UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 23, 2007

Ms. Lisa Cathcart-Randall
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Subject: Draft Environmental Impact Statement for the Interstate 5 Corridor Improvement Project, from State Route 91 to Interstate 605, Los Angeles and Orange Counties, California

Dear Ms. Cathcart-Randall:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Interstate 5 (I-5) Corridor Improvement Project, from State Route 91 (SR 91) to Interstate 605 (I-605), Los Angeles and Orange Counties, California. Our comments are provided under the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

Based on our review, we have rated the proposed I-5 Corridor Improvement Project DEIS as Environmental Concerns – Insufficient Information (EC-2). A *Summary of EPA Rating Definitions* is enclosed. The DEIS addresses the environmental impacts of the proposed action to reduce existing and forecast traffic congestion on I-5 between SR 91 and I-605 and includes alternatives that expand the 9-mile corridor from an existing six-lane facility to a 10-lane to 12-lane facility. This project is a part of the broader I-5 Major Improvement Project which extends from Interstate 710 to State Route (SR) 91, a length of approximately 16 miles.

EPA's primary concerns are the potential of project segmentation, the lack of analysis for mobile source air toxics (MSATs) hotspots and the inconsistent reporting of potential environmental justice impacts. The absence of MSAT analysis is of concern to EPA because 1) the project is a potentially large expansion of an already major freeway; 2) the proposed project is in close proximity to residences and other sensitive receptors, such as schools and hospitals; 3) there is an increasing public awareness of air quality impacts associated with transportation projects, as reflected in the passage of Proposition 1B, which includes $1 billion in air quality mitigation measures; and 4) there will likely be further expansions along the I-5 corridor, so it is important to establish an appropriate level of analysis. EPA's concerns, and recommendations, are further discussed in the attachment. Our primary recommendations include: 1) quantifying the construction and operational emissions for MSATs, 2) conducting dispersion modeling of the

most significant MSATs, and 3) identifying hotspots and appropriate avoidance, minimization, and/or mitigation opportunities.

EPA thanks the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) for meeting with EPA to discuss MSATs at the Caltrans District 7 Office on February 7, 2007. During this meeting, we agreed that Caltrans would provide documentation on previous work supporting the assertion that MSATs will decline for the proposed build scenarios and documentation supporting the claim that the non-widening alternatives will result in similar emissions as the base-case scenario. FHWA and EPA also agreed to have a conference call to discuss EPA's support of dispersion modeling as an appropriate tool to assess MSAT emissions for this project after FHWA has an opportunity to review EPA's formal comments. EPA will schedule a call with FHWA and Caltrans next week.

Thank you for the opportunity to comment on the DEIS. We look forward to working with you to resolve the issues raised in our detailed comments. When the Final Environmental Impact Statement is released for public review, please send two hard copies and two electronic copies to the address above (mail code: CED-2). If you have any questions, please contact me or Susan Sturges, the lead reviewer for this project. Susan can be reached at 415-947-4188 or sturges.susan@epa.gov.

Sincerely,

/s/

Nova Blazej, Manager
Environmental Review Office

Attachments:
Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Jinous Saleh, California Department of Transportation
Ron Kosinski, California Department of Transportation
Garrett Damrath, California Department of Transportation
Jean Mazur, Federal Highway Administration
Steve Healow, Federal Highway Administration

EPA DETAILED COMMENTS ON THE INTERSTATE 5 CORRIDOR IMROVEMENT PROJECT, FROM STATE ROUTE 91 TO INTERSTATE 605, LOS ANGELES AND ORANGE COUNTIES, CALIFORNIA, FEBRUARY 23, 2007

Project Scope

The proposed project is the first phase of the Interstate 5 (I-5) Major Improvement Project which also includes future improvements to the freeway segment from Interstate 605 (I-605) to Interstate 710 (I-710). According to the Draft Environmental Impact Statement (DEIS), the proposed project would reduce congestion on I-5 south of State Route 91 (SR 91) in Orange County. Northbound I-5 in Orange County to SR 91 has four mixed flow lanes and one high occupancy vehicle (HOV) lane which create a bottleneck when I-5 transitions to three mixed flow lanes in the project corridor. The DEIS indicates that Orange County has plans for a 12-lane freeway to the County line, which further supports the need for the project. North of I-605, I-5 widens to an eight-lane facility (mixed flow). A 1998 Major Investment Study (MIS) identified a locally preferred alternative of 8 mixed flow lanes and 2 high occupancy vehicle (HOV) lanes from State Route 91 (SR 91) to I-710.

