VMT. *See* Growing Cooler: Evidence on Urban Development and Climate Change at 3, excerpts attached as Exhibit 22. Recognizing the nation's unsustainable growth in driving, the American Association of State Highway and Transportation Officials, representing state departments of transportation, has urged that the growth of VMT be cut in half. *Id.* Under these circumstances, the DEIR/S's contention that the Freeway Tunnel will result in reduced GHG emissions is simply untenable.

The DEIR/S attempts to circumvent the well-established link between increased VMT and increased GHG emissions by concluding that purported reductions in congestion resulting from the Project will reduce the amount of fuel that vehicles waste in stop-and-go traffic, leading to reduced emissions of climate-warming gases from cars and trucks. DEIR/S at 4-98. Yet, as the attached Sightline Institute article explains, this claim – which is frequently used by proponents of road-building – is mistaken. *See* "Increases in Greenhouse-gas Emissions From Highway-widening Projects," Sightline Institute, October 2007, attached as Exhibit 23. In fact, under almost any set of plausible assumptions, increasing highway capacity in a congested urban area will substantially *increase* long-term GHG emissions. *Id.* Over the short term—perhaps 5 to 10 years after new lanes are opened to traffic—the DEIR/S's conclusion may find some support. But the document's prediction of congestion reduction fails over the long term. *See* Nelson Nygaard Report. Considering the full increase in emissions from highway construction and additional VMT, experts at Sightline conclude that adding one mile of new highway lane will increase CO_2 eq. emissions by more than 100,000 tons over 50 years. *Id.*

This research is corroborated by the Surface Transportation Policy Project ("STPP"). The STPP cites a growing body of research showing that, in the long run, wider highways actually create additional traffic, above and beyond what can be attributed to population increases and economic growth. *See* Surface Transportation Policy Project, Build It and They'll Come, attached as Exhibit 24. According to the STPP, 100 percent of additional VMT in Los Angeles County, and 72.6 percent of

additional VMT in San Diego County, is attributable to "induced traffic." *Id.* This means that increases in highway capacity actually induces additional traffic—it does not simply "accommodate" existing or predicted traffic.

CARB has also now weighed in on the relationship between increases in highway capacity, induced travel and increased GHG emissions. In its recent report entitled "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions," CARB further confirms that increased capacity induces additional VMT." *See* Exhibit 7 at 3. CARB attributes this phenomenon to the basic economic principles of supply and demand: adding capacity decreases travel time, in effect lowering the "price" of driving; when prices go down, the quantity of driving goes up (Noland and Lem, 2002). *Id.* As CARB explains, "[a]ny induced travel that occurs reduces the effectiveness of capacity expansion as a strategy for alleviating traffic congestion and offsets any reductions in GHG emissions that would result from reduced congestion." *Id.* at 2.

Accordingly, while agencies generally have discretion to choose appropriate methodological approaches under CEQA and NEPA, the DEIR/S appears to ignore mounting evidence that building highway capacity induces traffic, thereby increasing emissions. As the Nelson Nygaard Report on transportation explains, the DEIR/S's traffic demand model does not disclose the assumptions it uses to calculate induced demand and likely understates true induced demand. Furthermore, the demand model inaccurately forecasts traffic volumes on a segment-by-segment basis, meaning that it cannot be trusted to accurately estimate induced travel. *See* Nelson Nygaard Report. Moreover, the DEIR/S analyzes traffic demand only through 2035—that is, during the short-term window when congestion may actually be reduced. It does not analyze impacts during the period following 2035 when the purported efficiency gains, if any, can be expected to dissipate as a result of induced demand. *Id.*

A third-party audit of Caltrans recently conducted by the State Smart Transportation Initiative specifically faulted Caltrans' approach to induced demand, finding that "the department has not come to grips with the reality of induced traffic." *See* State Smart Transportation Initiative Assessment and Recommendations California Department of Transportation, January 2014 at iv, attached as Exhibit 25. The auditors concluded that Caltrans has almost completely ignored important recommendations (including for reducing VMT) contained in its own *Smart Mobility 2010* report. *Id.* at v. The audit went on to say that "despite a rich literature on induced demand, [Caltrans employees] frequently dismissed the phenomenon." *Id.* at 62. Given Caltrans' history of

ignoring or downplaying induced traffic, it is especially important that the DEIR/S support its prediction of induced demand with substantial evidence. It has failed to do so.

Finally, the DEIR/S's calculation of the Project's future emissions assumes that future regulatory controls will be imposed and will be effective in reducing tailpipe emissions. Landrum & Brown Air Quality Report (EMFAC2011 modeling included assumption that low carbon fuel standards would be implemented). The document thus compares future conditions to existing conditions without providing an independent measure of the Project's impacts. In this manner, the DEIR/S effectively assigns the *Project* credit for technological and regulatory advances that will occur regardless of its implementation. Because the DEIR/S thus fails to disclose the full climate impacts of the Project's increase in VMT, it violates CEQA and NEPA. Indeed, this Project serves as a cautionary example of how statewide improvements in emissions reductions due to regulatory measures—such as California's low carbon fuel standard—can be erased by increases in VMT.[21]

5. The DEIR/S Fails to Account for Non-Vehicular Sources of Greenhouse Gas Emissions From the Project.

The GHG emissions calculations presented in the Air Quality Assessment Report and the DEIR/S include only those emitted from vehicles driving within the study area, and fail to recognize that the Project will contribute to GHG emissions through other sources. For example, electricity generated for use by the Project will also create GHG emissions. *See* Landrum & Brown Air Quality Report. The Freeway Tunnel alternative would consume electricity for tunnel lighting and the tunnel ventilation system. This could result in considerable GHG emissions that should have been included in the Project's GHG emissions' inventory. The LRT would consume the most electricity of the build alternatives, as it relies on electrically-powered railcars. Failure to include the GHG emissions associated with electricity generation for the LRT alternative in the DEIR/S's reported GHG emissions is a particularly egregious omission.

---

[21] Experts have pointed out that increases in the amount of driving cause CO_2 emissions to rise despite technological advances, because the growth in driving overwhelms planned improvements in vehicle efficiency and fuel carbon content. Growing Cooler: Evidence on Urban Development and Climate Change at 13-14.

The Landrum & Brown Air Quality Report estimates that the electricity consumption required for propulsion of the railcars for the LRT alternative would generate between 65 and 170 metric tons of CO_2 eq. per day, equivalent to approximately 23,400 and 61,700 metric tons of CO_2 eq. per year. These figures do not include electricity consumed by other components of the LRT alternative, such as lighting and ventilation. The DEIR/S anticipates that the LRT alternative would reduce vehicular emissions by 20.0 metric tons per day in the 2025 opening year and by 2.2 metric tons per day in 2035. DEIR/S at 4-100. For the LRT alternative, this means that increased GHG emissions due to electrical generation would outweigh the anticipated reductions in GHG emissions from vehicular travel. It is irrelevant that some of the emissions from new electrical generation might come from outside the Project area; because GHG emissions are a cumulative global effect, the location of the sources of emissions is not important.

To evaluate the Project's actual effect on climate change, the DEIR/S must inventory the carbon emissions generated through non-vehicular means. This should include electricity generation for the Project, and also the manufacturing and lifecycle of the Project's building materials. Without an inventory of these additional emissions, the DEIR/S's analysis is incomplete, making the formulation of appropriate mitigation impossible.

6. The DEIR/S Must Calculate Greenhouse Gas Emissions From the Project Through 2050.

The DEIR/S calculates fuel consumption and related carbon emissions only to the year 2035. *See* DEIR/S at 4-100. This time horizon fails to provide the public with a meaningful assessment of the Project's long-term impacts. Indeed, the dual-bore freeway tunnel alternative is not scheduled to be completed until after 2020, and that is assuming that it stays on schedule. *Id.* (calculating emissions for the Freeway Tunnel alternative only from operational year 2025 onward). As a result, the document considers at most only 15 years' worth of emissions—a small fraction of the expected lifetime of the Project.[22] The DEIR/S should have analyzed GHG emissions through the year 2050.

[22] Although the DEIR/S's description of the Project is inexplicably silent on its expected lifetime, Metro's Cost Benefit Analysis for the Project states that the tunnels (footnote continued on next page)

Without examining impacts through the year 2050, the DEIR/S cannot provide meaningful assessment of the Project's long-term impacts, particularly those of the Freeway Tunnel. And there is reason to believe that these long-term impacts will be more significant than in the short term. As described previously, CARB's report states that increases in highway capacity induce travel, which, in turn reduces the effectiveness of capacity expansion as a strategy for alleviating traffic congestion. Exhibit 7 (Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions). This induced growth offsets any reductions in GHG emissions that would result from improved traffic flow. *Id.* Therefore, over the long term, increases in highway capacity will result in increased GHG emissions. This phenomenon is not captured by the DEIR/S's analysis, which looks, at most, only 15 years beyond the completion date of the dual-bore freeway tunnel alternative.

Tellingly, the DEIR/S does provide some evidence that emissions will increase after the 2035 end-date. The document states that in 2025, the GHG emissions from the Freeway Tunnel alternative (dual-bore freeway tunnel with tolls) would decline by 35.7 metric tons per day compared to existing conditions. DEIR/S at 4-100. In 2035, however, the Project's GHG emissions would creep upwards, resulting in a decline of only 24.2 metric tons per day compared to existing conditions. *Id.* (In fact, this decline in purported reductions is estimated to occur for all of the freeway alternatives.) In other words, the Freeway Tunnel alternative does not appear to result in *sustained* GHG emission reductions; the opposite appears to be true. But because the DEIR/S does not analyze 2050 conditions, the public has no way of knowing the extent of the Freeway Tunnel's long term increase in GHG emissions.

Analysis of the Project's impacts in 2050 is essential to determining if the Project achieves the long-term emissions reductions needed for climate stabilization and required by EO S-3-05, B-30-15, and AB 32. The statewide reduction goals set forth in EO S-3-05 and AB 32 call for reducing emissions levels to 80 percent below 1990 levels by the year 2050. Accordingly, 2050 is the appropriate planning horizon for analyzing the Project's emissions.

(footnote continued from previous page)
are expected to have a lifetime of 100 years. Analysis of Costs and Benefits for the State Route 710 North Study Alternatives at 2-8.

7. The DEIR/S Fails to Analyze the Project's Consistency with Applicable State Plans and Policies for Greenhouse Gas Emissions Reductions.

The DEIR/S fails to analyze the Project's consistency with the state's plans and policies for reducing GHG emissions. In fact, the document barely mentions these critical plans. It merely lists eight state bills and executive orders aimed at reducing GHG emissions in bullet-point format under the heading "Regulatory Setting – State" (DEIR/S at 4-95); it provides no discussion or analysis of whether the Project is consistent with these mandates, or whether it will help the State meet the reduction targets that they prescribe. The DEIR/S cannot ignore the question of whether its emissions trajectory is consistent with the trajectory embodied in EO S-3-05, the AB 32 Scoping Plan, and the First Update to the Scoping Plan. These are based on the scientific consensus that "the 2050 [reduction] target represents the level of greenhouse gas emissions that advanced economies must reach if the climate is to be stabilized in the latter half of the 21st century." Climate Change Scoping Plan: A Framework for Change (2008), p. 117, attached as Exhibit 26.[23]

California climate policy, as reflected in EO S-3-05, requires reducing GHG emissions to 80 percent below 1990 levels by 2050 so as to avoid catastrophic climate impacts. This Executive Order embodies the reductions that climate scientists have concluded are needed to provide a 50-50 chance of limiting global average temperature rise to 2°C above pre-industrial levels. The AB 32 Scoping Plan incorporates this goal, establishing a "trajectory" for reaching it over time. Exhibit 26 at 15 (Climate Change Scoping Plan: A Framework for Change (2008)).

In May 2014, CARB approved an Update to the Scoping Plan that examines California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. First Update to the Climate Change Scoping Plan: Building on the Framework, 2014, attached as Exhibit 27.[24] It also

---

[23] *See also* full scoping plan at http://www.arb.ca.gov/cc/scopingplan/document/ adopted_scoping_plan.pdf (referencing the 2050 reduction goals throughout the document).

[24] The full update is available at http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. Additionally, on April 29, 2015, Governor Brown signed Executive Order B-30-15, which sets an interim target in order to help state agencies achieve California's reductions goals. This interim target calls for reductions in GHG emissions to 40 percent below 1990 levels by the year 2030. EO B-30-15. This newest executive order confirms that GHG emissions reductions are a top state priority and that interim targets are crucial for achieving the 2050 reductions goal.

Meeting the statewide 2050 trajectory requires continuing and steady annual reductions in both total and per capita emissions. Climate Change Scoping Plan, p. ES-1. Because state policy aims to reduce GHG emissions over time, it is imperative that environmental review documents inform the public and decision-makers whether a project will advance or impede the state's reduction goals, and how. As the California Supreme Court has held, an agency "abuses its discretion if it exercises it in a manner that causes an EIR's analysis to be misleading or without informational value." *Neighbors for Smart Rail,* 57 Cal.4th at 445, 457.

Accordingly, the DEIR/S should have included a climate change analysis discussing whether the Project: (1) is consistent with these policies, (2) will help advance these policies, or (3) will impede the achievement of these policies. In addition, it should have used the EO S-3-05 trajectory as a threshold of significance in evaluating the Project's environmental impacts. *See Friends of Oroville,* 219 Cal.App.4th at 841 (AB 32's reduction targets were a proper threshold of significance in determining whether the Project's GHG emissions constituted a significant impact).

As lead agency, Caltrans must consider statewide climate policy. As the DEIR/S acknowledges, Caltrans' parent agency, the California State Transportation Agency, is a member of the Governor's Climate Action Team, which is charged with coordinating and carrying forward the state's climate goals established in EO S-3-05 and AB 32. Although the DEIR/S mentions this fact, the document provides no analysis of the Project's consistency with these goals.

8. The DEIR/S Fails to Include Enforceable, Feasible Measures to Mitigate or Offset the Project's Greenhouse Gas Impacts Even Though Such Measures Exist.

Had the DEIR/S established a threshold of significance, as required under CEQA and NEPA, and properly accounted for emissions generated by the Project, particularly the Freeway Tunnel, including emissions from induced traffic, it would have found that Project-generated emissions and cumulative emissions exceed all of the potential thresholds of significance discussed above. The Freeway Tunnel's contribution to climate change must therefore be considered significant.

