Reading file
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

August 11, 2004

Maiser Khaled
Federal Highway Administration
California Division
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Subject: Draft Environmental Impact Statement/Subsequent Environmental Impact Report for the South Orange County Transportation Infrastructure Improvement Project (CEQ #40213)

Dear Mr. Khaled:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 1508) and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

The Federal Highway Administration (FHWA) and the Transportation Corridor Agencies (TCA) propose a 16-mile toll road in South Orange County connecting Interstate 5 at the San Diego border to State Route 241, also known as the Foothill North Transportation Corridor. The proposed project will require an Individual Permit to discharge fill into waters of the United States under Section 404 of the Clean Water Act. Therefore, the development of this Environmental Impact Statement (EIS) has followed the NEPA/Section 404 Integration Process for Transportation Projects Memorandum of Understanding (NEPA/404 MOU). The objective of this MOU is to coordinate the requirements of NEPA and Section 404 concurrently in the development of the EIS. TCA has used the framework of the NEPA/404 MOU to create an interagency forum, the SOCTIIP Collaborative, during the development of the EIS. As a result, TCA and FHWA have developed a thorough environmental document that takes into consideration a long history of resource and transportation agency input.

Some of the specific contributions of the SOCTIIP Collaborative as reflected in the Draft EIS are: the analysis of a wide range of alternatives, including non toll road alternatives; the reduction of environmental impacts through the refinement of the toll road alternatives; and a series of sensitivity analyses to test the changes in the environmental impacts of the project under different land use scenarios. In addition, many other issues raised early on by the Collaborative members have been addressed through this forum. EPA believes that the quality of the DEIS, given the size and complexity of the proposed project and the potential environmental impacts, reflects the significant efforts of FHWA and TCA to apply the input of the Collaborative.

While EPA has actively participated in the Collaborative for several years, there are areas where we continue to have concerns about the environmental impacts of the project and the information provided in the Draft EIS. Because of the scale and location of the proposed project, each alternative will have significant impacts to the surrounding community and natural resources. TCA has worked to minimize these impacts. However, significant environmental effects would still result from the proposed project. Specific areas of continuing concern to EPA include direct and indirect impacts to water resources, impacts to water quality from construction and operation, air quality impacts, and cumulative impacts to habitat and species. Therefore, based on our review of the document, EPA has rated the EIS as EC 2, Environmental Concerns Insufficient Information. (Please see the attached summary of EPA's rating factors.)

The next phase in the NEPA/404 MOU process, prior to the publication of the FEIS, is the identification of the least environmentally damaging practicable alternative, as defined by the Section 404(b)(1) Guidelines, and the development of a conceptual mitigation plan for impacts related to the Individual Permit. Because of the major changes anticipated in the landscape in South Orange County, due to both the proposed project and the development of Rancho Mission Viejo, appropriate mitigation for this project will be crucial to maintain ecological functions in South Orange County. Development of the Section 404 conceptual mitigation plan, as well as other mitigation required under Section 7 of the Endangered Species Act and State law, will need to be closely coordinated with the South Orange County Special Area Management Plan (SAMP) under development by the Army Corps of Engineers for the preservation of water resources and the South Orange County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) currently under development by the California State Department of Fish and Game and the U.S. Fish and Wildlife Service.

EPA recommends that FHWA and TCA work closely with the SAMP and NCCP/HCP planning processes to ensure that mitigation commitments support the broader conservation goals of the SAMP and NCCP/HCP. An area of particular concern to EPA in the development of mitigation for SOCTIIP is ensuring the establishment of long-term funding and maintenance plans for the proposed mitigation. We request that specific mitigation strategies and maintenance plans be included in detail in the FEIS.

EPA looks forward to working with FHWA and TCA through the process of identifying appropriate mitigation and remains committed to an active role in the SOCTIIP Collaborative. We appreciate the opportunity to review this DEIS. When the Final EIS is released for public review, please send two copies to the address above (mail code: CMD 2). If you have any questions, please contact me at (415) 972-3843. Your staff may contact Liz Varnhagen at (415) 972-3845 or Steven John at (213) 244-1804, the lead reviewers for this project.

