Attachment E

Analysis of Costs and Benefits

& Technical Exhibits

- Exhibit 1: Nelson\Nygaard CBA Report Review
- Exhibit 2: The Maxima Group’s Comments

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Via E-Mail and FedEx

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Re: State Route 710 North Study Alternatives
Analysis of Costs and Benefits

Dear Mr. Damrath and Mr. Washington:

These comments are submitted on behalf of Connected Cities and Communities regarding the Analysis of Costs and Benefits ("CBA") for the State Route 710 North Study Alternatives ("Project"). Our firm previously submitted comments on the adequacy of the Draft Environmental Impact Report/Statement ("DEIR/S") for the Project. Our comments, dated July 9, 2015, identified numerous flaws in the DEIR/S's analysis and mitigation of a host of environmental impacts resulting from the Project, particularly its freeway tunnel alternatives.

The CBA, unfortunately, perpetuates these errors. The CBA concludes that the freeway tunnel alternatives, particularly the single bore alternative, would have the greatest benefits relative to its costs. However, the CBA, like the DEIR/S, assumes that the freeway tunnel alternatives will relieve traffic congestion, when in fact the opposite is true. Similarly, it understates the true environmental costs of the Project—particularly with respect to air pollution and greenhouse gas emissions—by considering emissions from vehicles for only 20 years of the 100-year life of the freeway tunnels. Conveniently, the CBA *does* consider the 100-year life of the tunnel when it considers Project benefits, and allocates a generous \$769 million (single bore) and \$1.39 billion (double bore) "residual value" to these alternatives. Moreover, contrary to accepted cost-benefit evaluation methodology, the CBA assigns roughly \$1 billion in employment benefits.

Inclusion of these "benefits" is all the more questionable because there is no guarantee that workers will come from the study area. In addition, the DEIR/S does not identify employment opportunities as a Project objective; consequently, the CBA errs by including it as a Project benefit.

The following table summarizes the CBA's calculations of net present value ("NPV") for each alternative, and identifies just a few of the many analytical flaws reflected in the NPV estimates. Obviously the single bore freeway tunnel will no longer rise to the top once the CBA is revised to include accurate assumptions and methodology.

Alternative	CBA's estimation of NPV ($M)	Analytical Flaws
TSM/TDM	343	
Freeway Tunnel Single Bore	1,477 to 1,590	• overstates travel time benefit • overstates residual value ($769 M [single bore]; $1.39 B [double bore]) • fails to justify inclusion of "employment benefits" ($808 M [single bore]; $1.38 B [double bore]) • understates air pollution and GHG costs
Freeway Tunnel Double Bore	-37 to 506	
BRT	369	
LRT	-870	• overstates residual value • fails to justify inclusion of "employment benefits" ($714M)

For the reasons detailed in this letter, and the reports prepared by Nelson\Nygaard and the Maxima Group (attached as Exhibits 1 and 2), the CBA is deeply flawed and misleading. We urge LA Metro and Caltrans to correct the CBA's analysis consistent with accepted cost/benefit analysis methodology and common sense. Of critical importance, the revised CBA must clearly document *each* of its assumptions for calculating *each* of the alternatives costs and benefits. The current CBA provides no detail regarding assumptions or methodology and therefore the public and decision-makers are often forced to guess as to how the document reaches its conclusions.

I. Under Both NEPA and CEQA, the Agencies May Not Rely on the CBA to Select a Preferred Alternative or Approve the Project.

The CBA states that it was prepared at the direction of Metro's Board of Directors, but that it is not a requirement of the National Environmental Policy Act ("NEPA") or the California Environmental Quality Act ("CEQA"). This assertion does not excuse the agencies from preparing an accurate analysis of the Project's costs and benefits. NEPA prohibits agencies from relying on cost-benefit analyses that, like this one, contain misleading assumptions and inflated economic benefits. *See Hughes River Watershed Conservancy v. Glickman* (4th Cir. 1996) 81 F.3d 437, 446-47 (agency's reliance on a study that contained faulty economic analysis violated NEPA because it failed to "ensur[e] that members of the public ha[d] accurate information to enable them to evaluate the Project" and "impaired fair consideration of the Project's adverse environmental effects"); *see also High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (fact that cost benefit analysis is not required under NEPA does not permit agency to rely on quantified economic benefits while ignoring project costs related to greenhouse gas emissions).