The DEIR/S makes only a halfhearted attempt to identify feasible mitigation measures for the Project's climate change impacts. For construction-related GHG emissions, which it estimates could exceed 48,000 metric tons of CO_2 eq. for the Freeway Tunnel, the DEIR/S appears to suggest that it may rely on measures intended to mitigate the Project's air quality impacts. But the document is confusing on this point. A reader might infer this reliance from one line of a table in the Executive Summary, listing air quality mitigation measures AQ-1 through AQ-5 as the mitigation for construction-related climate impacts. DEIR/S at ES-40. Yet, the DEIR/S does not identify these measures anywhere in the two-paragraph discussion that constitutes the document's entire analysis of construction-related GHG emissions. *Id.* at 4-101. This confusing, contradictory approach is impermissible under CEQA. The DEIR/S must identify specific, enforceable mitigation measures and describe how, and to what extent, they are expected to avoid or minimize the Project's construction-related GHG impacts. Pub. Res. Code § 21081.6(b); CEQA Guidelines § 15126.4(a)(2).

Even more troublesome, the DEIR/S does not propose *any* mitigation for the Project's operational impacts to climate change. *See* DEIR/S at ES-40 ("No measures are proposed."). Instead, it suggests that the Project will incorporate three apparently voluntary reduction measures to reduce these impacts: (1) using landscaping; (2) recommending energy-efficient lighting; and (3) restricting idling time during lane-closure for construction. *Id.* at 4-103-104.

The proposed voluntary "reduction measures" are unlawful because they are hortatory rather than binding commitments. Under CEQA, mitigation measures must be "fully enforceable" through permit conditions, agreements, or other legally binding instruments. Pub. Res. Code § 21081.6(b); CEQA Guidelines § 15126.4(a)(2). Similarly, CEQA and NEPA require that any proposed mitigation must provide assurance

that such implementation will in fact occur. *Anderson First Coalition v. City of Anderson* (2005)130 Cal.App.4th 1173, 1186-87; *Fed'n of Hillside & Canyon Ass'ns v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261; *South Fork Band Council of W. Shoshone of Nevada,* 588 F.3d at 727 (NEPA requires discussion of whether mitigation will actually be effective). Moreover, a conclusion that a measure will be effective in mitigating an impact must be supported by substantial evidence—evidence that is lacking here. *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1115-18; *see also San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984)151 Cal.App.3d 61,79 (measures must not be so vague that it is impossible to gauge their effectiveness). The DEIR/S's proposed mitigation does not come close to meeting these standards.

The DEIR/S's paltry selection of mitigation measures is puzzling, as there is an impressive array of obvious measures that could actually reduce the Project's GHG emissions. Numerous mitigation measures are detailed in Appendix B and C to the 2008 CAPCOA report, attached as Exhibit 20, and the SR 710 North DEIR/S must consider all feasible, applicable measures therein. Most importantly, it must consider the following sampling:

- Requiring that off-road diesel-powered vehicles used for construction be new low-emission vehicles or use retrofit emission control devices such as diesel oxidation catalysts and diesel particulate filters verified by CARB.

- Requiring the Project to generate all or a portion of its own power through alternative means, such as photovoltaic arrays.

- Requiring use of a catalyzed diesel particulate filter on both new and existing diesel engines (because black carbon is a component of diesel particulate matter, strategies that reduce particulate matter will also reduce black carbon).

- Minimizing and recycling construction-related waste.

- Using salvaged and recycled-content materials for hard surfaces and non-plant landscaping materials.

- Maximizing water conservation measures in landscaping, using drought-tolerant plants in lieu of turf, planting shade trees.

- Landscaping to preserve natural vegetation and maintain watershed integrity.

- Utilizing the combination of construction materials with the lowest carbon footprint.

- Requiring the use of "cool pavement" that reflects more solar energy. Such measures, which can markedly reduce heat islands, have been used effectively in California and elsewhere. In fact, new building standards in California, called "CalGreen", will require use of such pavement in certain instances. *See* http://www.arb.ca.gov/research/seminars/gilbert/gilbert.pdf for a complete description of cool pavement issues, technology and use.

All of these measures would result in direct reductions in GHG emissions that would otherwise be attributable to the Project. In addition, through a combination of other on-site and off-site measures, the agencies could require all aspects of the Project to be "carbon neutral." An important aspect of such mitigation would be the adoption of an off-set requirement for any reductions that could not be achieved directly. CEQA and NEPA specifically envision such offsets for the mitigation of GHG emissions. CEQA Guidelines § 15126.4(c)(3) ("Measures to mitigate the significant effects of greenhouse gas emissions may include . . . [o]ff-site measures, including offsets that are not otherwise required"); December 18, 2014, Revised Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, attached as Exhibit 19 at FR 77828. Emissions could be offset either through financial contributions to sustainable energy projects or through the purchase of carbon credits. Such programs are increasingly common and thus raise no issue of infeasibility.

In sum, development of the Project, specifically the Freeway Tunnel, will make it more difficult for the State to meet its commitments to reduce GHG emissions. To comply with applicable law, the DEIR/S was required to, but did not, include: (1) a complete and adequate inventory of the Project's greenhouse gas emissions, including those from induced traffic; (2) a significance determination regarding the Project's cumulative climate impacts; (3) an analysis of the Project's consistency with state climate policy; and (4) a thorough and quantitative analysis of mitigation measures to reduce impacts. The agencies cannot lawfully approve the Project in the absence of this analysis.

C. The DEIR/S's Analysis of and Mitigation for the Project's Impacts on Transportation Are Inadequate.

1. The DEIR/S's Traffic Analysis Does Not Adequately Analyze the Freeway Tunnel Alternative's Traffic Impacts.

The DEIR/S fails to disclose the traffic impacts that would actually occur as a result of the Freeway Tunnel alternative. The DEIR/S demonstrates that rather than resolve regional traffic congestion, the Freeway Tunnel alternative would cause bottlenecks to shift between locations. Yet, as the Nelson Nygaard Report explains, the EIR/S's travel demand model is incapable of properly analyzing how these bottlenecks function.

Numerous segments along the I-10, SR 134, I-210, I-5 and I-710 would operate at Level of Service (LOS) F in 2035 under the Freeway Tunnel alternative. *See* Nelson Nygaard Report, Figure 7. This means that the modeled demand is far greater than the traffic volume that can actually travel across these freeway segments. When demand exceeds capacity, the *Highway Capacity Manual* requires that the excess volume "spill over into adjacent upstream segments" and be accumulated unless demand drops enough that the bottleneck can clear. This phenomenon is referred to as "spillback." Unfortunately, the EIR/S model does not account for this spillback. Instead, it mistakenly assumes that all modeled vehicles will get through the bottleneck. If the DEIR/S's traffic demand forecast had been accurate, it would have shown that traffic begins spilling back at 7 a.m. and the queue gets longer and longer during the day, eventually reaching 3 hours in length. It would take much longer than 3 hours for such a queue to clear because vehicles would continue to arrive after 7 p.m.

The DEIR/S's failure to recognize the potential for this extensive traffic congestion is a serious flaw. As a case in point, in the a.m. peak period under the No Build alternative, the northbound section of I-710 at I-10 is modeled as the 280th most congested freeway segment in the greater Los Angeles region. In the Dual-Bore Tunnel alternative, this segment moves up the list 256 places to become the 24th most congested freeway segment in the region. Nevertheless, the DEIR/S assumes the increase in travel

time on this segment is only one minute relative to the No Build alternative. Clearly, a sizeable traffic bottleneck produces more than one minute of delay.[25]

This flaw in the DEIR/S's travel demand model calls into question the accuracy of the entire traffic impact analysis. For example, it is highly unlikely that the DEIR/S accurately estimates the Project's induced travel. The flawed traffic analysis also implicates the DEIR/S's analysis of environmental impacts. The DEIR/S's estimates for criteria pollutants, air toxics, and greenhouse gas emissions, for example, are predicated on an accurate accounting of the volume and nature of traffic operations. The DEIR/S's failure to accurately document how the Freeway Tunnel alternative will affect regional traffic undermines the accuracy of these other analyses.

2. The DEIR/S Relies on an Artificially Constrained Study Area and Therefore Fails to Identify All of the Project's Transportation Impacts.

The DEIR/S chooses certain freeway segments near SR 710 to establish the study area over which to conduct a detailed transportation analysis. Yet, the study area does not include all of the potentially impacted highways and interchanges. Cars and trucks do not stop at arbitrary locations identified on a map; numerous vehicles that will be affected by the Project will travel to and from destinations outside the study area. The California Supreme Court emphasized that an EIR may not ignore a project's regional impacts, including those occurring outside of its borders; on the contrary, a regional perspective is required." *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 575. Rather, an EIR must analyze environmental impacts over the entire area where one might reasonably expect these impacts to occur. *See Kings County Farm Bureau,* 221 Cal.App.3d at 721-23. This principle stems from the requirement that an EIR analyze all significant or potentially significant environmental impacts. Pub. Res.

---

[25] In reality, a queue of more than 3 hours may never happen because travelers would likely adjust their travel to avoid the extreme bottleneck. Yet, even if travelers adjust their behavior to avoid the bottleneck, the congestion would just be transferred elsewhere. Accordingly, the DEIR/S erred in omitting reference to the extensive traffic congestion resulting from the Freeway Tunnel alternatives. Analyzing the potential for a 3-hour queue would have more accurately portrayed the Freeway Tunnel alternatives' impact than the DEIR/S's rosy assessment does.

Code §§ 21061, 21068. Similarly, NEPA requires that an EIS fully discuss the foreseeable cumulative impacts of the action on surrounding areas. *Earth Island Institute,* 351 F.3d 1291 (9th Cir. 2003) (EIS for timber sale was inadequate where it failed to consider impacts on owl species in neighboring national forest); *see also* 40 C.F.R. § 1508.25(c) (requiring agencies to consider direct, indirect, and cumulative impacts).

Here, as the Nelson Nygaard Report explains, the Freeway Tunnel alternative will significantly worsen congestion at several locations, yet the DEIR/S fails to evaluate these areas. For example, project-related traffic volumes under the Freeway Tunnel alternative will be heavy on I-210 from SR 710 to I-5, but the DEIR/S does not analyze transportation impacts any further north than La Cañada Flintridge. The DEIR/S also omits an analysis of the Freeway Tunnel's impact on I-5 north of I-210 and the I-210/I-5 interchange. It also fails to examine the effects on SR-710 south of SR 60, which means that it ignores effects on the SR 710/I-10 interchange. Based on the volume of traffic at all of these locations, the Freeway Tunnel's impacts are likely to be significant.

Certain locations just beyond the DEIR/S study area's boundaries have the highest concentrations of truck accidents per mile annually in Los Angeles County and the Inland Empire. *See* "California Commute -- 4 stretches of freeways tally most big rig crashes per mile annually," Los Angeles Times, June 2, 2015, attached as Exhibit 28. In its latest analysis of California Highway Patrol data, SCAG identified the following freeways sections as having the highest concentrations of truck crashes per mile annually: SR 710 at the SR 60 interchange with 7.2 accidents and the I-5 between the 710 and the 10 with 6.6 crashes. *Id.* The Freeway Tunnel alternative has the potential to worsen traffic congestion in these locations. However, because the DEIR/S does not include these locations in its study area, it does not analyze the potential for the Freeway Tunnel alternative's increase in congestion to contribute to big rig accidents.

In short, the DEIR/S should have analyzed a study area that includes all of the freeways and interchanges that will experience increased traffic congestion as a result of the Freeway Tunnel alternative. The absence of this analysis is a serious omission, precluding any agency action on the Project.

3. The DEIR/S Fails to Mitigate Numerous Significant Transportation Impacts Due to Operation of the Project.

While the DEIR/S identifies intersections and freeway segments that would be significantly impacted by the Project, the document admits that the measures that would mitigate the impacts at these locations are not recommended for implementation. For example, the Freeway Tunnel alternative would result in an additional 2,500 vehicles per hour (the level of service ("LOS") would decline from C to F) in the AM peak hour and 2,700 vehicles per hour (LOS would decline from B to E) in the PM peak hour on I-710 northbound between the I-10 off-ramp and the eastbound I-10 on-ramp. DEIR/S at 3.5-52 (under the dual-bore operational variation: no tolls). The DEIR/S identifies a mitigation measure (adding a lane between the I-10 off-ramp and the eastbound I-10 on-ramp), but this roadway improvement is not recommended for implementation. *Id.*

In fact, each freeway tunnel alternative would result in significant transportation impacts that remain unmitigated. For example, under the "single bore operational variation: with tolls and no trucks alternative", the 4 intersections and 11 freeway segments that would be significantly impacted as a result of the Project receive no mitigation. DEIR/S at 3.5-42; 3.5-48 to -49. CEQA does not permit this approach. When an EIR makes a finding of significant environmental harm from a project, as it does here, CEQA requires the lead public agency to adopt all feasible mitigation measures to lessen that harm, or to adopt a feasible alternative that will do less environmental damage. Pub. Res. Code, §§ 21002, 21081. Here, the DEIR/S fails to provide substantial evidence that all feasible mitigation has even been identified. Certainly, the agencies could have made some attempt to alleviate the traffic congestion at intersections and along freeways through measures that do not require widening freeways or adding intersection and arterial capacity. For example, the agencies could have evaluated meeting travel needs by funding increases in local and regional transit service. The agencies' failure to identify such measures, or other effective mitigation, violates CEQA.

Finally, notwithstanding the agencies' refusal to mitigate the significant impacts at these and dozens of other locations, the DEIR/S does not identify these impacts as significant and unavoidable. *See* DEIR/S at 4-85 (indicating that Project would have less than significant impact on transportation). This omission also violates CEQA and NEPA. *See* CEQA Guidelines § 15126.2(b); 42 U.S.C. § 4332(C)(ii) (requiring the EIS to discuss "any adverse environmental effects which cannot be avoided should the proposal be implemented").

4. The DEIR/S Fails to Analyze or Mitigate the Project's Construction-Related Transportation Impacts.

According to the DEIR/S, construction of the Freeway Tunnel alternative would occur over a five-year period. DEIR/S at 14. Construction of the LRT alternative would occur over a six-year period. *Id.* at 10. One would expect that, given the massive scale and prolonged duration of such construction, the DEIR/S would have comprehensively analyzed its extensive impacts on local and regional traffic. Project construction will generate traffic and alter traffic patterns from lane closures, delivery of materials, hauling of excavated material, and construction employees' commuting to/from the job site.