Sincerely,

Enrique Manzanilla, Director
Cross Media Division

Enclosures:

Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: James Brown, Transportation Corridor Agencies
Macie Cleary Milan, Transportation Corridor Agencies
Gary Winters, Caltrans Headquarters
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David Turk, U.S. Army Corps of Engineers, Los Angeles District Office
Susan DeSaddi, U.S. Army Corps of Engineers, Los Angeles District Office
Jim Bartel, U.S. Fish and Wildlife Service, Carlsbad District Office
Jill Terp, U.S. Fish and Wildlife Service, Carlsbad District Office
Jim Omans, Marine Corps Headquarters
Larry Rannals, Marine Corps Base Camp Pendleton

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE SOUTHERN ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT (SOCTIIP)
AUGUST 6, 2004

I. AQUATIC RESOURCES

Modified Alternative Alignments

The DEIS documents the measures undertaken by the Transportation Corridor Agencies (TCA) to refine the alternatives under consideration to avoid impacts to waters of the United States, as well as other resources. Modifications of several of the proposed alignments to avoid significant aquatic resources, including special aquatic sites, in the Blind and Gabino Canyons (FEC-M and FEC-W) and to the wetlands of Cristianitos Canyon (A7C-FEC-M) resulted in substantial reductions in adverse impacts to these waters and wetlands. EPA commends the efforts of TCA to reconfigure these alternatives to comply with the requirements of the Clean Water Act Section 404(b)(1) Guidelines to avoid and minimize adverse impacts to waters and special aquatic sites of the United States (40 CFR 230.10[a]).

Need for Jurisdictional Delineations

The DEIS utilizes a planning-level delineation of waters of the United States to measure the project-related impacts to aquatic resources from the alternative alignments. While this planning-level delineation provides a relative measure of the acreage of impacts to water resources, this information does not provide the required accuracy or description of the types of aquatic habitats and the environmental settings impacted. To allow for a regulatory determination of the significance of the impacts to jurisdictional waters, specific acreage, locations, and classification of the types of aquatic resources affected is required. Specifically, information on the acres of special aquatic sites, open waters, and perennial, intermittent, and ephemeral streams is needed. Similarly, this information is necessary to evaluate the interconnection among aquatic resources and to evaluate how aquatic functions and values are affected by impacts to the surrounding environmental resources.

As stated in the DEIS, a three-parameter, field validated jurisdictional delineation will be prepared for selected alternatives (page 4.10-7). The three-parameter jurisdictional delineation will provide a basis for measuring direct, indirect, and cumulative impacts to specific categories of waters of the U.S. (e.g., riparian, freshwater marsh, open water, perennial streams, ephemeral and intermittent waters) and will result in a more complete assessment of the magnitude and scope of aquatic resource impacts. This jurisdictional information, in conjunction with the assessment of aquatic resource functions and values presented in the DEIS, will be used in the identification of the least environmentally damaging practicable alternative as required for permitting under the Section 404(b)(1) Guidelines (40 CFR 230)[1].

[1] TCA has been provided with a copy of the Corps of Engineers validated three-parameter jurisdictional delineation of waters of the U.S. prepared for Rancho Mission Viejo lands. The resource and regulatory agencies of the SOCTIIP Collaborative have coordinated with TCA on procedures to be followed to ensure complete coverage of the SOCTIIP planning area, including any additional delineation of waters of the U.S. to supplement the validated RMV jurisdictional delineation.

Recommendation:

The results of the validated jurisdictional delineation for all alternatives determined to be practicable should be presented in the Final EIS (FEIS) to demonstrate compliance with the Section 404(b)(1) Guidelines.

Aquatic Resources of National Importance

Information provided in the DEIS demonstrates the value and importance of the aquatic resources of southern Orange County. The Special Area Management Plan (SAMP) being prepared by the U.S. Army Corps of Engineers for the San Juan Creek and San Mateo Creek watersheds, and the wildlife, vegetation, and fisheries resource information provided in the southern Orange County Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) further document the high quality and importance of the aquatic and environmental resources in this area. The unique character and quality of many of the special aquatic sites and waters of the U.S. in the SOCTIIP study area qualify as "aquatic resources of national importance" based on a previous regulatory action by EPA and the Los Angeles District Army Corps of Engineers. Implementation of measures to avoid and minimize impacts to these aquatic resources, as well as compensatory mitigation to fully offset any remaining impacts, will be necessary to avoid a determination by EPA that the impacts to these aquatic resources of national importance are substantial and unacceptable. A Section 404 permit for discharge of fill material to waters of the U.S. cannot be issued for discharges where a determination of substantial and unacceptable impacts to nationally important aquatic resources has been made.

Recommendation:

TCA should work with the Collaborative to avoid and minimize impacts to aquatic resources of national importance to the greatest extent practicable. EPA is committed to working with TCA and the Collaborative to provide the highest possible level of protection for the aquatic resources of southern Orange County and the creation of a successful mitigation program. A description of this process and the conceptual mitigation plan should be included in the FEIS.

Distinguishing Special Aquatic Sites from Other Waters of the U.S.