Nor may the agencies rely on the CBA to support any findings or statement of overriding considerations under CEQA. Agencies' statements of overriding considerations must be supported by substantial evidence in the record. CEQA Guidelines, 14 CCR § 15093(c). "The statement's purposes are undermined if . . . it misleads the reader about the relative magnitude of the impacts and benefits the agency has considered." *Woodward Park Homeowners Ass'n, Inc. v. City of Fresno* (2007) 150 Cal.App.4th 683, 718 (statement of overriding considerations invalid where it "applied a thumb to the scale" and its assessment of the economic costs and benefits of the project was not supported by substantial evidence).

NEPA and CEQA thus require the agencies to correct the CBA's flawed analysis prior to identifying a Preferred Alternative or adopting findings in support of any statement of overriding considerations.

II. The CBA Grossly Overstates Benefits Associated with Travel Time Savings.

The CBA concludes that the freeway tunnel alternatives will outperform the other alternatives with respect to travel time savings by an entire order of magnitude. It assigns, for example, a "benefit" of approximately $2.5 *billion* for travel time savings associated with the single bore freeway tunnel alternative, compared to approximately $500 million for the TSM/TDM alternative. *See* CBA, Exh. 3-5.

The freeway tunnel alternatives' "benefits" are based on deficient DEIR/S analyses, including deeply flawed travel demand modeling. These flaws are fully described in our July 9, 2015 letter, Exhibit 1 (Nelson\Nygaard Report), as well as in Nelson\Nygaard's CBA Report Review. Once corrected, the CBA's calculation of net present value of the freeway alternatives would likely be significantly reduced.

Key flaws of the DEIR/S, the travel demand model and the CBA's travel time savings analysis include:

- The travel demand model and the resulting CBA analysis fail to account for induced traffic that would result from the freeway tunnel alternatives. Over the short-term, congestion may actually be reduced as a result of the freeway tunnel alternatives' increased capacity. However, because the DEIR/S only analyzed traffic-related impacts for a ten year period (between 2025 and 2035), the purported efficiency gains, if any, would be expected to dissipate as a result of induced demand. Had the DEIR/S evaluated the Project's impact on traffic conditions through 2050, the alleged travel time savings, if any, would be greatly diminished.

- Rather than alleviating traffic, the freeway tunnel alternatives would simply cause bottlenecks to shift between locations. The CBA, like the traffic model, fails to recognize this phenomenon. As an example, 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 freeway tunnel alternative, this segment moves up the list 256 places to become the 24th most congested freeway segment in the region.

- The CBA's sensitivity analysis for "value of time" reveals a bias in favor of the freeway tunnel users, and against transit users. Rather than using a factor of $13.25 for both auto and transit users, the sensitivity analysis uses a factor of $22.57 for auto and $6.35 for transit. Such figures suggest a value judgment that drivers are more valuable, without any evidence. In fact, many transit users choose transit so that they may work and communicate during their commute, in ways that drivers cannot.

- The calculation of travel time savings commences at "opening day" (2020 or 2025) and includes 20 years of forecasted travel time savings. However, the CBA does not appear to discount these numbers for the minimum five to six years of travel time losses due to traffic delays/detours during tunnel construction.

III. The CBA Understates Costs Associated With Air Pollution and Greenhouse Gas Emissions.

The CBA assigns a $5-40 million "disbenefit," i.e., cost, associated with increased air pollution resulting the freeway tunnel alternatives. The TSM/TDM, BRT and LRT alternatives, on the other hand, would not worsen the region's air quality and are therefore assigned a benefit of $10-$30 million.