Despite these obvious effects, the DEIR/S includes only vague, cursory statements about construction-related transportation impacts. For example, it devotes one sentence to potential impacts in Alhambra, El Sereno, Monterey Park and Pasadena:

> The single-bore design variation of the Freeway Tunnel Alternative could result in delays at 5 locations and detours in 7 locations in Alhambra, El Sereno, and Monterey Park in the vicinity of the south tunnel portal, as well as delays at 8 locations and detours in 11 locations in Pasadena in the vicinity of the north tunnel portal. DEIR/S at 3.24-4.

The document never identifies the specific locations where these delays or detours would occur, or provides any estimate of their duration. In another instance, the DEIR/S states that "prior to the estimated time of construction, coordination would take place to ensure that the proposed closures and/or detours would be coordinated with other transportation improvement projects in the area that may be impacted and that potential traffic impacts during the construction of this [tunnel] alternative are adequately addressed." *Id.* at 3.24-5. These types of vague, generic statements fail to assure the public that the traffic impacts during construction will in fact be "adequately addressed."

The document's failure to supply this information is not a superficial deficiency. Recently, Metro undertook a major expansion project for the I-405. As the attached article explains, construction of that project wreaked havoc on travelers for several years:

> The four-turned–five-year, $1.1 billion project became a long-running nightmare of sudden ramp closures, poorly advertised by Metro and made all the worse by baffling detours that led drivers into the unfamiliar Bel Air Hills and Sherman Oaks hills, dead ends and unlit canyons. As Metro's closures and delays reached their height in 2013, L.A. Weekly encountered stranded motorists merely by following Metro's official detours — which in many cases were roads to nowhere. There is one crystal-clear improvement: With barricades gone and ramp closures less frequent, commuters are at least getting relief from problems Metro itself created — particularly its widely mocked detours, which proved indecipherable on its website and could not be explained by road crews.

See L.A. WEEKLY, *$1.1 Billion and Five Years Later, the 405 Congestion Relief Project Is a Fail* (March 4, 2015), attached as Exhibit 29.

Instead of analyzing the Project's five to six-year long construction-related transportation effects for the Freeway Tunnel and LRT alternatives, the DEIR/S looks to a future "Traffic Management Plan" ("TMP") to minimize the effects of construction activities. *Id.* But this deferral of mitigation violates CEQA. *See* CEQA Guidelines § 15126.4(a)(1)(B) ("Formulation of mitigation measures should not be deferred until some future time."); *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93. Indeed, the DEIR/S's approach to these transportation impacts is a "mere expression[] of hope" that the agencies will be able to devise a way around the problems created by construction of this massive Project. *Lincoln Place Tenants Ass'n v. City of Los Angeles* (2005) 130 Cal.App.4th 1112. CEQA requires more.

Importantly, a court may consider lead agencies' prior actions when it adjudicates the adequacy of mitigation measures. As the Supreme Court explained, "[b]ecause an EIR cannot be meaningfully considered in a vacuum devoid of reality, a project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR." *Laurel Heights,* 47 Cal.3d at 420. As one of the agencies routinely responsible for large-scale transportation projects, Metro has not demonstrated that it is able to protect travelers from the adverse effects of their construction projects. The agency's inability to

manage traffic during the I-405 Project construction period raises significant red flags for the effectiveness of the TMP.

In short, the DEIR/S's failure to provide a complete analysis of the Project's five to six-year long construction-related impacts for the Freeway Tunnel and LRT alternatives, or an actual mitigation plan, violates CEQA and NEPA.

D. The DEIR/S's Analysis of and Mitigation for the Project's Noise Impacts Are Inadequate.

The Project will generate two distinct categories of noise impacts: construction-related noise and permanent operational noise. Depending on the alternative selected, the latter category will include: traffic noise from the cars, trucks, motorcycles, and buses that will travel along the route, and/or noise from operation of the light rail trains. The World Health Organization recognizes noise, and in particular traffic noise, as a serious public health problem. *See, e.g.,* excerpts from Traffic Noise Reduction in Europe, attached as Exhibit 30. Given the magnitude of the Project's potential noise impacts, coupled with the effect that elevated noise levels has on public health, the DEIR/S should have rigorously examined this issue. Unfortunately, the document's analysis of noise impacts is riddled with errors and critical omissions. The Landrum & Brown Report Noise Report provides detailed comments on the shortcomings in the DEIR/S's noise analysis; a few of the most troubling errors are briefly described here.

1. The DEIR/S Fails to Clarify the Significance Thresholds It Uses for Analyzing Noise Impacts.

The CEQA Guidelines, Appendix G, state that a project will have a significant noise impact if it would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. CEQA requires that a determination of an impact's significance employ "careful judgment . . . based to the extent possible on scientific and factual data." CEQA Guidelines § 15064(b).

The first step in any discussion of an environmental impact is to select a threshold of significance. Here, the DEIR/S contains no thresholds of significance for the Project's noise impacts. Instead, the document simply reprints the questions contained in Appendix G of the CEQA Guidelines. DEIR/S at 4-69 to -70. But these questions do not alone constitute a threshold of significance. For instance, Appendix G, question XII(c)

asks whether the project would result in a "substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project." *Id.* In order to apply this standard, the DEIR/S must define "substantial permanent increase" and provide a numerical threshold upon which it bases its finding of no significance.

The DEIR/S preparers failed to take this crucial first step. This flaw in turn leads to a host of other failures: without a threshold, the DEIR/S cannot do its job. For example, the DEIR/S concludes that the Project would mitigate all significant noise impacts to less-than-significant levels (DEIR/S at 4-69 to 4-70), yet the document provides no standard by which to judge the impact's significance. Because the DEIR/S provides no standard or threshold on which to base its conclusion as to the Project's impacts, its conclusions regarding the significance of the Project's noise impacts are meaningless.

Moreover, the DEIR/S should have adopted thresholds that acknowledge that where existing ambient noise is already elevated, tolerance is very low for *any* increase in noise. Existing ambient noise at various receptors in the Project area is already in excess of 65 dBA, the typical outdoor residential noise level deemed acceptable by local municipalities. Here, the proper question is not the relative amount of noise resulting from the Project, but "whether any additional amount of [] noise should be considered significant . . ." in light of existing conditions. *Los Angeles Unified School District*, 58 Cal.App.4th at 1025-26 (emphasis added). Therefore, the DEIR/S erred in failing to evaluate whether residents who already experience elevated noise levels will be adversely affected by the Project.

2. The DEIR/S Does Not Adequately Analyze the Project's Construction-Related Noise Impacts.

Although construction of the Project would take five to six years for the Freeway Tunnel and LRT alternatives, respectively, and construction equipment would operate immediately adjacent to residences, businesses, open space, and parks, the DEIR/S never discusses the specific noise impacts of this massive construction. As anyone notices while walking next to a construction site, construction equipment can be extraordinarily noisy. The DEIR/S acknowledges, generally, that construction will involve a variety of noise-producing activities. Noise levels from construction trucks and equipment can be as high at 87 dBA at 50 feet. DEIR/S at 3.14-7 to 3.14-8. Noise generated from excavation activities, in particular, can reach 88 dBA at 50 feet. *Id.* And the DEIR/S notes that noise associated with pile-driving activities is estimated to

approach 93 dBA at 50 feet. *Id.* To put this in perspective, a noise level of approximately 88 dBA is as loud as the sound that a food blender makes at a distance of one meter. *Id.* at 3.14-2.

Given the potential for the ear-splitting noise levels associated with Project construction, the proximity of sensitive receptors, and the protracted construction schedule, the DEIR/S should have made at least some attempt to evaluate the Project's construction-related noise impacts. Instead, the DEIR/S merely presents generic information about typical noise levels for construction equipment and for construction activities, and speaks in hypothetical terms. For example, in discussing noise generated during excavation, grading, and facility construction, the document refers to "typical" construction equipment noise levels (DEIR/S at 3.14-8, 4-70); it provides no discussion or analysis of how or why these "typical" levels will be generated by the Project alternatives.

The DEIR/S is similarly vague and dismissive with respect to haul truck trips associated with construction. Although the dual-bore freeway tunnel design would require 360,000 truck trips, at a rate of 15 trucks per hour to export material from the excavation site, the document states that noise impacts associated with hauling for tunnel excavation activities is expected to be less than significant and no mitigation is required. *Id.* at 4-70. The only evidence it provides for this statement is the unsupported conclusion that the "total number of delivery trucks per day is also a very small percentage of the daily volumes on the haul route roadways." *Id.* As the attached Landrum & Brown Noise Report explains, this amounts to an average of 720 daily heavy truck passes per day, which, at 35 miles per hour, would generate the same level of noise as a typical arterial roadway with a daily traffic volume of 36,000 vehicles, and would increase the noise level along the roadway by 3 dB. Landrum & Brown Noise Report. The DEIR/S's analysis should present the traffic volumes and speeds on the roadways that will be carrying haul trucks and demonstrate, based on substantial evidence, that the additional truck trips will not have a significant impact on sensitive receptors along the haul routes.

The DEIR/S generic description of typical noise levels fails to inform decision-makers, let alone the affected public, of the noise events from *this particular Project*. Although the DEIR/S admits that a temporary noise increase would occur, the public is given no specific information as to the type, severity or even the duration of the construction-related noise impacts. Nor does the DEIR/S provide any assurance that sensitive receptors would be sufficiently protected during the Project's protracted

construction process, i.e., five to six years depending on the alternative selected. Omission of a detailed and specific construction noise analysis is particularly troubling given that the Federal Highway Administration requires that construction noise *must* be considered during the development of any transportation facility, and identifies the specific FHWA model that agencies should use to predict noise levels for highway construction projects.[26]

The DEIR/S's failure to include a useful and legally-sufficient analysis of construction-related noise impacts is a serious shortcoming. An adequate analysis would have described existing ambient noise levels at receptor locations, established appropriate significance thresholds for both interior and exterior noise levels to assess if the increase would be substantial, predicted noise levels during each phase of construction at each sensitive receiver location, compared noise levels during construction to the existing ambient noise levels, and reached a conclusion as to whether noise levels would substantially increase. This type of evaluation is necessarily complex, requiring a thorough description of the type, duration, amplitude, topological conditions, relationship of sensitive receptors to construction areas, construction techniques, construction phasing, and construction durations for each project alternative.

A conclusion regarding the significance of an environmental impact that is not based on an analysis of the relevant facts fails to fulfill CEQA's informational goal. *See Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182; *Citizens of Goleta Valley,* 52 Cal.3d at 568. Similarly, NEPA places upon an agency the "obligation to consider every significant aspect of the environmental impact of a proposed action." *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council* (1983) 462 U.S. 87, 97 (internal quotation omitted). The DEIR/S fails to fulfill these paramount statutory purposes both because it neglects to present all relevant facts relating to the Project's construction noise impacts and because its cursory conclusions are based upon no analysis. Without a detailed quantitative analysis of construction-related noise, it is not possible to determine the severity of these impacts or whether the proposed mitigation measures would effectively reduce such effects.

---

[26] *See* FHWA, Highway Traffic Noise Handbook (emphasis added) available at: http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/.

3. The DEIR/S Does Not Adequately Analyze the Project's Construction-Related Vibration Impacts.

The deficiencies in the DEIR/S's noise analysis extend beyond its failure to analyze construction-related noise impacts. The DEIR/S also inadequately analyzes construction-related vibration impacts resulting from construction of the tunnel alternatives. Construction-related vibration not only can contribute to high levels of annoyance, but also can cause substantial property damage. Even at levels below those that damage structures, the effects of ground-borne vibration include perceptible movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Federal Transit Administration Noise and Vibration Manual (2008)[27] at 7-1. The Project's tunnel alternatives require the use of up to four tunnel boring machines, which will operate underground continuously to excavate the tunnels by crushing rock into sediment. This will occur directly below residences and businesses in the Project area. Additionally, the DEIR/S proposes to use supply and muck trains to remove excavated material from the tunnel portals. These and other construction activities will result in ground-borne vibration affecting sensitive receptors within the Project area.

The DEIR/S is legally deficient because it does not include a comprehensive assessment of construction-related vibration impacts, and downplays their significance. The Federal Transit Administration ("FTA") has established criteria thresholds for annoyance from ground-borne vibration. The criteria are 72 VdB for frequent events (more than 70 events daily); 75 VdB for occasional events (between 30 and 70 events daily); and 80 VdB for infrequent events (fewer than 30 events daily). FTA Noise and Vibration Manual (2008) at 8-3. The DEIR/S's technical report on vibration impacts concludes that the tunnel boring machines used for the LRT and Freeway Tunnel alternatives may generate levels as high as 77 VdB at homes directly above the tunnel. Ground-borne Noise and Vibration Impacts Report at 6-1. It also states that these vibration levels would last two or three days, and possibly longer. *Id.* The tunnel boring machines will operate continuously, generating relatively constant levels of vibration while they are in operation. This activity means that residences and other sensitive receptors near the tunnel construction activities will experience nearly

[27] The manual is available at http://www.fta.dot.gov/12347_2233.html.

continuous ground-shaking day and night for up to three days, at levels above those permitted by the FTA criteria.

Therefore, the DEIR/S's own analysis indicates that ground-borne vibration levels would exceed the FTA's thresholds for annoyance. Instead of acknowledging the significance of this impact, however, the DEIR/S dismisses it as unimportant because it will not produce structural damage to residences and the impact will not be permanent. DEIR/S at 3.14-9 to -10. This approach is unlawful. The DEIR/S has no basis for concluding that the vibration impacts from the tunnel boring machines would be less than significant. *See* DEIR/S at 4-75. Any conclusion that an impact is less than significant must be supported with substantial evidence. Substantial evidence consists of "facts, a reasonable presumption predicated on fact, or expert opinion supported by fact," not "argument, speculation, unsubstantiated opinion or narrative." Pub. Res. Code § 21080(e)(1)-(2). Similarly, under NEPA, agencies may not rest on "bald conclusions," but must take a "hard look" at the environmental impacts of a project. *Maryland-Nat'l Capital Park & Planning Comm'n v. U.S. Postal Serv.* (D.C. Cir 1973) 487 F.2d 1029, 1040. Because the DEIR/S's conclusion of insignificance is premised on unsupported assumptions and bald conclusions, it falls far short of complying with this legal standard.