In describing aquatic resources, the DEIS does not use terms or definitions that are consistent with Section 404 of the Clean Water Act or the 404(b)(1) Guidelines (e.g., page ES-41). It is unclear whether the terms "waters of the United States" and "wetlands" are used interchangeably. Wetlands and other special aquatic sites are a subset of the larger, inclusive list of all waters of the U.S. All of these special aquatic sites (i.e., sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, riffle and pool complexes), as defined in the 404(b)(1) Guidelines (40 CFR 230.40 - 230.45), are afforded higher levels of regulatory protection than other waters of the U.S. The lack of specificity of the DEIS language with regard to waters of the U.S. and wetlands prevents a reliable comparison of the impacts of the alternatives to aquatic resources or an assessment of compliance with the requirements of the 404(b)(1) Guidelines.

Recommendation:

To facilitate the comparison of impacts to all aquatic resources from the proposed alternatives, and to ensure that special aquatic sites receive the higher level of protection required under the 404(b)(1) Guidelines, the FEIS should be prepared using precise regulatory language and definitions of waters of the U.S. and special aquatic sites. Specifically, the FEIS should report the total impacts to all waters of the U.S., including any impacts to special aquatic sites. Additionally, the FEIS should quantify the impacts to specific types of aquatic resources (e.g., wetlands, open waters, ephemeral, perennial, intermittent streams) such that, for each alternative, the sum of the impacts to each type of aquatic resource equals the total impacts to waters of the U.S. affected by the proposed alternative.

Avoidance and Minimization and Project Design

The 404(b)(1) Guidelines require that impacts to waters of the U.S. are avoided and minimized to the maximum extent practicable, with a higher standard for demonstrating adequate avoidance and minimization of impacts to special aquatic sites than for other waters of the U.S. As noted previously, TCA has identified opportunities to avoid wetlands and other waters of the U.S. by redirecting several of the project alternative alignments away from known locations of aquatic resources. These efforts have substantially reduced the level of impacts to these regulated waters when compared to alternative alignments considered earlier in the SOCTIIP Collaborative process. Using the validated jurisdictional delineation of waters of the U.S. that will be incorporated into the FEIS, TCA and the Collaborative will have another opportunity to refine the alignments to further avoid aquatic resources.

Minimization of impacts to wetlands and other waters of the U.S. typically requires a higher resolution of design information than is included in the DEIS. In addition to a valid jurisdictional delineation, it is necessary to identify the specific location and nature of impacts to aquatic resources (e.g., direct fill, restriction of hydrologic connectivity). Minimization of impacts entails identifying opportunities to reduce the magnitude of avoidable impacts to aquatic resources. For example, spanning perennial, intermittent or ephemeral streams versus filling and rerouting the flow would reduce the level of impacts on the hydrology of the upstream and downstream portions of these waterways. Similarly, modifications to the citing, alignment, or design of a bridge, including the location and number of supporting structures, can result in minimizing the impacts from a necessary crossing of a waterway.

Recommendation:

While EPA recognizes the limitations on the DEIS to provide this greater level of detail, the FEIS should include more design information at each location of an impact to a wetland or other water of the U.S. The design information should be cross-referenced to a detailed description of the direct, indirect, and cumulative effects to the aquatic resource at the impact location. EPA is available to work with TCA and the Collaborative to conduct this higher resolution impact analysis to identify avoidance and minimization opportunities.

Mitigation – Coordination with SAMP and NCCP/HCP

As noted in the DEIS, the 404(b)(1) Guidelines require compensatory mitigation to offset adverse impacts to regulated aquatic resources. The typical goal of a compensatory mitigation program for wetlands and other waters of the U.S. is to ensure full replacement of lost aquatic functions and values. While the DEIS provides an inventory of measures intended to mitigate for construction-related impacts to aquatic resources (Section 8.10), a conceptual mitigation plan has not yet been developed.

The DEIS indicates that the proposed alternatives will significantly impact natural resources within the study area. Consistent with the large scale of impacts from the proposed SOCTIIP facility, the compensatory mitigation measures should be similarly broad. The specific identification of project-related impacts that will be possible with the higher resolution of jurisdictional delineation of waters of the U.S. and project design details will help facilitate the creation of a mitigation program to ensure full compensation for project-related environmental impacts.

A unique opportunity exists in the SOCTIIP project area to create a mitigation program that benefits the whole region. As mentioned in the DEIS, several large resource inventory and conservation planning efforts are under development in southern Orange County. The aquatic resource information provided by the SAMP, along with the wildlife, vegetation, and fisheries resource information provided in the NCCP/HCP, will be important tools for establishing a SOCTIIP mitigation program that will provide region-wide benefits.