If the completion of the proposed action from SR 91 to I-605 triggers the need to improve additional stretches of I-5, such as a shift of this segment's congestion bottleneck to north of I-605, then the project scope may need to be expanded. As a result, the National Environmental Policy Act (NEPA) evaluation should include the full extent of the planned HOV corridor, and how it will operate. The proposed improvements from SR 91 to I-605 would have independent utility if the intended benefit of congestion reduction and the intended need of the project could be met independent of any future planned HOV expansion on I-5 south of SR 91 or north of the project area between I-605 and I-710.

Recommendation:
Clearly demonstrate the independent utility of the project within its current geographic limits as it relates to the need for the project. If the project need cannot be met without future planned improvements, the scope of the project should be expanded accordingly, such as including an analysis of future improvements to I-710 or future improvements south of SR 91, since these would be considered connected and similar actions (40 CFR 1508.25). EPA believes this is the most effective way to address indirect and cumulative environmental impacts, and also ensures that a broader scope is applied in the identification and evaluation of project alternatives that may be less environmentally damaging. Generally, funding or constraints of project staging and construction should not be used as a basis for segmenting the evaluation of environmental impacts under NEPA.

Mobile Source Air Toxics

EPA is concerned that the DEIS does not sufficiently disclose the potential mobile source air toxics (MSAT) impacts that may result from the proposed project. The absence of this analysis is of concern to EPA because 1) the project is a potentially large expansion of an already major freeway; 2) the proposed project is in close proximity to residences and other sensitive

receptors, such as schools and hospitals; 3) there is an increasing public awareness of air quality impacts associated with transportation projects, as reflected in the passage of Proposition 1B, which includes $1 billion in air quality mitigation measures; and 4) there will likely be further expansions along the I-5 corridor, so it is important to establish an appropriate level of analysis.

The DEIS follows the February 2006 Federal Highway Administration (FHWA) MSAT interim guidance which describes how to assess MSAT impacts for transportation projects during the National Environmental Policy Act (NEPA) process. While there are positive elements to this guidance, especially the willingness to acknowledge potential MSAT concerns, EPA continues to disagree with major elements of this approach nationally. For projects of this type, *i.e*. those with large potential impacts in an already highly impacted area, EPA generally recommends a higher level of analysis than what is found in the DEIS. This is especially important in California, where the awareness of air toxics impacts, the knowledge of background conditions, and the familiarity with tools to assess potential impacts is very high.

Documented Health Effects of Near-Roadway Mobile Source Air Toxics

Many studies have measured elevated concentrations of pollutants emitted directly by motor vehicles near large roadways. These elevated concentrations generally occur within approximately 200 meters of the road, although the distance may vary depending on traffic and environmental conditions, and are hotspot in nature when there are localized concentrations. Pollutants measured with elevated concentrations include benzene, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen dioxide, black carbon, and coarse, fine, and ultrafine particles. For a thorough review of near-roadway monitoring studies, see Section 3.1.3 of EPA's "Draft Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2006, http://www.epa.gov/oms/regs/toxics/ria-sections.htm).

There are also a large number of recent studies that have examined the association between living near major roads and different adverse health endpoints. Several well-conducted epidemiologic studies have shown associations with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the mobile source air toxics (MSATs), including benzene and 1,3-butadiene, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments. For a more detailed review of public health concerns near roadways, see Section 3.5 of EPA's "Draft Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2006, http://www.epa.gov/oms/regs/toxics/ria-sections.htm).

Methodology and Reporting

The DEIS lacks critical documentation and analyses related to MSATs as follows: 1) data, including inputs and detailed results, supporting the conclusion that MSAT emissions will decline for the proposed build scenarios versus the no-build conditions in 2030; 2) an analysis of MSAT emissions for build alternatives other than Alternatives 4 and 5, preventing a complete

comparison; 3) quantitative analysis of MSAT emissions from construction activities, which may lead to significant impacts, especially for diesel particulate matter (DPM); and 4) quantitative analysis, *i.e*. dispersion modeling, of potential changes in MSAT ambient concentrations that may result from the proposed project, preventing any meaningful comparison of changes in health outcomes, which are expected to be hotspot in nature and thus not sufficiently described by total project emissions. This latter analysis is especially important when examining the effect on sensitive populations, such as those in day care centers, hospitals, and nursing homes, and potentially disproportionate impacts for minority and low-income populations.