Moreover, the DEIR/S does not even analyze the potentially significant effects of blasting. The document acknowledges that blasting may occur if high strength bedrock is discovered in the cut-and-cover tunnel sections or in the excavation of cross passages. DEIR/S at 3.14-9; 3.24-13. However, rather than analyze the significance of any such blasting, it elects instead to defer analysis of controlled blasting methods until a future date. *Id.* This is not an acceptable approach. As the attached Landrum & Brown Noise Report explains, impacts from blasting can vary widely, and there are control measures available to minimize impacts. For example, several small blasts can perform the same work as one large blast but result in lower maximum vibration levels. Landrum & Brown Noise Report. The DEIR/S cannot simply raise the possibility of underground blasting in a densely-populated urban environment and decline to address its impacts and potential mitigation measures altogether. Instead, the document should indicate where blasting may be used, and how likely it is to occur. It should also develop mitigation measures, based on a quantitative performance standard, to ensure that any blasting would not result in significant vibration impacts.

4. The DEIR/S Does Not Adequately Analyze the Project's Operational Impacts.

The DEIR/S systematically understates or outright ignores the Project's operational noise impacts. First, as the Landrum & Brown Noise Report explains, while the DEIR/S focuses myopically on traffic noise level changes along numbered highways, it completely overlooks potential increases along arterial roadways in the Project area. *See* DEIR/S at 4-76 to -82 (Tables 4.3 through 4.7). But traffic volumes and noise levels along arterial roadways will be affected by the Project and significant impacts will likely occur along these roadways as well. The DEIR/S's analysis must be extended to arterial roadways to assess potential impacts along these roadways.

Second, the DEIR/S ignores multiple receptor locations that will experience significant noise impacts due to prevailing wind conditions. Studies have shown that noise can be affected by atmospheric conditions, including wind, which can cause noise to travel farther from its source. *See* Nick Ovenden, et al. *How the weather affects the scale of urban noise pollution* (2011), attached as Exhibit 31. The prevailing winds in the San Gabriel and La Crescenta/Cañada valleys are from the west, so the operational noise from increased traffic caused by the Project would carry in the direction of the foothills of the San Gabriel mountains. Thus, receptors in the following cities, some of which are outside the area studied in the DEIR/S, could be affected by operational noise from the Project: La Crescenta, La Cañada Flintridge, Altadena, Pasadena, Sierra Madre, Arcadia, Monrovia, Azuza and Glendale. The DEIR/S overlooks these potentially significant noise impacts.

Third, the DEIR/S completely ignores impacts to receptors for which Caltrans asserts mitigation is infeasible or unreasonable. The result is not only illogical, it is completely contrary to CEQA and NEPA's mandate to disclose significant environmental impacts, especially those that are significant and unavoidable. As explained in the Landrum & Brown Noise Report, the DEIR/S and the Noise Study Report reveal a large number of receptors where noise levels under the freeway tunnel alternatives would exceed federal criteria, but for which noise abatement measures were deemed unreasonable or infeasible. DEIR/S at 3.14-12. Many of these receptors, representing hundreds of dwelling units, would be subject to Project-related CNEL[28]

[28] CNEL stands for "Community Noise Equivalent Level" and is a weighted average sound level over a 24-hour period.

noise increases of 3 dB or greater over existing conditions and an exterior noise level greater than 65 dB under the Freeway Tunnel alternative. Landrum & Brown Noise Report. Although the DEIR/S fails to establish a threshold of significance for noise impacts, these increases exceed the typical CEQA significance threshold for highway noise impacts—and the document proposes no feasible mitigation to reduce these significant impacts to less than significant levels. The DEIR/S fails to acknowledge this significant and apparently unavoidable impact, a critical error.

Fourth, the DEIR/S improperly excludes analysis of operational noise impacts on interior noise levels. This is a key omission, since, for those receptors where exterior noise exposure will exceed 65 dB CNEL, interior noise levels could exceed 45 CNEL with closed windows, and could exceed 57 dB CNEL with the windows open. By comparison, the State of California's Title 24 building regulations establish 45 dB CNEL as the interior noise standard for new residential dwellings. Landrum & Brown Noise Report. What's more, the DEIR/S fails to consider second floor noise exposure, where noise barrier mitigation is often ineffective. The DEIR/S preparers should also have modeled these second floor noise exposures to those receptors located behind barriers that will be constructed to comply with FHWA criteria.

These serious errors in the DEIR/S's analysis of operational noise impacts render the document legally infirm.

5. The DEIR/S Fails to Evaluate Single Noise Events and Nighttime Noise.

Another significant oversight is the DEIR/S's failure to evaluate single noise events or nighttime noise. In fact, the noise analysis discusses the Project's potential impacts only in terms of Leq and CNEL, both of which are averaging metrics. Motor vehicle noise is characterized by a high number of individual events, which often create a higher sustained noise level in proximity to areas sensitive to noise exposure. The light rail trips associated with the LRT alternative will give rise to single noise events. And construction activities, including pile driving and possibly blasting, will also contribute to single noise events. The DEIR/S should have evaluated the effect that single noise events from traffic, light rail car trips, and construction activities will have on the communities in the Project area. Yet, rather than analyze how these single noise events will impact receptors, the DEIR/S focuses only on average noise.

Analyzing average noise impacts only has been rejected by California courts because impacted residents do not hear noise averages, but single events. *See Berkeley Keep Jets*, 91 Cal.App.4th at 1382. The DEIR/S must also analyze single event noise impacts. Single event noise levels have been shown to be likely to result in sleep disruption and speech interference, and heightened levels of stress and annoyance. Noting that "sound exposure level [SEL] has been found to be the most appropriate and useful descriptor for most types of single event sounds," the court in *Berkeley Keep Jets* held that the Port of Oakland's noise analysis was deficient for failing to consider these impacts. *Id.* Accordingly, the DEIR/S should have analyzed the impacts of single noise events on sleep, speech, stress and annoyance levels, and analyze adequate measures to mitigate those impacts.

Nor does the DEIR/S differentiate between daytime and nighttime noise. Noise can be far more intrusive during the evening and nighttime hours, when ambient noise levels are at their lowest and when people are sleeping. Since the surrounding area is quieter at these times, the masking effect of other noise does not screen the freeway noise. The DEIR/S should have taken into account this higher sensitivity to noise and evaluated how the increase in noise from the Project, including construction activities, would affect receptors during these sensitive time periods.

6. The Proposed Mitigation for Noise Impacts Is Inadequate.

The DEIR/S's proposed mitigation for construction-related noise impacts is legally inadequate. The DEIR/S concludes that implementation of Measures N-1 and N-2 would reduce construction noise impacts under the build alternatives to a less than significant level. DEIR/S at 4-70. These measures simply require compliance with the Caltrans Standard Specifications, the County Code, and city municipal codes, as applicable. *Id.* at 4-70, 3.14-16 to -17. This sweeping conclusion obscures the fact that the Freeway Tunnel alternative, for which construction-related impacts are arguably the greatest, is not subject to Measure N-2. *Id.* at 3.14-16 to -17 (Measure N-2 states that it "applies [only] to the Transportation System Management/Transportation Demand Management [TSM/TDM], Bus Rapid Transit [BRT] and Light Rail Transit [LRT] Alternatives"). Caltrans is thus free to conduct freeway tunnel construction activities unrestrained by the limits on such noise contained in local jurisdictions' municipal codes.

At any rate, merely requiring compliance with agency regulations does not conclusively indicate that a proposed project would not have a significant and adverse impact. In *Kings County Farm Bureau*, for example, the court found that the fact that the

EPA and the local air pollution control district had issued the necessary air emission permits for the construction of a coal-fired cogeneration plant did not nullify the CEQA requirement that the lead agency analyze the significant air quality impacts of the entire project. 221 Cal.App.3d at 692.

Furthermore, the DEIR/S does not consider whether compliance with local noise ordinances is actually feasible. An EIR must describe *feasible measures* that could minimize the project's significant adverse impacts. CEQA Guidelines § 15126.4(a)(1). The DEIR/S fails in this respect because it does not analyze the feasibility of compliance with local noise ordinances. In fact, if nighttime construction occurs near residential areas, compliance may not be feasible. For example, Pasadena Municipal Code 9.36.070 (A) reads: "No person shall operate any pile driver, power shovel, pneumatic hammer, derrick power hoist, forklift, cement mixer or any other similar construction equipment within a residential district or within a radius of 500 feet therefrom at any time other than as listed below. . ." Section 9.36.070 (B) reads: "No person shall perform any construction or repair work on buildings, structures or projects within a residential district or within a radius of 500 feet therefrom in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance at any time other than as listed below. . ." The allowable times are 7 am to 7 pm Monday through Friday and 8 am to 5 pm on Saturday. The only way to comply with the first provision is to forego nighttime and Sunday construction with the equipment listed. The DEIR/S must demonstrate that the anticipated construction activities can actually be completed without violating the applicable noise ordinances in order to conclude these measures will reduce construction noise impacts to a level of insignificance.

The proposed mitigation for construction-related vibration impacts is equally deficient. These impacts are addressed in Measure N-5, a sprawling, multi-part mitigation measure that proves to be largely empty when scrutinized. For example, Measure N-5 would require LRT construction activities to comply with applicable Federal Transit Administration ("FTA") criteria and guidelines and any local regulations related to ground-borne noise and vibration. It also would require the Freeway Tunnel alternative to comply with the Federal Highway Administration ("FHWA") and Caltrans guidelines and any applicable local regulations. DEIR/S at 3.14-17 to -18. However, the document provides no discussion of what these guidelines require, whether compliance with them is feasible, and whether and how such compliance would actually mitigate significant vibration impacts. Indeed, the requirement that construction activities comply

with "any applicable local regulations related to ground-borne noise and vibration" is a nonstarter as the document does not identify, let alone discuss, any such regulations.

Measure N-5 also requires the Project Engineer to develop specific property line vibration limits during final design for inclusion in the construction vibration specifications. DEIR/S at 3.14-18. The DEIR/S cannot defer the preparation of these vibration limits until after Project approval. Mitigation for the Project's noise impacts must be identified in this DEIR/S. *See* CEQA Guidelines § 15126.4(a)(1)(B). Similarly, the measure calls for a variety of future "control and minimization" measures that are "anticipated to be applied during construction." DEIR/S at 3.14-18. These include monitoring, a public notice and complaint resolution program, and the vague promise that the Project Engineer will "incorporate comprehensive construction vibration specifications in all construction bid documents." *Id.* These vague gestures do not come anywhere near meeting CEQA's exacting standards for mitigation. Agencies may defer mitigation only in very limited circumstances. *See* CEQA Guidelines § 15126.4(a)(1)(B). In those cases, the agency must commit itself to the mitigation, which must contain specific quantifiable performance criteria to ensure that it is effective. *Endangered Habitats League, Inc. v. Cnty. of Orange* (2005) 131 Cal. App. 4th 777, 793 (measure requiring acoustic analysis and reports to be submitted prior to permit approval inappropriately deferred mitigation). Here, because the DEIR/S failed to include such performance measures, it cannot justify the decision to defer the bulk of mitigation for vibration impacts until after Project approval.

In the absence of other feasible mitigation, and to ensure that no significant impacts to residents will occur, the DEIR/S should provide for compensation for residents who will be adversely affected by tunnel boring machines passing beneath their homes.

E. The DEIR/S's Analysis of and Mitigation for Geology/Soils Impacts Are Inadequate.

CEQA provides that a "significant effect on the environment" exists where, among other things, "[t]he environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." Pub. Res. Code § 21083(b)(3). The CEQA Guidelines further explain: "The EIR shall . . . analyze any significant environmental effects the project might cause by bringing development and people into the area affected." CEQA Guidelines § 15126.2(a). Accordingly, the DEIR/S must thoroughly study whether the seismic risks involved in constructing

tunnel(s) through a region of Los Angeles County that contains numerous earthquake fault zones would create significant risks to users and residents of the Project area.

Courts do not hesitate to scrutinize the adequacy of an agency's discussion of a project's potential seismic risks to the occupants of the project, and have held the agency's analysis to the same standards applicable to any other environmental impact analyzed under CEQA. *California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App.4th 227, 263-264 (applying Guidelines, § 15126.2 to analysis of geologic hazards to project); *People v. County of Kern* (1974) 39 Cal.App.3d 830, 836, 842 (EIR improperly failed to respond to comments that development was directly over active fault and adjacent to other active faults); *see also Bozung v. Local Agency Formation Corn.* (1975) 13 Cal.3d 263, 279-280, fn. 21 (observing that the CEQA Guidelines have long provided a project " 'may have a significant effect on the environment'" if it " '[c]ould expose people or structures to major geologic hazards'").

To further highlight the importance of a project's seismic impacts, the Legislature has provided that several types of projects that would otherwise be exempt from CEQA must undergo CEQA review if they are located near geologic features that present seismic risks.[29] Finally, as the DEIR/S acknowledges, the CEQA Appendix G checklist asks whether proposed projects would expose people or structures to the risks including fault rupture, seismic ground-shaking, and seismic related ground failure. CEQA Guidelines Appx. G, § VI. Given the Legislature's obvious concern that geologic and seismic impacts be analyzed thoroughly during the CEQA process to protect public health and safety, the DEIR/S's failure to do so here is troubling. As discussed below and in the attached report by Wilson Geosciences, Inc., the DEIR/S's analysis of geological and seismic impacts, including fault offset, ground-shaking, and ground settlement, is inadequate. Further, the DEIR/S has not shown that the mitigation it proposes for these impacts will actually reduce them to less than significant levels.

[29] *See* Pub. Res. Code §§ 21155.1(a)(6)(D); 21159.21(h)(4); 21159.22(b)(3); 21159.23(a)(2)(A); 21159.24(a)(3).