Recommendation:

EPA encourages FHWA and TCA to identify mitigation measures that are consistent with the conservation, restoration, and protection recommendations of the SAMP and NCCP/HCP. The SOCTIIP mitigation program should prioritize areas that supplement the existing nature reserves identified in these plans, seeking compensatory mitigation that enhances and further protects these aquatic and environmental resources. Additionally, new reserves should be considered in areas of critical environmental importance. EPA encourages TCA to continue to work closely with the Collaborative in the drafting of the SOCTIIP compensatory mitigation and stewardship plan. A commitment to financially support the long-term maintenance of these mitigation strategies should be incorporated in the compensatory mitigation plan.

Compensation for Loss of Conservancy Land

TCA's successful effort to avoid adverse impacts to wetlands and other waters of the U.S. in Blind and Gabino Canyons by moving two of the proposed alternative alignments to the western portion of the Donna O'Neill Land Conservancy would adversely impact Conservancy lands.

Recommendation:

As part of the SOCTIIP mitigation program, EPA encourages TCA to evaluate opportunities (e.g., land acquisition) to offset the direct and indirect impacts of a SOCTIIP corridor within the current boundaries of the Conservancy. The FEIS should clearly identify the resource value of the Conservancy lands that are affected by the project. For unavoidable impacts to conservation areas with high resource value, replacement-to-loss mitigation ratios should be greater than 1:1. Similarly, EPA recommends that TCA identify and implement conservation measures to permanently protect the ecologically significant aquatic resources in Blind and Gabino Canyons that were avoided by these alignment modifications.

Offsetting Impacts to Water Quality

The DEIS cites the Runoff Management Plan (RMP) to demonstrate that none of the project alternative alignments would result in additional sources of polluted runoff requiring supplemental treatment (page 4.10-13). Similarly, the DEIS cites analyses for increases in runoff volumes and velocities, impacts on surface waters quality, and impacts on groundwater recharge for each alternative alignment with the conclusion that implementation of Best Management Practices (BMPs) would effectively reduce all impacts to insignificance.

However, the DEIS does not address the implementation of the BMPs analytically. It is important to demonstrate that the tools and methods that comprise the RMP or BMPs, when implemented, will be sufficient to minimize all water quality impacts. Without this information, it is not possible to evaluate whether impacts to water quality from construction and operation of the SOCTIIP facility will fully compensate for project-related impacts.

Further, if the RMP and BMPs are not able to fully minimize and offset adverse impacts to water quality, then it is likely that there will be significant cumulative adverse effects to water quality within the area from this project and other roads and development. This should be reflected in the cumulative impacts section (Section 5.3.8.1, page 5-31).

Recommendation:

A more thorough analysis of the potential water quality impacts and the set of BMPs that will minimize and offset the effects should be provided in the FEIS. The FEIS should fully disclose: 1) all water quality impacts for each segment corresponding to drainage basin, 2) avoidance measures employed, and 3) which BMP(s) would be used to rectify any corridor-related water quality impacts.

II. OTHER NATURAL RESOURCES

Impacts to Wildlife and Habitat

The DEIS identifies large-scale impacts to wildlife and habitat from the SOCTIIP alternatives, such as habitat loss and fragmentation and associated indirect impacts. The DEIS proposes extensive mitigation measures to offset many of these impacts. Most of the measures are labor- and cost-intensive, and focus on reducing impacts during project planning and

construction. Additional long-term commitments, such as providing fencing along the entire length of the alignment and studying and maintaining wildlife crossings, are very labor intensive and expensive, and will require continued funding. The DEIS does not specify how funding for these mitigation measures will be maintained by TCA in the near future or by Caltrans once operational responsibility for the proposed facility is transferred to the State.

The DEIS describes a 1,182-acre reserve referred to as Upper Chiquita Canyon Conservation Area that was set aside to offset impacts of past TCA projects, but which contains 327 credits still available to partially offset impacts from SOCTIIP. The DEIS description of this conservation area is general. The DEIS does not provide a thorough description of how those credits might be applied to specific native plants and animal communities impacted by SOCTIIP, the extent that these credits can offset impacts to biological resources from SOCTIIP, or a map of this conservation area relative to the SOCTIIP project.

Several of the SOCTIIP alignments traverse areas that are identified as open space for the Rancho Mission Viejo (RMV) proposed development. The DEIS does not indicate whether impacts from SOCTIIP would compromise mitigation credits anticipated by RMV. Further, how FHWA and TCA will compensate for encroachments in areas set aside specifically for the purpose of offsetting impacts from other projects is not discussed.

Recommendation:

To ensure success of the proposed mitigation in perpetuity, the FEIS should identify how mitigation commitments will be implemented for the long-term. There should be either a dedicated long-term funding source for Caltrans or a guarantee from Caltrans that their assumed responsibility to maintain structures and facilities for wildlife associated with the project, such as maintaining the fencing and wildlife undercrossings, would be a priority in times of fiscal limitations.