Recommendations:

- As agreed to during the February 7, 2007 meeting between FHWA, EPA, and California Department of Transportation (Caltrans), provide documentation in the Final Environmental Impact Statement (FEIS) on previous work supporting the assertion that MSAT emissions will decline for the proposed build scenarios versus no-build scenarios in 2030. The information provided in the first paragraph under "Discussion of MSAT Analysis Results" (Page 170) should be carefully documented with input assumptions for elasticity of capacity versus traffic and the resulting changes in average annual daily traffic and peak hour traffic, as well as vehicle speeds, for each alternative. The FEIS should also clearly document changes in reactive organic gases (ROG) emissions versus speed taken from EMFAC and the MSAT emission factors supplied by California Air Resources Board (CARB). The results should be presented in table form, further describing the reported emissions by source type (e.g. on-road gasoline vehicle, on-road diesel vehicle, diesel construction equipment, etc.) and emissions location, when possible. For the latter, if one geographic area of the project will experience a significant increase in emissions relative to other areas, the FEIS should note that.

- Report this analysis for all project alternatives, not just Alternatives 4, 5, and the no-build alternative. For each of the alternatives, MSAT emissions from construction activities should be included for the years of peak emissions. This information should be included in Table 3-13.10 (Page 174 of the DEIS), and should also be added to operational emissions of MSATs for purposes of reporting peak year impacts. Caltrans indicated during the February 7th meeting that the non-widening alternatives will result in similar emissions as the base-case scenario.

- Because MSAT impacts are generally hotspot concerns, conduct dispersion modeling of the most significant MSATs, i.e. those mentioned in the DEIS (Page 169): DPM, acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. The CARB and EPA-approved model developed and maintained by Caltrans, called CALINE, used in the DEIS for carbon monoxide dispersion, is an appropriate model for this analysis. Several recent studies (Gramatnev *et al*., Atmospheric Environment, volume 37, pages 465-474, 2003; Zhang *et al*., Atmospheric Environment, volume 39, pages 4155-4166, 2005) have found CALINE to be accurate for purposes of modeling dispersion of both gaseous and particulate air pollutants, and EPA routinely uses CALINE for such analysis. The joint University of California, Davis (UC Davis) – California Department of Transportation (Caltrans) report, entitled "A Survey of Air Quality Dispersion Models for Project-Level Conformity Analysis" (June 19, 2006), describes the use of CALINE and other similar

models for this purpose. The report notes that models such as CALINE are appropriate for modeling the micro-scale of inert pollutants, which would include direct emission of the above-mentioned MSATs in the near-roadway environment.

- Discuss the predicted concentrations and changes in concentrations between alternatives and years (2004, 2013, and 2030, as well as the peak year for construction emissions), in the context of local air toxics monitoring information (accessible via EPA's AirDATA website, http://www.epa.gov/oar/data/), results from EPA's National Air Toxics Assessment (NATA, http://www.epa.gov/ttn/atw/nata1999/), and other similar studies, such as South Coast Air Quality Management District's (SCAQMD) Multiple Air Toxics Exposure Study (MATES, http://www.aqmd.gov/matesiidf/matestoc.htm and http://www.aqmd.gov/prdas/matesIII/matesIII.html). The FEIS should make special note of changes in predicted MSAT ambient concentrations for locations, especially residences and sensitive receptors, that fall nearer to I-5 as a result of the proposed freeway expansion.

- With respect to environmental justice, evaluate whether low-income and minority communities would experience an increase in MSAT ambient concentrations. If there is an increase, the impacts of the affected community should be compared to the reference community, defined as those who will benefit from the proposed project. The reference community may potentially be the combination of Los Angeles and Orange Counties, or alternatively a greater area of Southern California.

- Identify design and mitigation measures for operational impacts of MSATs. For example, the analysis recommended above should be used to identify hotspot areas where MSAT impacts are expected to increase. Whenever feasible, Caltrans should minimize these increases in hotspot impacts for residences and other sensitive receptors when designing the footprint of the proposed project. To the extent that MSAT impacts are reduced through choice of alternatives, project design, travel demand management, or construction mitigation, the FEIS should quantify and describe these benefits. Many of the recommendations under Construction Mitigation Measures of this letter below will result in decreased impacts for both criteria pollutants and air toxics.