1. The DEIR/S Fails to Properly Analyze the Project's Seismic Impacts.

The Southern California region is particularly seismically active because of the influence of several earthquake fault systems resulting from the Pacific and North American plates. The Project area contains at least one active fault—the Raymond fault—defined by the State of California as a well-defined fault line that has exhibited surface displacement within the last 11,000 years. DEIR/S at 3.10-4. Additionally, two potentially active faults—the Eagle Rock and San Rafael faults—are present within the Project study area. *Id.* The DEIR/S acknowledges that an earthquake on the Raymond may result in ground rupture. *Id.* Nonetheless, both the Freeway Tunnel alternative and the LRT alternative designs (collectively, "tunnel alternatives") cross the Raymond and Eagle Rock faults, and the Freeway Tunnel alternative also crosses the San Rafael fault. *Id.* The regional faults may also cause strong ground-shaking to occur in the Project area. *Id.* Ground settlement is also a potential hazard of tunnel construction, due to the area's geological makeup. *Id.* at 3.10-10 to -12. It is against this backdrop of seismic activity that the DEIR/S must evaluate the impacts of the Project. Unfortunately, critical flaws in this analysis lead the DEIR/S to substantially understate these potential impacts.

2. The DEIR/S Fails to Support Its Analysis of Fault Offset Potential With Substantial Evidence.

A fault rupture offset is the ground movement along an earthquake fault, measured from one side of the fault to the other. The DEIR/S recognizes that "there is the potential for substantial adverse effects due to fault rupture" in the Project area. DEIR/S page 4-59. This is unsurprising, as all of the tunnel designs cross multiple mapped faults. *Id.* Despite the obvious need for careful analysis of these impacts in order to protect the public safety and welfare, the DEIR/S mistakenly relies on an outdated methodology to determine fault rupture offset, thereby underestimating the tunnel alternatives' threat to public safety.

Using outdated methodology, the DEIR/S's analysis of the tunnel alternatives' potential fault offset mischaracterizes the active fault rupture offset for the Raymond, Eagle Rock, and San Rafael faults at the point where the tunnels will cross. This error results in an inaccurate and understated estimation of the tunnel alternatives' risk to public safety. There are two principal methodologies for estimating the magnitude of fault ruptures. Of the two, the EIR/S preparers elected to use the older methodology, published over twenty years ago. *See* Preliminary Geotechnical Report, Appx. E at 11;

Wilson Geosciences Report. In doing so, they rejected a newer methodology that takes into account data obtained from more recent earthquakes.

The implications of this error are more than theoretical. The newer methodology predicts a fault offset more than *four times* the size of the offset prediction yielded by the older methodology for the Raymond fault.[30] In fact, the new methodology's fault offset prediction for the Raymond fault is nearly the same as the fault offset observed in the 1971 San Fernando earthquake at a very similar fault. Wilson Geosciences Report. By "selecting" and then designing for the lower offset prediction, the DEIR/S greatly underestimates the risk of damage to the tunnel(s) in the case of an earthquake. *Id.*

The DEIR/S's approach, which eschews current information in favor of outdated material, violates basic principles of CEQA. *Berkeley Keep Jets*, 91 Cal.App.4th at 1367 (EIR's use of scientifically outdated information caused it to fall short of a "reasoned and good faith effort to inform decision-makers and the public"). Moreover, an agency's reliance on inadequate data or assumptions amounts to a fundamental failure to take the "hard look" required by NEPA. *See, e.g., Natural Resources Defense Council,* 421 F.3d at 812 (EIS's analysis of economic impacts based on inaccurate models and flawed assumptions "subverted NEPA's purpose").

3. The DEIR/S Does Not Adequately Evaluate Impacts on the Tunnel Design From Ground-Shaking.

As with its approach to fault rupture, the DEIR/S falls short in addressing and evaluating the potential impact of near-source ground-shaking on the tunnel from an earthquake on the Raymond, Eagle Rock, and/or San Rafael faults. Seismic ground-shaking occurs during an earthquake, with the intensity of the shaking at a location depending on the location's distance from the earthquake epicenter. Ground-shaking, like fault rupture, can cause significant damage to structures within 50 feet of fault traces. Wilson Geosciences Report. Effects can include ground and grout cracking, and local permanent ground deformation.

---

[30] *See* Wilson Geosciences Report, explaining that Caltrans elected to use the "average" 0.5 meter Wells and Coppersmith (1994) predicted offset value instead of the "maximum" 2.2 meter Wesnousky (2008) value for the Raymond fault.

The DEIR/S does not evaluate the potential impact of the near-source ground-shaking hazard on the tunnel. Because this specific hazard is simply not addressed, there is no evidence that the recommended design measures, which are intended to accommodate vertical and lateral offset movements, would be sufficient to address near-source ground-shaking hazards. Wilson Geosciences Report (citing the DEIR/S's Preliminary Geotechnical Report, Appx. at 8). Furthermore, as described below, the DEIR/S fails to identify seismic design criteria for freeway tunnels that would account for the potential hazards associated with near-source ground-shaking. This omission undermines the effectiveness of any tunnel design measures it proposes.

4. The DEIR/S's Conclusion That Ground Settlement Will Not Occur Is Not Supported By Substantial Evidence.

The DEIR/S states that the Project's proposed excavation and tunneling could cause ground settlement and differential settlement immediately above and adjacent to the bored tunnel portion, and the portal and station excavations of the tunnel alternatives. DEIR/S at 3.10-10 to -12. Unless properly controlled, these activities could result in groundwater inflows and flowing ground conditions at the head of the tunnel excavation, which would lead to ground surface settlement. *Id.* Such groundwater inflow into excavation areas may require dewatering, which in turn could cause more ground settlement. Wilson Geosciences Report. Ground settlement can, of course, cause significant damage to existing surface structures.[31]

Many of the areas above and adjacent to the tunnel location are occupied with residences, roads, and businesses, which stand to be damaged in the event of ground settlement. Remarkably, however, the DEIR/S does not fully describe the impact of ground settlement on these existing structures and infrastructure. Instead, the DEIR/S defers proper alluvial deposit and groundwater characterization studies until after Project

[31] Seattle residents experienced this problem firsthand, in conjunction with the Alaskan Way Viaduct replacement project. Efforts to excavate a broken tunnel boring machine coincided with ground settlement that caused considerable damage to surface structures, including commercial office buildings. *See* NEW YORK TIMES, *In Seattle, a Sinking Feeling About a Troubled Tunnel* (Dec. 10, 2014), available at: http://www.nytimes.com/2014/12/10/us/in-seattle-a-sinking-feeling-about-a-troubled-tunnel.html?&_r=0.

approval. Yet, these studies are necessary at the outset, to determine whether the proposed excavation and tunneling techniques require adjustment or augmentation through mitigation. In particular, the studies would evaluate the specific groundwater conditions within the alluvial deposit portions of the tunnel alignments, including the densities, porosities, and transmissivities of the materials. Only with such evidence can the DEIR/S analyze the impacts of dewatering in these areas, and identify necessary design changes and mitigation.

In lieu of this required analysis, the DEIR/S speculates that use of certain construction techniques may limit ground settlement: "tunneling equipment and procedures as well as portal and station support methods are capable of controlling ground movements to limit surface settlements and in turn minimize damage to existing structures." DEIR/S at 3.10-11. However, according to Wilson Geosciences, the techniques identified in the document are *not* likely to be effective in reducing or avoiding most of the surface settlement. Wilson Geosciences Report. Although the DEIR/S provides a cursory discussion of ground improvement measures, such as chemical or cement grouting, its analysis is entirely perfunctory.

In order to evaluate properly the potential hazards associated with the soil settlement and the consequent impact on existing improvements, the DEIR/S must estimate: (1) the anticipated total and differential settlements, and (2) the tolerance limits of the existing improvements to such settlements. Wilson Geosciences Report. The document does neither. Accordingly, the DEIR/S lacks an adequate assessment of the potential adverse impacts on existing improvements from ground settlement associated with the Project, in violation of CEQA and NEPA.

5. The DEIR/S Fails to Identify and Justify Thresholds of Significance for Impacts to Geology and Soils.

The DEIR/S does not clearly identify the standards of significance it used to evaluate geological and seismic impacts, in violation of CEQA. In order to perform its function of identifying significant impacts, an EIR must first provide a reasonable discussion of the significance criteria the lead agency will be using to evaluate those impacts. This discussion must not only identify the specific standards of significance, but also provide a justification for why their use is appropriate. Here, the DEIR/S's mere recitation of generic questions from the CEQA Guidelines Appendix G does not serve this function. Guidelines § 15064(b) (CEQA recognizes that the significance of an activity may vary with the setting); *see Bowman v. City of Berkeley* (2004) 122

Cal.App.4th 572, 589 ("The Guidelines confirm that the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.") (internal quotation marks omitted). Given the unique size, scope, and technical complexity of the tunnel alternatives, it is not sufficient simply to incorporate the suggested standards from the CEQA Guidelines wholesale and without any explanation.

For example, the DEIR/S implies that state and local design standards, building codes, and regulations will ensure that no significant impacts result from Project implementation. DEIR/S at 4-59 (reliance on "compliance with applicable Caltrans, FHWA, Metro, and/or local jurisdiction seismic design standards for construction and operation"); *id.* (reliance on "compliance with applicable building and seismic design standards"). But the document does not actually identify these standards or codes, nor does it describe the specific requirements that they would impose. Further, the DEIR/S never explains how these design standards and codes will actually mitigate seismic impacts to a less than significant level. Notably, the Appendix G Checklist for geology and soils, section VI, does not even mention standards established by regional or local jurisdictions, in contrast to its treatment of noise impacts. *See* Appendix G Checklist § XII(a). Since tunnel construction of this scale is unprecedented in California, it is speculative to assert that state and local design standards will ensure that there will be no significant impacts. The problem is further amplified by the DEIR/S's failure to identify specific design standards for tunnel construction, as described below and in the Wilson Geosciences Report.

In short, the DEIR/S must develop meaningful significance criteria to guide its analysis of these impacts.

6. The DEIR/S Improperly Relies on Seismic Design Criteria Developed for Bridges to Mitigate Impacts to Tunnels.

Compounding its analytic errors, the DEIR/S relies on seismic design criteria for bridges rather than for tunnels. As the DEIR/S explains, Project "[s]tructures are designed using the Caltrans Seismic Design Criteria ("SDC"). The Caltrans SDC provides the minimum seismic requirements *for highway bridges* designed in California." DEIR/S at 3.10-1 (emphasis added); *see also* DEIR/S Preliminary Geotechnical Report, Appx. E at 15 ("No Caltrans seismic design criteria for tunnels are currently available."); Appx. F at 8 (same). As the Wilson Geosciences Report explains, the SDC does not even mention tunnels. The SDC refers readers to the "20-10 Fault Rupture Memo to

Designers," authored by Caltrans and updated in 2013, but that document does not address tunnels either. On the contrary, all of its fault rupture references are to "structures." We assume these "structures" are bridges inasmuch as the State Bridge Engineer prepared the memo.

This error is profound. The DEIR/S makes no attempt to justify or explain why the SDC developed for highway bridges would be effective for *tunnels*. It simply states that "to support the environmental documentation, it was agreed that the Caltrans seismic design criteria for an Ordinary Nonstandard facility will be used as the basis for seismic design of the Freeway Tunnel." DEIR/S Preliminary Geotechnical Report, Appx. F at 8. This is a far cry from the substantial evidence required under CEQA to support environmental determinations. *See* Pub. Res. Code §§ 21080(e)(1) ("substantial evidence includes fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact"), 21082.2(c). As the Wilson Geosciences Report confirms, there is no sound scientific basis for Caltrans' reliance on design criteria for bridges in analyzing and developing mitigation for impacts to massive, deeply seated tunnels like those proposed by the Project.

The agencies must not proceed with the Project until the DEIR/S identifies seismic design criteria for constructing tunnels. Wilson Geosciences Report. The DEIR/S should fully describe these standards and explain specifically why their use is appropriate for the proposed Freeway Tunnel alternatives (both the single- and dual-bore variations). This explanation should include examples of technical methods for determining the magnitude of acceptable fault offsets for the specific tunnel design. It should also specify how the design standards, such as use of cross-passages and other safety measures, would best prevent risks to tunnel users.

The agencies may counter that developing such standards would be time-consuming, impractical, or infeasible. But that is irrelevant. The unprecedented size and scope of the Project's Freeway Tunnel alternatives, coupled with their location in a seismically active area, demand that Caltrans develop and use design standards specifically intended for tunnels. *See Laurel Heights,* 47 Cal.3d at 399 ("We find no authority that exempts an agency form complying with the law, environmental or otherwise, merely because the agency's task may be difficult.").

7. The DEIR/S's Proposed Mitigation Measures Are Vague and Unsupported By Substantial Evidence That They Will Be Effective.

The mitigation proposed in the DEIR/S for the Project's impacts to geology and soils are inadequate and legally deficient. Most notably, the measures defer development of crucial plans and studies until after Project approval. For example, the DEIR/S contemplates, but does not include, the following plans and studies: a "comprehensive geologic and geotechnical investigation," "design-level geotechnical/baseline reports," and a "quality assurance/quality control (QA/QC) plan." DEIR/S at 3.10-22. This information must be part of the DEIR/S and be provided to the public before Project approval, not put off to an unknown future date. *See San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal. App. 4th 645, 670. Deferral is impermissible where an EIR calls for mitigation measures to be created based on future studies and/or describes mitigation in general terms and the agency does not commit itself to specific performance standards. *California Clean Energy Comm'n v. City of Woodland* (2014) 225 Cal.App.4th 173, 195 (agency could not rely on future report on urban decay with no standards for determining whether mitigation would be required).

The following measures do not commit Caltrans to specific performance standards and cannot therefore constitute legally adequate mitigation:

- Mitigation Measure **GEO-1** states that during preliminary and final design, a comprehensive geologic and geotechnical investigation will be conducted and design level geotechnical/baseline reports will be prepared. This measure defers investigation and preparation of key reports until an unspecified later date, and it is not clear at which stage of project construction and design these reports will issue. Furthermore, the design recommendations that it will purportedly contain for seismic hazards and for geology related constraints should be identified up front.

- Mitigation Measure **GEO-2** states that the Resident Engineer will maintain a quality assurance/quality control (QA/QC) plan during construction and submit "weekly reports" to Caltrans or Metro during Project construction.

- Mitigation Measure **GEO-3** states that the Project Engineer will "make sure" various measures are included in the comprehensive geologic and geotechnical investigation and the design-level geotechnical/baseline report

and the project design and specifications. For example, "[a] fault crossing design will be evaluated to be able to accommodate the expected fault offset, maintaining the structural integrity of the tunnel lining and preventing the intrusion of surrounding groundwater into the tunnel. The design will meet the performance criteria of the operating agency." However, the measure does not specify what these performance criteria are, and provides no evidence to conclude that they will be adequate to deal with the fault offset.