The FEIS should contain more details about the Upper Chiquita Canyon Conservation Area, including a map, and how the available mitigation credits will be applied within this conservation area.

The FEIS should assess the impacts of the proposed SOCTIIP alternatives on areas that are committed to serve as mitigation for other development projects, and specify how losses to those mitigation areas will be compensated.

<u>Impacts to Endangered Species</u>

Table 4.12-3, *Summary of Direct Impacts to Threatened and Endangered Species,* lists impacts in the form of numbers of individuals observed within the rights-of-way of the alternatives (page 4.12-51). While surveys are necessary to determine whether potential habitat is occupied by a threatened or endangered species, suitable habitat that could be impacted either directly or indirectly by each alternative should be considered in addition to the number of individuals observed.

Table 4.12-4, *Critical Habitat Impacts by Ultimate Project Alternatives*, which is an important parameter for comparing impacts among project alternatives, uses incompatible measures of quantifying impacts to critical habitat (page 4.12-52). For example, miles and kilometers are used to quantify the area of critical habitat that will be impacted by the proposed alternatives. Impacts should be expressed in terms of acres and hectares.

Recommendations:

The FEIS should assess the area of suitable habitat for all threatened and endangered species that occurs within and close to the right-of-way of each project alternative. The results should be presented along with the numbers of individuals observed, in Table 4.12-3.

Table 4.12-4 should be revised in the FEIS to include potential impacts to critical habitat in acres and hectares for all affected species.

III. CUMULATIVE IMPACTS

The cumulative impacts section presents a good discussion of the transformation of the landscape within the study area over time, including the potential future effects of planning processes related to RMV, SAMP, and NCCP/HCP. Given the anticipated environmental transformation, the document accurately captures the cumulative effect of future projects on environmental resources as "more profound" because remaining resources are already highly threatened (page 5-30). Also, we commend TCA and FHWA for the clear presentation of the cumulative impacts analyses including identifying the cumulative impacts study area for each resource, identifying the methodology used in the analyses, providing a comprehensive list of reasonably foreseeable projects, and identifying the current condition or health of each resource analyzed. This is a well structured cumulative impacts analysis, and should be considered as a model for other transportation projects.

Coordinating SOCTIIP with the RMV, SAMP, and NCCP/HCP

Section 5.3.9 discusses the significant adverse cumulative impacts to biological resources through habitat fragmentation and other direct and indirect impacts. The DEIS states that in many cases, the exact manner of mitigation for these impacts "cannot be determined at this time" (Sec. 5.3.9.3). Significant adverse impacts to the last, substantial undeveloped privately-owned land in southern Orange County underscore the importance and opportunity of actively working with RMV and the SAMP and NCCP/HCP planning processes to preserve landscape connectivity and ecological functions to the greatest extent possible in this rapidly developing area. Sections 4-10, -11, and -12 provide a thorough mitigation framework for impacts related to water, vegetation, and wildlife species. In addition, TCA has done an excellent job through the alignment refinement process to further avoid and minimize impacts to resources. A mitigation strategy that will accommodate development and also preserve southern Orange County's unique natural heritage is critical. Section 4.11.4 provides a good, general description of how mitigation

planning will be approached and coordinated with the SOCTIIP Collaborative, RMV and the SAMP and NCCP/HCP planning processes.

Recommendation:

Conceptual mitigation planning that addresses cumulative impacts should be included in the FEIS. After a preferred alternative has been selected, TCA and FHWA should develop a clear process for the development of mitigation plans in coordination with State and Federal agencies and other stakeholders. A description of this process and the resulting mitigation plans should be included in the FEIS. This kind of a mitigation planning approach is a tremendous environmental stewardship opportunity for the transportation agencies and the Collaborative.

Cumulative Impacts to Wetlands and Waters of the United States

The DEIS states that the implementation of existing regulatory requirements will ensure that there are no adverse cumulative impacts to waters of the U.S. from reasonably foreseeable projects. This statement is not accurate since adverse temporal, spatial, and ecosystem impacts will occur to wetlands and waters of the U.S. in the study area from reasonably foreseeable projects even though these impacts will be authorized.

The policy goal of federal regulatory agencies is "no net loss" of acreage and functions of aquatic resources. However, the loss of wetlands may be compensated off-site, replaced later in time, or represent different values and functions than the wetlands that are replaced. While the number of lost acres of wetlands may be compensated, there can still be a cumulative loss to the hydrologic system that supports wetlands and other waters of the U.S. Through this landscape transformation, vital wetland values and functions can be lost that result in adverse cumulative impacts.