The CBA's monetization of costs associated with air pollution resulting from the freeway tunnel alternatives is grossly understated, for the following reasons:

- The CBA ignores the sharp increase in particulate emissions that would occur during the minimum five to six years of tunnel construction. The CBA should monetize these construction-related impacts.

- The DEIR/S concludes that the freeway tunnel alternatives would result in a substantial regional benefit for public health. Yet, in direct contrast to this finding, the DEIR/S's technical appendix discloses that the freeway tunnel alternatives would cause localized cancer increase due to added vehicle emissions. In fact, the technical appendix determines that the increased cancer risk at certain locations would be a staggering 149 in 1 million, compared to the South Coast Air Quality Management District's 10-in-1 million cancer risk significance threshold. Given the DEIR/S's erroneous and highly misleading finding regarding the tunnel alternatives' alleged health benefits, it is likely that the CBA assumed these same benefits. A CBA that accurately reflected the findings in the DEIR/S's technical appendices would have taken into account the economic burden of cancer such as health care expenditures and productivity loss. The CBA should be revised to include an accurate monetization of these health impacts.

- As explained in The Maxima's Group report, the CBA fails to consider or monetize the adverse health effects associated with venting concentrated vehicle emissions from the freeway tunnels into near-roadway communities. These adverse health effects include increased rates of asthma, ear-nose-throat infections, heart attack and stroke.

- The CBA ignores and fails to monetize the long term increase in greenhouse gas emissions that will result over the 100-year life of the tunnel alternatives. *See High Country Conserv. Advocates*, 52 F. Supp.3d at 1191 (agency's failure to consider economic costs of greenhouse gas emissions violates NEPA).

IV. The CBA Includes Residual Benefits While Ignoring Residual Costs.

The CBA's analysis generally includes 20 years of projected costs and benefits. However, it skews the analysis heavily toward the tunnel alternatives by assigning a 100-year "residual benefit" to these alternative. The CBA's approach is flawed, for several reasons:

- The CBA's approach runs contrary to Caltrans cost-benefit evaluation methodology, which includes no guidance for assigning a "residual value."

- The CBA fails to include commensurate "residual costs" associated with the freeway tunnel alternatives' increased air pollution, greenhouse gas emissions and traffic congestion.

- The CBA's inclusion of residual value inflates the tunnel alternatives' purported benefits and misleads the public, in violation of NEPA. *See Glickman*, 81 F.3d at 446-47.

V. The CBA Fails to Justify Inclusion of Purported Employment Benefits.

The CBA tips the scales in favor of the tunnel alternatives by assigning roughly $1 billion in employment benefits to these alternatives. This purported "benefit" has no place in the CBA or in the agencies' consideration of the Project, for the following reasons:

- The CBA's approach runs contrary to Caltrans cost-benefit evaluation methodology.

- The DEIR/S does not identify increased employment of construction and maintenance workers as a Project Objective.
- Employment earnings would not defray project costs because it is likely that a large portion of those earnings would be accumulated outside the study area.
- Although this is not disclosed in the CBA, discussion with one of the consultants involved in its preparation revealed that the estimate of jobs created is simply based upon an assumed creation metric of x number of jobs per construction dollar. This approach incorrectly inflates the number of jobs attributed to the tunnel alternatives since the tunnel boring machines should cost a minimum of $80 million; the use of two TBMs is planned for single bore tunnel construction, and four for the dual bore tunnels. Since no TBM manufacturer is located in California, let alone the United States, the number of jobs attributed to such alternatives is significantly inflated.

VI. Conclusion

In conclusion, the CBA's errors are not flyspeck; they undermine the document's entire analysis. LA Metro and Caltrans must revise the CBA to correct its flawed analysis prior to identifying a preferred Project alternative.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

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List of Exhibits

Exhibit 1: Nelson\Nygaard CBA Report Review (July 16, 2015)

Exhibit 2: The Maxima Group's Comments on Metro's 710 Alternatives Cost Benefit Analysis (July 23, 2015)