<u>Unavailable or Incomplete Information</u>

The discussion of "Information that is Unavailable or Incomplete" (Pages 171-172) has several inaccuracies requiring correction. The section on emissions is irrelevant to the current DEIS, since EMFAC is the preferred model for quantifying project-scale emissions, and EMFAC does have the ability to predict emission factors for varying vehicle speeds. Thus, the analysis that has already been conducted in the DEIS (Pages 169-170) with EMFAC is sufficient for this purpose.

Recommendation:
Remove the discussion of uncertainties in "Emissions", as it is not relevant to quantifying emissions in California.

Limitations of dispersion models

The discussion of limitations in the dispersion models, CALINE3 and CAL3QHC, is outdated. While it is true that the CALINE and CAL3QHC were developed and validated a number of years ago, as stated in the DEIS, they continue to undergo validation. A number of recent studies have determined that CALINE, especially "CALINE4," accurately predicts ambient concentrations in near-roadway environments for both gaseous and particulate pollutants (see, for example, Gramatnev *et al*., Atmospheric Environment, volume 37, pages 465-474, 2003; Zhang *et al*., Atmospheric Environment, volume 39, pages 4155-4166, 2005). The joint UC Davis - Caltrans report, entitled "A Survey of Air Quality Dispersion Models for Project-Level Conformity Analysis" (June 19, 2006), concluded that available models are appropriate for modeling project-level dispersion of on-road and construction emissions, contradicting the language in the DEIS. Based on these recent studies and report, CALINE4 would be an appropriate tool for dispersion analysis of MSATs within the DEIS. While air toxics monitoring data is always limited, there are sufficient studies, including existing fixed site air toxics monitors, EPA's NATA, and SCAQMD's MATES noted above, that report both monitored and modeled ambient air toxics concentrations in Southern California. Accordingly, it would be straightforward to determine MSAT background concentrations, providing context for the dispersion analysis recommended above.

Recommendation:
Remove the discussion of uncertainties in "Dispersion" and replace it with an updated discussion of the use of CALINE4 in situations similar to the proposed project. The concern about establishing project-specific MSAT background concentrations should be amended to note that Federal Highway Administration (FHWA) and Caltrans will work with EPA and SCAQMD to determine relevant background concentrations.

Exposure Levels and Health Effects

The discussion of "Exposure Levels and Health Effects" is also inaccurate. Both EPA and California Office of Environmental Health Hazard Assessment (OEHHA) have long standing experience and published, peer-reviewed guidance for evaluating long-term health effects, including cancer risk. The concerns raised about estimating exposure over a 70-year lifetime have been addressed extensively by our agencies. Recently, EPA has published an Air Toxics Risk Assessment Reference Library (http://www.epa.gov/ttn/fera/risk_atra_main.html) that addresses the precise concerns raised in this section of the DEIS – namely how to develop appropriate exposure scenarios in a risk assessment. Similarly, California OEHHA has hot spot risk assessment guidance published in support of California's Air Toxics "Hot Spots" Information and Assessment Act of 1987 (a.k.a. AB2588, http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf). While EPA agrees that there are always uncertainties associated with such an analysis, in this case most of the uncertainties would be consistent across alternatives, and such an analysis would still be sufficient for distinguishing between the impacts among scenarios and informing mitigation.

Recommendation:

Remove the discussion of uncertainties in "Exposure Levels and Health Effects" and replace it with a discussion of possible exposure scenarios typically used by EPA and California OEHHA in air toxics risk assessments. EPA is not recommending that FHWA and Caltrans perform a human health risk assessment. EPA does, however, acknowledge that such an assessment is possible. If a human health risk assessment is pursued in the Final EIS, EPA would be willing to assist FHWA and Caltrans in developing meaningful exposure scenarios.

The DEIS provides toxicity information for the six MSATs of most concern. EPA agrees with the need to provide this information in the DEIS, but notes that the primary health concern for acrolein is not cancer, but rather a respiratory endpoint (nasal legions, http://www.epa.gov/iris/subst/0364.htm#refinhal). Similarly, benzene (decreased lymphocyte count, http://www.epa.gov/iris/subst/0276.htm#refinhal), acetaldehyde (degeneration of the olfactory epithelium, http://www.epa.gov/iris/subst/0290.htm#refinhal), formaldehyde (respiratory, http://www.atsdr.cdc.gov/toxprofiles/tp111-c2.pdf), and 1,3-butadiene (ovarian atrophy, http://www.epa.gov/IRIS/subst/0139.htm#refinhal) all have non-cancer health endpoints of potential concern.