Recommendation:

The DEIS should account for the adverse cumulative impacts that will accrue to wetlands and waters of the United States from temporal, spatial, and ecosystem changes to hydrologic systems resulting from past and reasonably foreseeable projects. The DEIS should specifically discuss cumulative impacts to hydrologic values and functions and whether implementation of the SAMP may alleviate some of these adverse cumulative impacts.

IV. AIR QUALITY

Inclusion of Re-entrained PM10 Emissions in the Regional, Sub-regional, and Hotspot Analyses

EPA understands from TCA that the regional/sub-regional analyses for particulate matter less than 10 microns in diameter (PM10) did not include paved and unpaved roadway particulate emissions, i.e., re-entrained PM10. The 2003 South Coast Air Quality Management Plan identifies re-entrained PM10 as representing approximately half of the total PM10 emissions in the South Coast Air Basin. This basin is designated a serious non-attainment area for PM10. Thus, the omission of re-entrained PM10 emissions could lead to a substantial underestimation

of PM10 emissions in the regional, sub-regional and hotspot analyses. The air quality analyses in the FEIS should include re-entrained PM10 emissions, with appropriate mitigation measures.

Recommendation:

The FEIS should include revised regional, sub regional and hotspot PM10 analyses that account for re-entrained PM10 emissions from both paved and unpaved roads. The re-entrained emissions can be estimated using the procedures approved by EPA for use in the South Coast Air Basin to estimate re-entrained PM10, or using EPA's AP-42 emission model.

Local Air Quality Impacts from Particulate Matter (PM10) Emissions

In addition to not including re-entrained emissions, the local air quality assessment in the DEIS does not follow the FHWA Guidance for Qualitative Project Level Hot Spot Analysis. Although characterized as a "qualitative" assessment, it needs to be analytical and approached through consultation with participating local, State, and Federal agencies.

Recommendation:

The FEIS should include a revised PM10 hotspot analysis. The analysis should follow the FHWA Guidance completely, including: a) using an analytical method agreed to through the consultation process; b) providing a reasoned explanation of conclusions based on data and analyses as specified in the Guidance (pertaining to re-entrained emissions, changes in VMT, speeds, routes of diesel vehicles, construction within the area, etc.); c) comparing build alternatives with the No Build alternatives; and d) explaining clearly whether the project would create or contribute to PM10 violations.

Local Air Quality Impacts from Carbon Monoxide (CO) Emissions

The Air Quality Technical Report concludes that none of the local air quality impacts of the build alternatives will result in an exceedance of either the 1- or 8-hour State or Federal CO air quality standards. Further, the DEIS states that none of the build alternatives will result in an adverse impact on CO levels (page 4-67).

EPA is concerned that these conclusions may be incorrect. The analyses that support the DEIS findings did not follow EPA required procedures and deviate from the methods outlined in the Caltrans Protocol. The methods that were used likely underestimate the CO emission levels.

Specifically:

- The CO receptors were located 8 meters or more from the roadway, however, EPA requires a distance of 3 meters. The Caltrans Protocol calls for using 3 meters and for consultation with the local air district should receptor placement become an important issue for project approvability, which may be the case for this project. CO levels measured at 8 meters, as done in the DEIS analysis, would generally be lower than CO levels measured at 3 meters.

- The DEIS uses four receptors per intersection. EPA recommends the application of at least 36 receptors placed 3 meters from the roadway in lines along roadway edges of the four legs of the intersection in question. Where there are more than 4 legs, additional receptors may be needed.
- The technical report indicates that because of the continuing trend of emissions reductions for CO, emissions per mile in 2025 are projected to be less than a third of what they will be in 2008. The worst case year would therefore be 2008. However, the analyses that were performed used 2025 as the worst case year. Again, CO levels would be substantially lower in 2025 than in 2008. Additionally, Caltrans requires analyzing emissions in the build year.
- The background level used for 2008 appears to be low. The DEIS used a value was interpolated between the 2.3 $\mu g/m^3$ for 2018 and 3.1 $\mu g/m^3$ for current conditions and came up with 2.4 $\mu g/m^3$ for 2008. Documentation to justify this background level should be provided.

Recommendation:

The FEIS should present the results of revised local CO emissions analyses that fully meet EPA's and Caltrans' requirements. The results should clearly demonstrate that the preferred alternative will eliminate or reduce the severity and number of CO violations and not cause or contribute to any new violations in the area. This is necessary to meet Transportation Conformity requirements.

Operational Nitrogen Oxides (NOx) Emissions Exceeding SCAQMD Thresholds

The forecast emissions modeling in the DEIS indicates that emissions of NOx are expected to exceed the thresholds set by the South Coast Air Quality Management District (SCAQMD). While the DEIS uses SCAQMD thresholds for findings of significance under the California Environmental Quality Act (CEQA), the DEIS does not indicate whether or not these emission levels may lead to an exceedance of National Ambient Air Quality Standards (NAAQS).