- Mitigation Measure **GEO-4** states that "If ground movements exceed acceptable levels set during design, additional measures will be required. . ." However, the document does not state what the "acceptable levels" of ground movements will be. Moreover, the additional measures that will be required are not described in adequate detail. The measure also fails to describe the contents of the "contingency plan of action" that will be required in the event that ground movements occur above levels that could cause structural damage.

DEIR/S at 3.10-21 to -24. These measures are not adequate to support the DEIR/S's conclusion that geological and seismic impacts will be mitigated to a less than significant level. This deferral of mitigation is especially problematic since Caltrans has not developed, and the DEIR/S does not rely on, seismic design criteria for tunnels.

8. Caltrans Improperly Substituted a Less Robust Tunnel Design for the Original Design in Order to Save Costs, Without Explaining If or How the Later Design Will Minimize or Avoid Impacts.

As originally proposed, the Project's freeway tunnel design called for an oversized tunnel, or large vault backfilled with crushable materials in the sections of the tunnel crossed by active faults. DEIR/S Preliminary Geotechnical Report at 11-9 to -10. This design was intended to protect tunnel users by reducing tunnel damage at fault crossings in the case of fault offset. Ultimately, however, Caltrans settled on a different design that calls for vault sections with steel segmental lining. Caltrans made the change due to "constructability issues as well as risk, cost, and schedule implications." *Id.* at 11-10. In other words, the subsequent design can be built more cheaply and quickly. Moreover, the design change was made in reliance on "future design studies," without any specific analysis of how either design would perform in response to an earthquake.

DEIR/S Tunnel Evaluation Report at 2-4 ("Site-specific geotechnical investigations have yet to be completed at each of the various fault zones; future design studies will require site-specific data to be obtained in order to refine the design concepts discussed herein.")

In fact, as the Wilson Geosciences Report describes in detail, the change in design could potentially *increase* the damage to the tunnel due to an earthquake. But the DEIR/S ignores this critical problem, as it fails to address how the proposed tunnel design option will best protect tunnel users. The DEIR/S should have analyzed the design's expected performance under various fault offset and near-source ground motion scenarios. It also should have explained the cost, risk, and construction time trade-offs used to justify the final design selected by Caltrans. Without this information, the DEIR/S cannot assure the public that the chosen design will prevent serious impacts to tunnel users, and that cost and time considerations were properly balanced with public safety.

In sum, the DEIR/S's analysis of impacts relating to seismic risks does not meet CEQA and NEPA's minimum standards. As a result, the DEIR/S provides no evidence that any of the tunnel alternatives would be constructed in a manner that will ensure public safety.

F. The DEIR/S's Analysis of and Mitigation for the Project's Hydrological and Groundwater Impacts Are Inadequate.

One of the policy goals of CEQA and NEPA is to identify impacts and feasible mitigation at the earliest feasible stage before project momentum decreases an agency's flexibility. *See Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 307; *Oro Fino Gold Mining Corp. v. County of El Dorado* (1990) 225 Cal.App.3d 872, 884-85; *see also City of Tenakee Springs v. Clough* (9th Cir. 1990) 915 F.2d 1308, 1313 ("NEPA requires consideration of the potential impact of an action *before* the action takes place"). To that end, information regarding the project's impacts must be "painstakingly ferreted out." *Environmental Planning and Information Council of Western El Dorado County v. County of El Dorado* (1982) 131 Cal.App.3d 350, 357 (finding an EIR for a general plan amendment inadequate where the document did not make clear the effect on the physical environment).

As discussed below and in the report prepared by Wilson Geosciences Inc., the DEIR/S's analysis of the Project's hydrologic and groundwater impacts from the Project's LRT and Freeway Tunnel alternatives is inadequate because it fails to: (a)

adequately describe the Project setting; (b) identify thresholds of significance; (c) describe the engineering design features of the tunnel alternatives; (d) support its conclusions with the necessary facts and analysis; and (e) identify mitigation capable of minimizing the tunnel alternatives' significant environmental impacts.

1. The DEIR/S's Failure to Accurately Describe the Project's Existing Hydrological and Groundwater Setting Results in a Serious Underestimation of the Project's Hydrological Effects.

Knowledge of the regional setting is critical, as it forms the baseline for evaluating a project's environmental effects. In considering impacts to hydrology and groundwater, the DEIR/S must provide a through description of the site's existing hydrological characteristics and then comprehensively describe how the Project, particularly the LRT and Freeway Tunnel alternatives, would affect these conditions. Here, the DEIR/S fails to provide the most basic hydrologic information about the groundwater basins and floodplains that the Project would potentially affect.

(a) Raymond Basin and Main San Gabriel Basins.

As the Wilson Geosciences Report explains, the DEIR/S mentions the Main San Gabriel and Raymond groundwater basins, but it does not describe the geologic, hydrological and groundwater characteristics of these basins. The DEIR/S provides no information on groundwater depth contours, groundwater flow direction, basin thickness descriptions or contours, groundwater volumes, groundwater interactions between the Raymond and Main San Gabriel basins, rates of groundwater recharge and withdrawal, locations of pumping wells, or groundwater quality. Nor does the document provide sufficient hydrogeologic and geotechnical information to allow for an evaluation of groundwater flow constraints associated with constructing a tunnel in a seismically active zone.

EIRs for projects that have the potential to threaten groundwater – such as the proposed tunnel alternatives – must describe the site's hydrologic conditions (i.e., baseline conditions) before they can adequately analyze impacts and propose mitigation measures. Here, the DEIR/S tackles the task in reverse order. First, it provides a cursory acknowledgment of the Project's groundwater impacts. Then, it proposes that, as *mitigation* for the tunnel alternatives, the lead agency would comprehensively investigate the characteristics of groundwater resources in the areas where tunneling and excavation would occur; this investigation would establish the baseline for examining the Project

tunnel alternatives' impacts. DEIR/S at 3.9-21 (WQ-3); *see also* the DEIR/S's Tunnel Evaluation Report at 20, 21.

The DEIR/S's approach violates CEQA and NEPA. The agency's detailed investigation as to setting cannot be deferred until after project approval. *See Sundstrom,* 202 Cal.App.3d at 307; *see also Robertson,* 490 U.S. at 352 (EIS must discuss mitigation "in sufficient detail to ensure that environmental consequences have been fairly evaluated"). Without sufficient groundwater and geologic characterization, the DEIR/S is unable to estimate whether construction of the tunnel, or an earthquake affecting the tunnel, would substantially deplete groundwater supplies or affect groundwater quality. The potential development of a tunnel traversing several alluvial groundwater basins warrants a comprehensive understanding of the groundwater resources within these basins. These data are readily available and/or attainable, and we can find no plausible explanation why this fundamental information was not included in the DEIR/S.

(b) Laguna Regulating Basin and Dorchester Channel.

The DEIR/S also does not provide a sufficient description of the two floodplains that are located within the study area: Laguna Regulating Basin and Dorchester. DEIR/S at 3.8-2. Certain alternatives, including, for example, the dual-bore tunnel alternative, would require longitudinal encroachments[32] within one or both of these floodplains. *Id.* at 3.8-5. The DEIR/S provides no description of either basin's hydrologic system. It includes no information on flood elevations, peak flows to drainage areas, or the flood frequencies associated with peak flows. Without this information, there is no context for potential flooding impacts that could occur as a result of construction within the floodplains.

Floodplains are critical, interrelated components of the hydrologic system that receive and discharge water. Changes to one part of the system will affect others. Dorchester Channel, in particular, is a major drainage within the study area. *Id.* at 3.9-8. The failure of the DEIR/S to accurately portray the site's underlying environmental conditions contravenes CEQA and NEPA, undercutting the legitimacy of the environmental impact analysis. Especially because the Federal Highway Administration

[32] An encroachment is defined as "an action within the limits of the base floodplain." DEIR/S at 3.8-1

requires that the practicality of alternatives be evaluated if a project results in a longitudinal encroachment into a floodplain (*Id.* at 3.8-1), it is critical that the DEIR/S accurately describe these existing floodplains and the potential for the Project to encroach into them.

2. The DEIR/S Lacks Thresholds of Significance for Determining the Project's Hydrological and Groundwater Impacts.

As discussed above, one of the first steps in any analysis of an environmental impact is to select a threshold of significance. As with other impact sections, the DEIR/S contains no thresholds of significance for the Project's hydrological and groundwater impacts. This flaw leads to a cascade of other failures; without a threshold, the DEIR/S cannot do its job.

For example, the DEIR/S states that the Project would not substantially deplete groundwater supplies, would result in no groundwater quality impacts, and would cause no impacts relating to the placement of structures in floodplains. *Id.* at 4-65 and 4-66. But because the DEIR/S does not identify numeric levels for any of these impacts, there is no way for the public to confirm that these impacts would in fact be less than significant. Indeed, based on the limited information in the DEIR/S and analysis prepared by Wilson Geosciences, there is sound evidence that the Project would have potentially significant impacts on groundwater supplies and groundwater quality, and would adversely impact the floodplains in the study area.

3. The DEIR/S Does Not Disclose Groundwater Impacts That Could Result From Penetrating the Raymond Fault.

(a) Impacts to Groundwater Supplies.

The DEIR/S fails to adequate analyze the Project's impacts on groundwater supplies. First, as discussed above, the DEIR/S omits critical information regarding the Project's hydrologic setting. As the Wilson Geosciences Report explains, the Raymond Fault separates the adjudicated Raymond and the Main San Gabriel Groundwater Basins. The fault serves as a natural subsurface dam, holding back water in the Raymond Basin on the north from water in the Main San Gabriel Basin on the south. DEIR/S at 3.10-3. Water levels are 160 feet lower in the Main San Gabriel Basin than immediately across the Raymond Fault in the Raymond Basin. Perforating this groundwater barrier, either through tunnel construction or as a result of an earthquake, could create significant

pathways for groundwater from the Raymond Basin to flow into the Main San Gabriel Basin. Any perforation of this subsurface dam could have devastating impacts, including on the City of Pasadena's water supply.

Unfortunately, the DEIR/S does not recognize the relationship between the two groundwater basins and the subsurface dam, and thus dismisses the potential threat to groundwater resources that could result from perforating this barrier. A major part of the problem is that the DEIR/S relies on tunnel design features to assert that the tunnel would not cause a drawdown of local groundwater tables. DEIR/S at 4-66. However, the DEIR/S provides only a superficial discussion of these Project features, never actually explaining how they would prevent groundwater inflows. Equally concerning, the Project would be constructed in a seismically active area, but the DEIR/S fails to determine whether the Project's tunnel alternatives have been adequately engineered to ensure that a moderate or large earthquake would not impair the Main San Gabriel Groundwater Basins.

The DEIR/S casually asserts that "special care would have to be exercised" when tunneling through a fault zone. DEIR/S at 3.10-21. Yet, the DEIR/S never describes the "careful" techniques that would be employed to protect groundwater during this process; it merely states that Caltrans would use a pressurized-face tunnel boring machine ("TBM") as well as grout and concrete lining with rubberized gaskets. *Id.* at 3.10-21; 3-24.7; 4-65. Tellingly, the DEIR/S never explains *how* the TBM, grout and lining would actually protect groundwater. Thus, contrary to CEQA and NEPA's requirements, the DEIR/S provides no evidence to support either its finding that groundwater would be sufficiently controlled, or its conclusion that the impact would be less than significant (*see id.* at 3.9-16, 3.10-12, 3.10-19, 3.247, 4-66).

In fact, as the Wilson Geosciences Report demonstrates, there is a high potential for the proposed SR 710 tunnel to leak excessive amounts of groundwater. Wilson Geosciences conducted a literature search of tunneling projects and, specifically, the effectiveness of grout to control groundwater. These studies clearly demonstrate that tunnels leak. *See* Wilson Geosciences Report, citing Jacobs Engineering. Grouting can help, but it does not eliminate leaks through or around a tunnel lining. In a study of the South Cobb tunnel project constructed in Atlanta, Georgia, Jacobs Engineering determined that the tunnel would likely leak by 252 gallons per minute ("gpm"). Unfortunately, even after the most advanced grouting techniques were installed, flow rates were projected to be reduced by only 40 percent, i.e., 152 gpm would continue to leak. Accordingly, roughly 80 million gallons annually, or roughly 245-acre feet per

year, continued to leak from the South Cobb tunnel despite advanced grouting techniques.

Although the SR 710 DEIR/S does not identify the expected flow rates upon completion of the tunnels, Wilson Geosciences assumed for purposes of their analysis that the Project could result in the same relative amount of leakage as that from the South Cobb tunnel. Based on Geosciences' analysis, the Freeway Tunnel alternative could result in a 5.23 percent reduction in Pasadena Subarea storage each year.[33] The DEIR/S never discloses this potential dewatering of the Pasadena's water basin, in violation of CEQA and NEPA.

Confusingly, while DEIR/S assures readers that the Project's tunnel alternatives will be designed to avoid groundwater flows, the document's technical appendix acknowledges that groundwater inflows *in fact are expected to occur* during construction unless systematic ground improvement measures are implemented to treat the ground prior to excavation. *See* Tunnel Evaluation Report at 20. Despite this alarming fact, the appendix states that the estimates of the maximum potential groundwater flush flows and sustained flows are not available and will not be developed until future design phases. *Id.* at 20. As a result, it impossible at this time for the agency to develop specific criteria, plans, and procedures for effective groundwater control measures. *Id.* at 21. The appendix never thus explains how the ground improvement measures would actually control groundwater inflows.

The DEIR/S's practice of deferring these critical analyses until after Project approval violates CEQA and NEPA. Because the DEIR/S declines to analyze the Projects' hydrological and geotechnical conditions, the document repeatedly concludes

---

[33] Wilson Geosciences' conclusion may actually underestimate the dewatering impact, as it is modeled on a study from seismically inactive environment in Georgia, not for an earthquake-prone region of California. The Project's tunnel alternatives would be constructed across multiple active faults. Indeed, there is a 93 percent chance of a magnitude 7 or larger earthquake occurring during the next 30 years in southern California. *See* "Magnitude – 6.7 quake certain to hit California within 30 years, USGS says," March 10, 2015, attached as Exhibit 32. The DEIR/S fails to analyze the potentially disastrous consequences from a moderate or large earthquake on any of the area faults.

that impacts will be determined as they happen and mitigation will be worked out then. This strategy is unlawful. An EIR is "an environmental alarm bell" whose purpose it is to alert the public and its responsible officials to environmental changes *before* they have reached ecological points of no return. *Laurel Heights,* 47 Cal.3d at 392; *see also City of Tenakee Springs,* 915 F.2d at 1313 ("NEPA requires consideration of the potential impact of an action *before* the action takes place"). The DEIR/S's approach strips the document of its key purpose: to provide forewarning.[34]

In sum, the DEIR/S lacks any evidentiary support for its conclusion that the Project, particularly the tunnel alternatives, would not adversely impact groundwater water supplies in the Raymond or San Gabriel groundwater basins under a steady state scenario, much less in the event of a moderate or large earthquake.