Recommendation:
Include health endpoints other than cancer for acrolein, benzene, acetaldehyde, formaldehyde, and 1,3-butadiene in the summary of toxicological endpoints included in the DEIS (Pages 172-173). Cancer is not a known health endpoint for acrolein. Therefore, references to potential carcinogenicity for acrolein should be removed.

Air Quality

The proposed project is located in the South Coast Air Basin (SCAB). The SCAQMD implements local air quality regulations in the SCAB to carry out Federal Clean Air Act (CAA) requirements, as authorized by the EPA. The current SCAB nonattainment designations under the Federal CAA are as follows: carbon monoxide - serious nonattainment; 8-hour ozone - severe nonattainment; particulate matter with a diameter of 10 microns or less (PM_{10}) - serious nonattainment; and particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$) - nonattainment. The SCAB has the worst 8-hour ozone and $PM_{2.5}$ problems in the nation, and attainment of these National Ambient Air Quality Standards (NAAQS) will require massive reductions from mobile sources, given the rapid growth in this emissions category and the long lifespan of diesel engines. The DEIS accurately reflects the SCAB nonattainment designations made by EPA for the NAAQS. However, the DEIS contains multiple air documents, updates to the air analysis, and related appendices, making it difficult for reviewers and the public to clearly understand the analysis and the resulting project impacts.

Recommendation:
Accurately reference all appendices in the FEIS and clarify any discrepancies between text in the DEIS and information given in the appendices.

Traffic Analysis

In a conference call on February 7, 2007 with Andrew Yoon of Caltrans, EPA learned that the traffic calculations and associated air quality analyses in the DEIS are currently being revised to address FHWA's comments. The FHWA indicated that the hourly volumes in the revisions to the traffic were too high for the capacity of the roadway. EPA understands that the current revisions to the traffic analysis are aimed at addressing this comment.

Recommendations:

- Clearly explain in the FEIS how the traffic estimates were developed and how these traffic estimates relate to regional transportation estimates from the Southern California Association of Governments (SCAG). If the revised analysis affects the conclusions in the DEIS regarding the significance of impacts or the evaluation of alternatives, these changes should be reflected in the FEIS.

- Include in the FEIS whether the average daily volume traffic estimates in both the base and future years are derived from SCAG's network estimates. If not, describe how the traffic projections were estimated. Specifically, EPA understands that in the 2006 revisions to the traffic analysis, significant increases in vehicles miles traveled (VMT) were projected when estimates changed from constrained to demand volumes.

- In the new revisions to VMT, discuss if and how the current average daily traffic totals will be spread to reduce high hourly volumes.

- Describe how traffic volumes have been increased to account for the removal of the I-5 bottleneck. Disclose if regional traffic shifts to the I-5 corridor are anticipated to result from the removal of the bottleneck in this highway segment.

Particulate Matter (PM) Standards

On October 17, 2006, EPA issued a final rule establishing changes to the $PM_{2.5}$ and PM_{10} NAAQS, which was effective on December 18, 2006 (See 71 FR 61144). In this final rule, a new 24-hour standard for $PM_{2.5}$ of 35 micrograms per cubic meter (ug/m^3) replaces the old standard of 65 ug/m^3, and the annual PM_{10} standard of 50 ug/m^3 has been revoked. The PM_{10} 24-hour standard of 150 ug/m^3 has been retained. Transportation conformity for the new 24-hour $PM_{2.5}$ standard of 35 ug/m^3 does not apply until one year after the effective date of nonattainment designations.

Recommendation:

Include a reference to the revised PM standards in Table 3-13.2 and the $PM_{2.5}$ section on page 164 of the DEIS. EPA notes that the $PM_{2.5}$ hot-spot analyses required for the project-level conformity determination must still consider the 1997 $PM_{2.5}$ standards, because these are the standards upon which the existing $PM_{2.5}$ nonattainment designations were based.

Particulate Matter Hotspot Analysis

The discussion of the PM_{10} requirements beginning on page 161 of the DEIS does not reflect the changes to PM_{10} project-level hotspot procedures established in EPA's March 10, 2006 final revisions to the transportation conformity rule (see 71 FR 12468) or EPA's March 2006 guidance document on PM hotspots (http://www.epa.gov/otaq/stateresources/transconf/policy/420b06902.pdf.). The March 10, 2006 changes to EPA's conformity rule supersede all previous FHWA and Caltrans PM hotspot guidance documents (i.e., "Interim PM10 Guidance," M. Brady, D. Eisinger, T. Kear. February, 2000; "Guidance for Qualitative Project-Level 'Hot Spot' Analysis in PM_{10} Nonattainment and Maintenance Areas", FHWA, September 12, 2001; and "Particulate Matter and Transportation Projects, Analysis Protocol", February 23, 2005.).