Although South Coast Air Basin is currently designated by EPA as a maintenance area for nitrogen dioxide (NO_2), high NOx emissions are of concern to EPA for two reasons. First, NOx is a primary precursor of ozone, for which the South Coast is in extreme non-attainment, and second, NOx emissions contribute to particulate matter concentrations, for which South Coast is currently in serious non-attainment for PM10, and in violation of PM2.5 standards.

The DEIS discloses that NOx emissions will be significant under CEQA. However, the DEIS does not recommend mitigation to offset this impact. Because NOx emissions are considered high relative to the SCAQMD threshold, the FEIS should identify ways of offsetting NOx emissions.

Recommendation:

Vehicle emissions of NOx are high when vehicles operate at fast speeds. To lower NOx emissions, FHWA, TCA, and Caltrans should consider options to reduce high vehicle operating speeds, such as lowering the design speed and speed limits of the proposed project, funding additional speed enforcement, and conducting driver education campaigns to reduce speeding. Mitigation measures identified in the FEIS should include commitments to be made in the Record of Decision (ROD). The FEIS should also specify whether the operational NOx emissions will contribute to exceedances of NAAQS.

Construction Equipment Emissions

The DEIS indicates that the emissions generated by construction of the SOCTIIP build alternatives are projected to substantially exceed the SCAQMD daily thresholds for all criteria pollutants. Because South Coast Air Basin is in non-attainment for ozone, PM10 and CO. and is a maintenance area for NO_2, all steps should be taken to reduce projected construction emissions to below the SCAQMD thresholds. While the DEIS identifies mitigation measures, the document does not include an analysis of the emissions reductions that would be accomplished through the application of these mitigation measures.

The DEIS appropriately references the SCAQMD Rule 403, which requires mitigation measures for construction emissions. As mitigation, the measures identified in Tables 1 and 2 from this rule will be implemented for dust control. Other air quality mitigation measures are proposed in AQ-3, -4, -5, -6 and -7, but these primarily address PM10 and not emissions of other criteria pollutants and precursors. There are many other measures that are available and appropriate to help reduce construction emissions.

Recommendation:

The FEIS should contain the specific measures that will be implemented for compliance with Rule 403 (April 2, 2004), and the document should identify the resulting emissions reductions that will accrue with these mitigation measures. Rule 403 requires a dust control supervisor for sites 50 acres or greater beginning January 1, 2005 and notification to SCAQMD or a SCAQMD-approved dust control plan.

The FEIS should include a more comprehensive list of air quality mitigation measures. The extent to which these measures will be adopted should be determined by an analysis of how the necessary reductions in various emissions will be achieved to reduce construction emissions below SCAQMD thresholds.

EPA encourages the development of a comprehensive Mitigation, Monitoring and Reporting Plan for all construction emissions. The Plan would be subject to review by SCAQMD, TCA, Caltrans, and EPA. The Plan should specify the implementation of most of the measures listed below which we believe are warranted for this project:

- Use ultra low sulfur fuel (< 15 ppm) in all diesel engines.
- Use add-on controls such as catalysts and particulate traps where suitable.
- Minimize engine idling (e.g., 5-10 minutes/hour).
- Use equipment that runs on clean, alternative fuels as much as possible.
- Use updated construction equipment that was either manufactured after in 1996 or retrofit to meet the 1996 emissions standards.
- Prohibit engine tampering and require continuing adherence to manufacturers' recommendations.
- Maintain engines in top running condition tuned to manufacturers' specifications.
- Phase project construction to minimize exposed surface areas.
- Reduce speeds to 10 and 15 mph in construction zones.
- Conduct unannounced site inspections to ensure compliance.
- Locate haul truck routes and staging areas away from sensitive population centers.

Updated Air Quality Information

Some of the information in Section 4.7.1.3 of the DEIS describing recent air quality attainment designations and new requirements is incomplete. For example, information that should be provided in the FEIS includes:

- The South Coast Air Basin was designated as a severe non-attainment area for the 8-hour ozone standard in April 2004 with the requirement to achieve expeditiously but no later than 2021;
- The South Coast is currently designated as a maintenance area for NO_2;
- The San Diego Air Basin was designated as non-attainment for the 8-hour ozone standard and is classified as a "basic" area with a 2009 attainment deadline;
- The San Diego Air Basin is a maintenance area for CO;
- The Clean Air Act requires EPA to designate non-attainment areas for particulate matter less than 2.5 microns in diameter (PM2.5) not later than December 31, 2004, and EPA has concurred with the State's recommendation that the South Coast and San Diego be designated non-attainment for PM2.5; and
- New conformity regulations for 8-hour ozone and PM2.5 were published on July 1, 2004.