(b) Impacts to Groundwater Quality.

The DEIR/S's conclusion that impacts to groundwater quality would be less than significant also does not stand up to scrutiny. The DEIR/S does not analyze the potential for groundwater pathways to transport contaminants in the Raymond Basin (Pasadena Subarea) groundwater into the Main San Gabriel Basin – either along the Raymond fault, along the tunnel contact with alluvium or bedrock, or through the tunnel.

As the Wilson Geosciences Report explains, cracked and fractured areas that could facilitate seepage along the outside of the tunnel could allow contaminated groundwater to flow from the Raymond Basin into the Main San Gabriel Basin. Potential contamination of Raymond Basin groundwater could come from sources such as the Jet Propulsion Laboratory's facilities or from incidents such as chemical or fuels spills along the freeway. Studies have documented actual and projected movements of contaminants from JPL (perchlorates) and groundwater flow pathways from north and northwest to south and southeast, all toward the proposed bored tunnel location beginning at the SR-210/SR-134 interchange. Any current or future groundwater contamination along this

[34] Moreover, the fact that groundwater inflows are expected to occur appears only the DEIR/S's technical appendix keeps the public in the dark as to the true magnitude of the Project's environmental effects. *See California Oak Found.,* 133 Cal.App.4th at 1239 (information buried in an appendix is not a substitute for good faith reasoned analysis in the EIR).

pathway could end up at the proposed bored tunnel north of the penetration of the Raymond fault.

As with its discussion of groundwater supplies, the DEIR/S relies primarily on grouting to conclude that the Project's tunnel alternatives would not impact groundwater quality. *Id.* at 3.9-17. However, the DEIR/S does not analyze static effects, such as vibration or chemical degradation, on the proposed grout. Nor does it consider the effect that a moderate or larger earthquake would have in disrupting the post-construction "impermeable" groundwater barrier. Rigorous analyses are needed to evaluate the potential impacts on groundwater quality resulting from ground movements.

Without any evaluation of the geologic units and fracture patterns in bedrock, or of the potential deterioration of the "grout seal", the DEIR/S fails to support its conclusion that impacts related to groundwater contamination will be less than significant.

4. The DEIR/S Does Not Adequately Analyze Impacts to the Laguna Regulating Basin or the Dorchester Channel.

(a) Laguna Regulating Basin.

The Freeway Tunnel alternative (dual-bore) would require widening SR 710 along its east side, which is along the western boundary of the Laguna Regulating Basin.[35] *Id.* at 3.8-5. Widening the freeway to provide access to the south portal of the dual-bore tunnel would involve a longitudinal encroachment within the floodplain of the Laguna Basin. *Id.* at 3.8-6. The longitudinal encroachment, which would be up to 20 feet wide and 700 feet long along the Basin's western boundary, results from the excavation necessary for the construction a bridge structure. *Id.* at 3.8-7.

The DEIR/S asserts that this excavation and other construction activities would not affect the storage volume or the Laguna Basin. *Id.* The document further

[35] The Freeway Tunnel alternative single-bore design variation would also require widening SR 710 with associated impacts to the Laguna Regulating Basin. *Id.* at 3.8-5, -6.

asserts that while construction of the bridge structure would result in slight modifications to the floodplain boundary, the base floodplain elevation would not change. *Id.* at 3.8-6; 7. However, because the document provides no information on the basin's existing storage volume or floodplain elevation, it lacks any evidentiary support for its conclusion that the Freeway Tunnel would not affect the floodplain's elevation.

The DEIR/S also does not describe the extent of the excavation or provide any details about the engineering of the bridge structure, e.g., the number and size of the bridge pilings. Nor does it identify the existing floodplain elevations or the elevation of the floodplain upon completion of the Project. Without this basic information, it is not possible to determine the Freeway Tunnel alternative's hydrologic impacts on the Basin.

(b) Dorchester Channel.

The dual-bore Freeway Tunnel design variation requires widening SR 710 along its west side, which is along Dorchester Channel's eastern boundary. DEIR/S at 3.8-5, 6. It would also place fill into the Channel, which would result in narrowing the floodplain boundary. *Id.* at 3.8-8. The placement of fill and/or structures in a floodplain would reduce the capacity of the basin and increase water surface elevation (*id.*), yet the DEIR/S concludes that these modifications would result in no increased flood risk to adjacent communities. *Id.* The DEIR/S lacks the evidentiary support for this conclusion. What information that is provided in the DEIR/S strongly indicates that the Freeway Tunnel would in fact adversely impact the capacity of the flood basin, with associated impacts to adjacent areas.

The DEIR/S states that the dual-bore Freeway Tunnel would increase water surface elevation by two feet, with the maximum increase occurring about 235 feet upstream of the Hellman Avenue crossing. *Id.* However, the DEIR/S never explains the implications associated with this increase in the Basin's water surface elevation; it merely states that there would be no increased flood risk because water would still be contained within the concrete box. Unfortunately, the DEIR/S omits the following critical information: the capacity of the existing concrete box and the design engineering and capacity of the new box. Furthermore, it provides no analysis of how hydrological flows would change as a result of the Project, or the effect that these changes would have on adjacent and downstream areas.

Notwithstanding the DEIR/S's lack of analysis, the document concludes that the Project – specifically, the dual-bore Freeway Tunnel variation – would minimize

the longitudinal encroachment within this floodplain. *Id.* at 3.8-8. The DEIR/S further asserts that other design variations considered for this Alternative were rejected because they would have required geometric modifications to the horizontal or vertical alignment, or realignment of the freeway mainline. *Id.* Yet, the DEIR/S includes none of this information, even in summary form. The document never even bothers to identify the alternative design variations that the lead agencies purportedly considered.

In conclusion, the DEIR/S's failure to analyze or mitigate the Project's hydrological and groundwater impacts is a clear violation of CEQA and NEPA. Consequently, Metro and Caltrans may not rely on this EIR/S to approve the proposed Project.

G. The DEIR/S Fails to Evaluate the Project's Cumulative Impacts.

Both CEQA and NEPA require an analysis of a project's cumulative impacts. CEQA defines "cumulative impacts" as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." *Id.* "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b). The cumulative impacts concept recognizes that "[t]he full environmental impact of a proposed . . . action cannot be gauged in a vacuum." *Whitman v. Bd. of Supervisors* (1979) 88 Cal. App. 3d 397, 408. Likewise, NEPA requires analysis of connected and similar actions that will lead to cumulative impacts. 40 C.F.R. § 1508.25(a), (c); *see also Florida Wildlife Fed'n v. U.S. Army Corps of Eng'rs* (D. Fla. 2005) 401 F.Supp.2d 1298. NEPA regulations define a "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . ." 40 C.F.R. § 1508.7.

Here, the DEIR/S's analysis of cumulative impacts fails to comply with CEQA's and NEPA's clear requirements. To begin with, while the DEIR/S's cumulative impact chapter identifies 40 projects (see Table 3.25-1), it essentially disregards the potential for these projects, together with the SR 710 North Project, to result in cumulatively significant environmental impacts. For example, the DEIR/S mentions the Devil's Gate Reservoir Project but fails to analyze the effects of this project together with the SR 710 North Project.

The Devils Gate project, located in the City of Pasadena (very near the northern terminus of the Tunnel Alternatives), involves a comprehensive sediment removal plan that will restore and maintain flood control capacity at the Devil's Gate reservoir. *See* Devil's Gate Reservoir Sediment Removal and Management Project, Final EIR at ES-1, attached as Exhibit 33. This project will include removal of approximately 2.9 million cubic yards of existing excess sediment from the reservoir as well as additional sediment that accumulates during construction. DEIR/S at 3.25-10. According to the DEIR/S, sediment removal activities at Devil's Gate are expected to occur over approximately 5 years, beginning in summer 2015. *Id.* This effort will require an average of 50 truck trips per hour, with an estimated maximum of 425 truck round-trips per day during excavation. Devils Gate FEIR at 85. Trucks depositing sediment from Devil's Gate will travel along many of the freeways that will be impacted by construction and operation of the SR 710 North Project, including the I-210, I-5, SR 134 and SR 2. *Id.* at 238, 240.

Even though construction of the two projects appears to be concurrent and will impact many if not all of the same freeways, the DEIR/S concludes that the SR 710 North Project, together with Devil's Gate, would not contribute to cumulative transportation impacts.[36] DEIR/S 3.25-28. Tellingly, the DEIR/S includes no evidence to support this remarkable assertion. Moreover, the two projects would also result in other cumulatively significant impacts, including air quality, climate change and noise impacts. The DEIR/S should have provided a thorough analysis of these impacts.

The DEIR/S also fails to examine the cumulative impacts of the SR 710 North Project together with I-710 expansion project in Los Angeles County between Ocean Boulevard and SR 60 ("I-710 South Project"). This omission is surprising inasmuch as the DEIR/S admits that the SR 710 North Project will have potential cumulative impacts on traffic/transportation, hydrology/floodplain and air quality. DEIR/S at 3.25-3. The I-710 South Project includes widening I-710 up to 10 general-purpose lanes (five lanes in each direction); modernizing and reconfiguring the I-405, the SR 91, and a portion of the I-5 interchanges with the I-710; modernizing and reconfiguring most local arterial interchanges along the I-710; and providing a separated four-lane freight corridor to be used by conventional or zero-emission trucks. *Id.* A

[36] The DEIR/S admits that the SR 710 North Project may be constructed concurrently with the Devils Gate Project. DEIR/S at 3.25-28.

RDEIR/SDEIS is being prepared to analyze a revised set of build alternatives for the I-710 South Project and will be released for public review and comment in 2015. The anticipated start of construction is 2020. *Id.*

As the letter submitted by Rossman & Moore on behalf of the City of South Pasadena explains, there is an intimate connection between the I-710 South Project and the proposed Project. Indeed, the projects occur along segments of the same freeway, likely require design coordination, and will apparently be constructed concurrently. Agencies may not improperly "segment" projects in order to avoid preparing an EIS or EIR; instead, they must consider related actions in a single document. *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir. 1985); *Laurel Heights*, 47 Cal.3d. at 376-395 (1988). "Not to require this would permit dividing a project into multiple 'actions,' each of which individually has an insignificant environmental impact, but which collectively have a substantial impact." *Thomas*, 753 F.2d at 758. The Council on Environmental Quality's NEPA regulations thus require agencies to consider "connected," "cumulative," and "similar" actions within a single EA or EIS. 40 C.F.R. § 1508.25; *Thomas*, 753 F.2d at 758-59. Similarly, CEQA regulations require that an EIR describe the entirety of a project, including reasonably foreseeable future actions that are part of a project, and must analyze those reasonably foreseeable actions. 14 Cal. Code Regs § 15378(a). The SR 710 North DEIR/S must analyze the impacts from these two projects together "when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement." 40 C.F.R. § 1508.25(a)(3).

The DEIR/S's cumulative impacts chapter is further flawed in that it does not mention whole categories of potential cumulative impacts. For example, the DEIR/S never studies the potential for the Project, together with other projects listed in Table 3.25-1, to substantially deplete water supplies. In fact, the cumulative impact analysis never mentions the term "groundwater supplies" at all. It also completely ignores health risk impacts that would result from the release of mobile and other sources of toxic air contaminants.

In other instances, the DEIR/S provides cumulative impacts analyses that are simply nonsensical; as a result, its conclusions that these impacts are less than significant lack any evidentiary basis. For example, regarding impacts to hydrology and floodplains, the DEIR/S explains that the Freeway Tunnel alternative would encroach into the Laguna Regulating and Dorchester flood basins. DEIR/S at 3.25-34. It further acknowledges that other cumulative projects such as the I-710 South Project and the

Olive Pit Mining and Reclamation Project have the potential to result in "*substantial effects* relating to hydrology and floodplains." *Id.* (emphasis added). The DEIR/S then concludes, illogically, that because there are no feasible design variations for *the Project*, the proposed Project would not have a cumulative impact on hydrology and floodplains. It makes no attempt to actually analyze the effect of the other projects together with the Project, as CEQA and NEPA require.

In regards to water quality and storm water impacts, the DEIR/S states, "Of the 39 projects listed in Table 3.25-1, *none* have the potential to contribute to an impact on water quality because they all implement BMPs [best management practices] and other avoidance, minimization, and/or mitigation measures." *Id.* at 3.25-36. This statement defies common sense and is incorrect. If every project that were ever developed fully mitigated water quality impacts with BMPs, the quality of water in Los Angeles County would be pristine. Yet, as the DEIR/S explains, groundwater in the area is impaired with, among other things, VOCs, nitrates, ammonia, copper, lead oil, trash, coliform bacteria and cyanide and that this pollution is from sources such as residential and industrial development. Clearly BMPs and other mitigation measures may incrementally reduce some groundwater pollution, but they are not sufficient to avoid groundwater contamination altogether as the DEIR/S asserts.

As regards energy consumption, the DEIR/S explains that California is the most populous state in the United States, and its total energy demand is second only to Texas. DEIR/S at 3.25-46. It goes on to state:

> Much of the energy consumed in the SCAG region is for residential, commercial, and transportation purposes. Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the State's largest energy consumer. More motor vehicles are registered in California than in any other state, and worker commute times are among the longest in the country. Transportation-related activities account for approximately half of all the petroleum products consumed in California. *Id.*

Despite the fact that energy consumption is a major problem in California, the DEIR/S illogically states that "the 39 reasonably foreseeable actions have no or limited potential to result in effects related to energy and, therefore, limited potential to contribute to cumulative effects related to energy with particular relevance to energy." *Id.* at 3.25-47.