Recommendation:

- Ensure the PM_{10} project-level hotspot analysis is performed following the March 2006 prodedures and that the FEIS reflects the changes of the procedures.

EPA's March 2006 guidance document on PM hotspots discusses the methods that can be used for performing qualitative $PM_{2.5}$ and PM_{10} hotspot analyses, including comparisons to other locations. In particular, the guidance recommends considering PM_{10} and $PM_{2.5}$ conditions at nearby monitors, or locations similar to the proposed project.

- Due to potential impacts on ambient concentrations resulting from short-term meteorological trends, base conclusions about ambient concentration trends on six years of data, rather than three years of data, as shown on page 166 in the DEIS and in the 2006 Air Quality Analysis Technical Addendum ("Addendum"). Specifically, Table A on page 4 of the Addendum shows decreasing PM_{10} concentrations from 2003 to 2005 at the Pampas Lane monitoring site. However, the maximum concentrations in 2006 as reported to EPA's Air Quality System were significantly higher than in 2005, suggesting that PM_{10} concentration trend at the Pampas Lane site may not be decreasing, as discussed on page 4 of the Addendum.

- Include a discussion of PM trends at monitors located closer to freeways to determine if PM concentrations are higher at these locations, exhibit different trends, and whether those concentrations are significantly influenced by freeway emissions.

On page 165 of the DEIS, the document correctly indicates that EPA and the CARB have not yet made a finding of significance for fugitive dust from paved and unpaved roads. However, EPA notes that in the draft South Coast $PM_{2.5}$ attainment plan released October 2006

(http://www.aqmd.gov/aqmp/07aqmp/07AQMP.html), road dust is a significant portion (approximately 20%) of the inventory.

Recommendation:
Consider the analysis in the South Coast $PM_{2.5}$ attainment plan (or subsequent revisions to this plan) in the development of the FEIS (or $PM_{2.5}$ hotspot analysis) to ensure that the assumptions used are consistent with those in the South Coast $PM_{2.5}$ attainment plan regarding the impacts of paved and unpaved road dust.

EPA notes that the section starting on page 166 of the DEIS discusses ambient $PM_{2.5}$ concentrations, although the section is titled "Baseline $PM_{2.5}$ emissions". In addition, the ambient $PM_{2.5}$ concentration trends do not necessarily reflect the trends in emissions from highway traffic.

Recommendations:

- Rename the section accordingly.

- Consider including $PM_{2.5}$ emission trends (including precursor trends) in the analysis for the project and/or regional motor vehicles and heavy duty diesel traffic to strengthen the conclusions made in this section.

Transportation Conformity

The DEIS references the 2004 Transportation Improvement Plan (TIP) and the 2004 Regional Transportation Plan (RTP). These are no longer the currently conforming documents.

Recommendation:
Since the project needs to come from a conforming RTP and TIP, reference the 2006 TIP to demonstrate that this project meets the transportation conformity requirements.

Construction Mitigation Measures

The DEIS includes SCAQMD requirements to reduce emissions. In addition to these measures, EPA recommends the following additional measures to reduce the impacts resulting from future construction associated with this project.

Recommendations:
Due to the serious nature of the PM_{10} and $PM_{2.5}$ conditions in the South Coast air basin (SCAB), EPA recommends that the best available control measures (BACM) for these pollutants be implemented at all times and that the FEIS and Record of Decision (ROD) incorporate the Construction Mitigation Plan. We recommend that (1) all applicable requirements under SCAQMD Rules, (2) the Caltrans Standard Construction Specifications and recommended measures listed on pages 264 and 265 of the DEIS, and (3) the following additional and/or revised measures be incorporated into a Construction Mitigation Plan.