Recommendation:

The FEIS should describe the most current information pertaining to attainment designations and conformity requirements within the South Coast and San Diego Air Basins for all criteria pollutants. The document should present the attainment designations for both 8-hour ozone and PM 2.5, and insert PM2.5 monitoring data into Table 4.7-2. The FEIS should describe the required implementation dates for the new designations and conformity requirements in the context of whether and how they will be applied in the planning and approval of SOCTIIP. In addition, if non-attainment designations for PM2.5 apply to the SOCTIIP study area, the FEIS should list and describe appropriate control measures that may be required.

Analysis of Air Toxics

EPA appreciates the analysis of diesel particulate matter in the document, as this information is an important part of public disclosure. We understand that the analysis was prepared as part of the CEQA evaluation, and as such, characterizes the emissions in terms of the unit risk estimate for diesel exhaust. To make the analysis more accessible to a broader audience, we prefer that the diesel PM be characterized as emission concentrations. In addition, the document should provide general information about the six priority mobile source air toxics (acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and diesel particulate matter) and their known health effects. While diesel PM is the most relevant mobile source air toxic to SOCTIIP, diesel PM is the only mobile source air toxic addressed in the document. Others should be addressed as well.

EPA does not agree with the statement, "there are currently no quantitative tools to assess the project's air toxics impact" (page 4.7-38). The MOBILE 6.2 model is capable of generating estimates of air toxics emissions, and there are a variety of dispersion models available. Although a regulatory standard to determine the significance of air toxics emissions does not exist at this time, a comparison of emissions and affected populations among the various project alternatives would be informative.

Recommendation:

For public disclosure, the FEIS should describe the six priority mobile source air toxics and their effects on public health. The document should also explain the importance of diesel PM emissions and its potential effects on health in reference to this project and sensitive populations within the study area. Projected diesel PM emissions should be presented as emissions concentrations.

The statement on page 5-51 of the Air Quality Technical Report, "This analysis is for information only as there is not yet wide agreement about the effects of DPM, or the methodology to analyze the effects" should be deleted. The health science surrounding diesel particulate matter is not speculative. (See www.epa.gov/otaq/toxics.htm)

V. TRAFFIC AND CIRCULATION

Induced Travel Demand Effect

The DEIS concludes that the induced travel demand effect is minor and states, "the SCSAM results indicated that the difference in the magnitude of improvement with and without feedback loops is no more than one percent of the peak hour or ADT volumes forecast on I-5, and less than one percent of the VMT or VHT forecast in southern Orange County" (p. 3-10). The data supporting this statement is not included in the DEIS or the Traffic and Circulation Technical Report.

Recommendation:

The data from the application of feedback loops that supports the statement referenced above should be included in the FEIS or the final Traffic and Circulation Technical Report. This data should also be accompanied by an explanation of how the percentage differences between the SCSAM results with and without the feedback loops were derived. This information is important because significant differences between the static and feedback loop analyses would indicate that the traffic benefits of the project may be overestimated and the air quality impacts underestimated.

Validation and Endorsement of the Traffic Study

The DEIS incorrectly states that the traffic study has the validation and endorsement of the SOCTIIP Collaborative (pages 3-3, 3-6). EPA as a Collaborative member provided input into the development of the traffic study. However, EPA did not validate or endorse the study.

VI. INDUCED GROWTH

The DEIS qualitatively describes how the SOCTIIP alternatives may induce new land development in the region. The discussion concludes that the project is not expected to influence the amount of growth in the study area with respect to the RMV property, but it may affect the location, timing, or localized intensity of growth in developing areas. The DEIS also concludes that SOCTIIP will not induce growth due to reduced commute time between northern San Diego or central Orange County, largely due to the length of time required to travel past Camp Pendleton.

EPA commends TCA for addressing this topic and presenting the findings in a manner that can be readily understood. However, the study would be improved with a more specific comparison of the potential of each of the SOCTIIP alternatives to induce or influence development. Through EPA's participation in the Collaborative, EPA has consistently recommended that the growth inducement analysis should be validated through a peer review process. EPA understands that a peer review process was initiated, but not completed, prior to the release of the DEIS. This peer review can validate or amend the findings of the induced growth analysis. This information is important, as the findings of the growth inducement analysis may be relevant in selection of the least environmentally damaging practicable alternative.

Recommendation:

The peer review of the growth inducement analysis should be completed. The Collaborative should have the opportunity to review and discuss the findings of the peer review panel as soon as they are available. The growth inducement chapter should be revised as appropriate and included in the FEIS.