The DEIR/S then finally admits that only one project – the El Monte Walmart – might have limited potential to result in energy-related effects, but then implies, absent any evidence, that it would be designed to reduce energy consumption. *Id.*

The DEIR/S's approach to cumulative transportation impacts is particularly uninformative. First, the DEIR/S explains that for the purpose of this cumulative impacts analysis, the Project study area includes a total of 156 intersections. DEIR/S at 3.25-26. Yet, this is the precise study area used to examine *Project-specific* impacts. *Id.* at 3.5-5. Using the same study area for purposes of Project-specific and cumulative impacts might be sufficient if the cumulative projects – and their respective transportation impacts – did not extend outside the study area boundary. But, as discussed above, the study area here is not even large enough to capture all of the Project-specific transportation impacts. It is clearly too small to capture the Project's cumulative transportation impacts.

Perplexingly, many of the transportation projects identified on the DEIR's cumulative project list (Table 3.25-1) are actually located *outside* of this study area.[37] These projects include the following:

- Project #1: SR 710 south project (partially located outside the study area)
- Project #2: The I-5 Corridor Project (Project #2) (entirely outside the study area)
- Project #3: I-5 Improvement Project between SR-118 & SR-170 (entirely outside the study area)
- Project #4: I-5 North Improvement Projects between SR-134 & SR-170 (entirely outside the study area)
- Project# 5: I-5/Western Interchange Improvements (entirely outside the study area)
- Project # 7: San Bernardino Freeway (I-10) add one HOV lane from I-605 to SR-57/71 &I-210 (entirely outside the study area)

[37] Compare Figure ES-1 (SR 710 North Study Area) and Figure 3.25-1 (SR 710 North Study Cumulative Project).

- Project # 9: the I-110 (Harbor Freeway)/Transitway HOT Lanes Project (entirely outside the study area)
- Project # 20: Wilshire Boulevard Bus Rapid Transit – Phases I & II (entirely outside the study area)
- Project # 30: Olive Pit Mining and Reclamation Operations and Long Term Reuse Project (entirely outside the study area).

Certain of these projects are massive; there can be no doubt that their transportation impacts, together with the Project's, would be cumulatively considerable. The DEIR/S's failure to evaluate the cumulative effect that these projects, taken together, would have on the region's transportation network is a fatal flaw.

In fact, the DEIR/S fails to analyze the transportation impacts of *any* of the cumulative projects. The DEIR/S identifies 19 projects it purports to include in the cumulative transportation analysis because "they have the potential to contribute to substantial changes in traffic conditions."[38] DEIR/S at 3.5-27. Despite having identified these 19 projects, the DEIR/S never conducts the required impact analysis. While it asserts that the effects of these 19 projects were already analyzed in Project-specific analysis (*Id.* at 3.25-28), the DEIR/S lacks any evidentiary support for this assertion. We searched both the Transportation Technical Report and the Transportation Technical Report Appendix for these projects (Devil's Gate Reservoir Sediment Removal and Management Project and the Olive Pit Mining and Reclamation Operations and Long Term Reuse Project) and neither document even mentions them. Thus, there is simply no evidence to support the DEIR/S's claim that the agencies ever conducted any analysis of the Project's cumulative transportation impacts.

The DEIR/S also fails to analyze the Project's cumulative air quality impacts. Here, the DEIR/S states that most of the 39 projects listed in Table 3.25-1 have

[38] The DEIR/S fails to study the effects of the other 21 projects. This is a serious omission since the DEIR/S clearly acknowledges that all of the projects identified in Table 3.25-3 have "some potential to result in traffic impact and potential to contribute to cumulative traffic impacts." *Id.* at 3.25-27. The failure to analyze these impacts is a fatal flaw, warranting recirculation.

the potential to result in air quality impacts and that 11 of these have the potential to result in *substantial* air quality impacts. *Id.* at 3.25-43. Of these 11, the DEIR/S states that 7 projects would contribute to a *permanent* air quality impacts in the study area. *Id.* at 3.25-44 (emphasis added). Yet, the document does not proceed to the next required step in the cumulative impacts analysis: (1) to quantify the increases in emissions from these nearby projects, and (2) to analyze how the increases from these projects would affect air quality *together with* the Project. The DEIR/S's failure to provide any analysis for the 7 projects that the DEIR/S concedes would contribute to a permanent air quality impact, is particularly glaring.

Rather than provide the required analysis, the DEIR/S offers various illogical arguments and conclusory statements that the Project will not contribute to any cumulative air quality impact. For example, while the DEIR/S acknowledges that some of the other projects could be constructed concurrently with the proposed Project, it asserts that the *Project's* construction-related air quality impacts will be reduced because it must comply with the SCAQMD Rule 403 and Caltrans Specifications. *Id.* at 3.25-44. The DEIR/S misses the point. Even if the Project's individual impact were small, the agency is required to analyze that impact together with air quality impacts of other projects, to determine the extent of the *cumulative* impact. *Kings County Farm Bureau,* 221 Cal.App.3d at 720-21. CEQA Guidelines § 15355(b) ("Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.") [39]

Finally, as noted above, the DEIR/S fails to provide an adequate analysis of the Project's cumulative impacts on climate change. Climate change, of course, is the classic example of a cumulative effects problem: emissions from numerous sources combine to create the most pressing environmental and societal problem of our time. *Kings County Farm Bureau,* 221 Cal.App.3d at 720 ("Perhaps the best example [of a cumulative impact] is air pollution, where thousands of relatively small sources of pollution cause serious a serious environmental health problem."). As one appellate court held, "the greater the existing environmental problems are, the lower the threshold for treating a project's contribution to cumulative impacts as significant." *Communities for*

[39] In any event, as the Landrum & Brown Air Quality Report explains, the DEIR/S does not provide the necessary assurance that the Project's air quality impacts would be reduced to less-than-significant levels.

Better Env't v. Cal. Res. Agency (2002) 103 Cal.App.4th 98, 120. Here, despite overwhelming evidence of this environmental threat, the DEIR/S neglects even to measure the significance of the cumulative climate impact.

III. The DEIR/S's Analysis of Alternatives Is Inadequate.

The DEIR/S's analysis of alternatives falls short. Properly developing, evaluating, and comparing project alternatives is key to the environmental review process. Under CEQA, the alternatives analysis "must contain sufficient detail to help ensure the integrity of the process of decision-making by precluding stubborn problems or serious criticism from being swept under the rug." *Kings County Farm Bureau,* 221 Cal.App.3d at 733 (citing cases). An EIR that does not produce adequate information regarding alternatives cannot achieve the EIR's dual purposes of enabling the reviewing agency to make an informed decision and making the decision-maker's reasoning accessible to the public. *Id.* Similarly, the CEQ regulations describe the alternatives analysis as "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. The DEIR/S suffers from an inadequate analysis of the Project alternatives as discussed below.

A. The DEIR/S Does Not Provide an Adequate Comparative Analysis of the Impacts of Each Alternative.

The DEIR/S does not contain adequate analysis comparing the alternatives' respective environmental impacts. Under CEQA, readers must be able to "evaluate [alternatives'] comparative merits." *Kings County Farm Bureau,* 221 Cal.App.3d at 733 (absence of comparative data in EIR precluded meaningful consideration of alternatives). Likewise, the CEQ's regulations provide that an EIS "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public." 14 C.F.R. § 1502.14. A thorough comparison of the Project alternatives' impacts is therefore crucial to a successful environmental document. Unfortunately, the DEIR/S fails to provide this information. Instead of supplying an actual qualitative or quantitative comparison of the impacts of each alternative, the document merely summarizes, in abbreviated, tabular form, the information provided elsewhere in the various DEIR/S chapters. *See* DEIR/S at 2-87, Table 2.15.

The DEIR/S's truncated approach is no substitute for the in-depth discussion comparing each alternative's impacts that the law and common sense require.

The matrix should provide more detailed descriptions of the alternatives' impacts, and a means for readers to quickly and easily weigh them. (For example, in the matrix, each cell in a row could contain a numeric ranking on a scale of 1 to 5 of the extent of that impact.) Moreover, the document's current approach prevents the public from understanding the effect on the environment of each alternative *as a whole* in comparison to each other alternative. The DEIR/S should provide detailed narrative analysis and a comprehensive discussion comparing the alternatives' impacts in addition to the existing matrix. Organizing this discussion by impact category would be the preferred approach.

An actual comparative analysis of alternatives takes on special significance here, where the agencies claim they have not identified a preferred alternative. Since at this stage of the environmental review process any one of the document's alternatives may be selected, the comparative analysis of the alternatives' impacts should be particularly thorough.

This deficiency is compounded by the fact that the Freeway Tunnel alternative itself contains distinct variants, including single- and dual-bore tunnel designs. The DEIR/S must describe the comparative impacts of each of these variants in greater detail throughout the document. For example, for noise and vibration impacts and impacts to geology and soils, Table 2.15 does not distinguish between the Freeway Tunnel alternative variants. DEIR/S at 2-96 to -97, 2-100 to -101. It simply lumps the impacts from these design options together, without distinguishing which impacts derive from the single- or dual-bore variations. This shortcoming must be corrected throughout the document. At the very least, where impacts will be identical for each of these variants, the DEIR/S should state as much.

B. The DEIR/S Fails to Identify an Environmentally Superior Alternative.

The DEIR/S does not specify an environmentally superior alternative, as required by CEQA. CEQA Guidelines section 15126.6(e)(2) provides that a lead agency must identify an environmentally superior alternative among the alternatives considered. *See also Kings County Farm Bureau,* 221 Cal.App.3d at 737; *Watsonville Pilots Ass'n v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1089 (". . .the purpose of an alternatives analysis is to allow the decision-maker to determine whether there is an environmentally superior alternative that will meet most of the project's objectives."). The DEIR/S simply ignores this crucial requirement without explanation or justification. The DEIR/S's failure to meet this requirement renders the document legally defective.

This shortcoming is highly problematic. Identifying an environmentally superior alternative is a necessary prerequisite for the lead agency to make the findings required by CEQA. In order to approve a project that would have a significant environmental impact, an agency must make findings identifying: (1) the "[s]pecific ... considerations" that "make infeasible" the environmentally superior alternatives, and (2) the "specific . . . benefits of the project [which] outweigh" the environmental harm. Pub. Res. Code, §§ 21002.1(b), 21081; Guidelines § 15092(b). This requirement is rendered inoperable if a lead agency is permitted to consider alternatives without identifying which of them is environmentally superior.

The DEIR/S's failure to identify an environmentally superior alternative is therefore contrary to the very purpose of the EIR process. The omission undermines the public's ability to determine which alternative is environmentally superior—and therefore preferable—thus thwarting its capacity to comment on the Project and its environmental review in a meaningful way. This task is made especially difficult by the DEIR/S's failure to provide clear standards by which Caltrans and Metro will choose between project alternatives, an infirmity described in detail in section I.A. of this letter.

C. The DEIR/S Failed to Consider a Reasonable Range of Alternatives.

The DEIR/S is defective because it fails to consider a reasonable range of alternatives, including a community-based multi-modal alternative. CEQA requires that every EIR analyze a reasonable range of potentially feasible alternatives to a proposed project. *See* Pub. Res. Code § 21100(b)(4); CEQA Guidelines § 15126.6(a); *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866 (EIR for outdoor composting facility legally deficient for failure to consider alternative that would significantly reduce air quality impacts). NEPA requires EISs to do the same. *See* 40 C.F.R. § 1502.14; *National Parks & Conservation Ass'n v. Bureau of Land Management* (9th Cir. 2010) 606 F.3d 1058, 1072 (BLM's EIS for land swap overturned for failure to analyze a "reasonable range of alternatives."). To be reasonable, the range of alternatives analyzed in an EIR must provide enough variation from the proposed project "to allow informed decisionmaking" regarding options that would reduce environmental impacts. *Laurel Heights,* 47 Cal.3d at 404-05.

The DEIR/S fails to meet CEQA and NEPA's requirements for a reasonable range of alternatives. Members of the 5-Cities Alliance have long encouraged the lead agencies to consider alternatives that could achieve Project objectives without the negative environmental impacts described above. Although the agencies hosted over

90 community meetings and 200 stakeholder "briefings," DEIR/S at ES-26, they have ignored input from the 5-Cities Alliance member cities. For example, none of the alternatives examined in the DEIR/S includes eliminating either the north or south freeway stubs, despite wide public support for this approach. Community meetings are meaningless if, as here, agencies do not act on public input to shape project objectives and alternatives.

Given the public support for this option, the lead agencies for the Project should have considered a more innovative, multimodal alternative that combines mass transit, bikeways, and new parks. As noted previously, the 5-Cities Alliance, in conjunction with other organizations, has worked to develop a "Beyond the 710" alternative that presents 21st-century options for connecting people to their destinations. Exhibit 34 (Media Release for "Beyond the 710"), Exhibit 5 (Nelson Nygaard, "New Initiative for Mobility and Community"). This alternative uses transit and "great streets" to sustainably grow communities and improve quality of life in the project area. *Id.* The lead agencies must consider this, or a similar multi-modal alternative, to comply with CEQA and NEPA.

CONCLUSION

The 5-Cities Alliance respectfully requests that Metro and Caltrans deny the SR 710 North Project for the following reasons. First, the Project itself is flawed and unnecessary, failing to provide a real solution to the region's needs. Second, the SR 710 North DEIR/S is inadequate under CEQA and NEPA, as the document fails to provide an accurate, comprehensive analysis of Project impacts, mitigation and alternatives. Third, as the DEIR/S makes clear, the Project, particularly the Freeway Tunnel alternative, would result in numerous significant and unmitigated environmental impacts. The lead agencies should go back to the drawing board and prepare a different alternative, such as "Beyond the 710," that is both environmentally responsible and sensitive to community needs. In the event that the agencies continue to pursue the present Project, they will need to prepare and recirculate a revised DEIR/S correcting the problems identified in this letter.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Rachel B. Hooper

Laurel L. Impett, AICP, Urban Planner

ccs: La Cañada Flintridge City Council
Glendale City Council
Pasadena City Council
Sierra Madre City Council
South Pasadena City Council

List of Exhibits:	
Exhibit 1	Nelson Nygaard Report (Transportation)
Exhibit 2	Landrum & Brown Report (Air Quality and Greenhouse Gas)
Exhibit 3	Landrum & Brown Report (Noise)
Exhibit 4	Wilson Geosciences Inc Report