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and require continuing adherence to manufacturers recommendations
- Require that leased equipment be 1996 model or newer unless cost exceeds 110 percent or average lease cost. Require 75 percent or more of total horsepower of owned equipment to be used be 1996 or newer models. If practicable, lease newer and cleaner equipment meeting the most stringent of applicable Federal or State Standards (see table: http://arb.ca.gov/msprog/ordiesel/documents/Off-Road%20Diesel%20Stds.xls). In general, only Tier 2 or newer engines should be employed in the construction phase, given the scale of the construction project, the level of the exposed population, and the high background levels of pollutants in the area.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to

increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)

- Utilize cleanest available fuel engines in construction equipment and identify opportunities for electrification. Use low sulfur fuel (diesel with 15 parts per million or less) in engines where alternative fuels such as biodiesel and natural gas are not possible.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintain traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors away from fresh air intakes to buildings and air conditioners.
- Reflect the SCAQMD's BACMs for fugitive dust mitigation listed in Tables 3-13.11 – 3-13.13 in the Mitigation Reporting Plan (i.e., should be enumerated as mitigation measures in the monitoring report on p. 264 and 265). Moreover, given the severity of the PM problem in the area and the size of the construction activity associated with the proposed project, commit to implement during all construction phases more than the minimum of one BACM in each category in order to reduce PM emissions to the minimum.

Environmental Justice

Executive Order 12898 on Environmental Justice addresses disproportionate and adverse impacts of federal actions on minority and low-income populations. The DEIS identifies Latino and low-income populations that exist within the vicinity of the transportation corridor. On Page 7 of the DEIS, the Table titled "Summary of Major Environmental Impacts" shows that there are no environmental justice impacts. This is inconsistent with Section 3-4.3 which concludes that under Alternatives 4 and 5, residential acquisitions that would occur as a result of the proposed project would affect minority and low-income communities. In addition, there may be additional environmental justice impacts found as a result of the additional environmental justice analyses that EPA is recommending below.

Recommendations:

- In Section 3-4.3 Environmental Justice, define the potential environmental justice concerns, which is the first step in an environmental justice analysis. Include a discussion of any environmental justice issues raised during the scoping meetings. Also briefly discuss the key issues where environmental justice is potentially a concern, such as relocation, air quality, noise, vibration, access to property, pedestrian safety, etc.

- Define the reference community, which, combined with defining the affected community, is the second analysis step. This is a critical step since the definitions are used to analyze whether there are disproportionately high and adverse human health or environmental

impacts by comparing the impacts to the affected population with the impacts to the reference community. The affected community is defined in Section 3-4.2.2 Affected Environment. The reference community (or comparison group) is not clearly defined, but generally is defined as the population that will benefit from the proposed project. For this project, the reference population could be defined as Orange County and Los Angeles County, or potentially, a greater area of Southern California. The Environmental Justice section should briefly summarize the affected community and reference community and contain a reference to Section 3-4.2.2 for more details.

- Thirdly, determine whether there are disproportionately high and adverse impacts, as detailed in the Council on Environmental Quality's (CEQ) "Environmental Justice: Guidance Under the National Environmental Policy Act" by considering the following three factors to the extent practicable for each of the identified potential environmental justice concerns:

  (a) Whether the health effects, which may be measured in risks and rates, are significant (as employed by NEPA), or above generally accepted norms. Adverse health effects may include bodily impairment, infirmity, illness, or death;
  (b) Whether the risk or rate of hazard exposure by a minority population or low-income population to an environmental hazard is significant (as employed by NEPA) and appreciably exceeds, or is likely to appreciably exceed, the risk or rate to the general population or other appropriate comparison group; and
  (c) Whether health effects occur in a minority population or low-income population affected by cumulative or multiple adverse exposures from environmental hazards.

- Accurately disclose whether or not the project will result in a disproportionate and adverse impact on minority and low-income populations. Ensure this conclusion is reported consistently throughout the FEIS. If a potential environmental justice issue has been identified, the FEIS should clearly state whether, in light of all of the facts and circumstances, a disproportionately high and adverse human health or environmental impact on minority populations or low-income populations is likely to result from the proposed action and any alternatives. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion.

- In the Environmental Justice section of the FEIS, briefly summarize the findings, provide a reference to other relevant sections of the document which describe the specific impacts in greater detail (such as the noise and air quality sections), and comment on whether or not there is an environmental justice impact for those potential environmental justice concerns which are discussed in detail in other sections of the document.

- Propose appropriate mitigation if disproportionately high and adverse human health or environmental impacts on minority populations or low-income populations are likely to result from the proposed action and any alternatives.

Relocation

Section 3-4.3.3 Impacts states that residential acquisitions under Alternatives 4 and 5 may affect a disproportionately high number of minority and low-income populations. Because impacts have been identified, EPA provides the following recommendations:

Recommendations:

- Include a discussion of mitigation measures to minimize the impacts of relocation on low-income and minority populations.

- Conduct interviews with all potential displacees who have special needs to ensure that issues are fully identified and a plan for assistance is prepared. Based on the results from the interviews, consider additional measures to minimize the impacts of relocation, such as providing translations services, transportation to visit potential replacement housing, and/or extra relocations specialists to work with these communities, etc. EPA's recommendations are consistent with the Caltrans Right of Way Manual, Chapter 10 Relocation Assistance and Housing Programs (http://www.dot.ca.gov/hq/row/rowman/manual/). In addition, the Relocation Impact Report requires inclusion of a statement of how relocations will occur in a way that minimizes hardships. Please include this statement in Section 3-4.3.4.

Waters of the United States

Under Section 404 of the Clean Water Act, only the project alternative that represent the least environmentally damaging, practicable alternative may be authorized (40 CFR 230). The DEIS does not quantify the approximate area of waters of the United States (U.S.), including wetlands, that occur within the right-of-way of the proposed improvements, nor does it quantify the potential impacts to these waters from each alternative for a comparative analysis. The DEIS also does not provide a sufficient description of the waters of the U.S. in the project area.

Recommendations:

- Provide a baseline assessment of the functions and values of the waters of the U.S. in the project area.

- Quantify (i.e., acreage) anticipated temporary and permanent impacts in waters of the U.S. in each identified water of the U.S. for each alternative comparatively.

- Identify specific actions that will occur in each identified waters of the U.S. (i.e., number of bridge replacements, culvert expansion, dewatering activities) per alternative.

- Include the estimated acreages of temporary and permanent impacts and specific actions for affected waterbodies in a table to provide a visual comparison of each alternative.

- Verify that potentially jurisdictional roadside drainages or wetlands that connect to the identified streams and river are not in the project area. If this information is addressed in

the Natural Environment Study Memo (Memo), then the field techniques to determine jurisdictional waters and results detailed in the Memo should be briefly summarized in the FEIS.

- Describe specific avoidance and minimization measures and proposed best management practices (BMP) to reduce impacts to waters of the U.S. and to address increased stormwater.

- Consistent with CEQ's guidance, present all reasonable mitigation features in the FEIS. Describe the effects the project will have on specific functions and values and how the proposed mitigation will offset those impacts. The DEIS does not describe functions and values that the project may affect, and how the mitigation measures will compensate for the lost functions and values. If it is determined that mitigation is not warranted, then the FEIS should specifically state this and the reason mitigation is not required.

Threatened and Endangered Species

The DEIS indicates the proposed work does not include activities in the San Gabriel River (removal of trees), resulting in no effect to listed species which may utilize riparian areas in the river. However, the document does not discuss whether neighboring construction activities would result in impacts that may affect or indirectly affect listed species or whether it is known if the riparian habitat is occupied habitat by these species. Table 3-19.1 of the DEIS identifies least Bell's vireo and southern willow flycatcher may potentially be present in the area due to the presence of riparian habitat. EPA further notes that Table 4-2 on p. 233 indicates that least Bell's vireo is found north of Whittier Boulevard in the San Gabriel River. During a conference call on January 8, 2007 between EPA and Caltrans staff, Caltrans staff indicated that the riparian habitat is different in that area since the river is dammed and that listed species are not known to occupy riparian areas in the project vicinity.

Recommendation:
Provide a discussion of the potential for listed species to occur in the riparian areas of the San Gabriel River and whether neighboring construction activities (noise, staging) would affect or indirectly affect these species. If species are not known to occupy this reach of the river or if neighboring construction activities would not result in an effect to these species, then this should be specifically stated in the FEIS and substantiated with supporting documentation.

Comparison between Alternatives

For several of the human, physical, and biological environment factors, the DEIS does not effectively distinguish the differences in impacts between the alternatives, often lumping discussions of Alternatives 2 and 3 and Alternatives 4 and 5, or eliminating discussion of Alternatives 2 and 3 entirely, making it difficult to easily evaluate their comparative merits. Per 40 CFR 1502.14, environmental impacts of the proposal and the alternatives should be presented in comparative form.

Recommendation:
Ensure analyses and impacts of each reasonable alternative are presented in comparative form, sharply defining the issues and providing a clear basis for choice among options. If impacts are expected to be minor or insignificant for an alternative, specifically disclose this in the FEIS with the result substantiated with supporting documentation.