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

May 22, 2009

David Valenstein
Federal Railroad Administration
1200 New Jersey Avenue S.E. MS-20
Washington, DC 20590

Subject: Draft Environmental Impact Statement for Proposed DesertXpress High-Speed Passenger Train from Victorville, California to Las Vegas, Nevada (CEQ # 20090087)

Dear Mr. Valenstein:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed DesertXpress High-Speed Passenger Train from Victorville, California to Las Vegas, Nevada (Project). Our review is provided pursuant to 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.

DesertXpress Enterprises Inc. (Applicant) proposes the construction and operation of a privately financed, fully grade separated, dedicated double track passenger-only railroad along the approximately 200-mile corridor between Victorville, California and Las Vegas, Nevada. The Project would generally follow the existing Interstate 15 (I-15) freeway and existing railroad corridors and rights of way. The Project would also include construction of a passenger station in Victorville, California, a passenger station in Las Vegas, Nevada, a maintenance and operation facility in the Las Vegas area and associated ancillary facilities needed to maintain and operate the proposed rail line. The Federal Railroad Administration (FRA) is the Lead Agency under NEPA.

Following our review of the DEIS, we have rated the document as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA Rating Definitions." Through the enclosed detailed comments, EPA provides specific recommendations regarding analyses and documentation to assist in assessing potential significant impacts from the proposed Project. Specifically, EPA is concerned with: 1) current justification for Project purpose, need, independent utility, and logical termini, 2) impacts to hydrology, aquatic resources, and wildlife movement, 3) construction and air quality analysis, mitigation, and impacts to sensitive receptors in the immediate vicinity of the Project and 4) cumulative impacts

from reasonably foreseeable future actions. We have also provided specific recommendations to address Project impacts due to induced growth, tunneling and station siting.

We understand that there are several high speed train projects underway or under consideration in the Project's vicinity, as well as proposals for additional highway lanes along the same project footprint (lanes along the I-15 in Nevada and a new transportation corridor to support the proposed Southern Nevada Supplemental Airport). Given multiple transport proposals in the same vicinity, EPA's enclosed detailed comments include a recommendation for a more comprehensive description and discussion of the compatibility of the regional rail and highway expansions that are proposed.

In addition, we request further justification for the project's western terminus in the community of Victorville rather than other locations further southwest that are closer to the larger population centers surrounding Los Angeles and existing transit connections. Siting the western terminus in Victorville will require most travelers to drive personal vehicles to access the train, further reducing the potential benefits of reducing vehicle miles traveled in southern California.

Given competing rail projects currently under consideration, we believe it is imperative that FRA and the Applicant coordinate with other lead agencies and stakeholders to determine the most appropriate rail network siting and station locations for the San Bernardino County and Clark County region. We are supportive of a high speed rail network that can reduce vehicle miles traveled so long as it is planned well. In order to better understand how the proposed Project fits into FRA's vision for a high speed rail network in the region, we request a discussion with FRA.

We appreciate the opportunity to review this DEIS. When the FEIS is released for public review, please send one copy to the address above (mail code: CED-2). If you have any questions, please feel free to contact Connell Dunning, Transportation Team Leader, at 415-947-4161, or Tom Plenys, the lead reviewer for this Project. Tom can be reached at 415-972-3238 or plenys.thomas@epa.gov.

Sincerely,

/S/ Connell Dunning for

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Attachment: EPA's Detailed Comments

CC: Dan Leavitt, California High Speed Rail Authority
Mehdi Morshed, California High Speed Rail Authority
Jane Hicks, U.S. Army Corps of Engineers
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Gary Sweeten, Federal Highway Administration
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Trais Norris, Caltrans
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Brad Hardenbrook, Nevada Department of Wildlife
Lewis Wallenmeyer, Clark County Department of Air Quality and Environmental Management
Del Abdalla, Federal Highway Administration
Bill Thompson, Nevada Department of Transportation

US EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE DESERTXPRESS HIGH-SPEED PASSENGER TRAIN FROM VICTORVILLE, CALIFORNIA TO LAS VEGAS, NEVADA, MAY 22, 2009

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed DesertXpress High-Speed Passenger Train from Victorville, California to Las Vegas, Nevada (Project). If properly planned, EPA supports the concept of high speed passenger trains in our region that can provide an alternative to increasing vehicle miles traveled and lead to reduced environmental impacts. Additionally, we support the electric multiple unit (EMU) locomotive technology versus the diesel electric multiple unit (DEMU) technology due to clear capacity, speed, air quality and climate change benefits. The FEIS should clearly summarize these benefits in the Final Environmental Impact Statement (FEIS).

EPA recommends that the FEIS provide additional analyses (including any necessary supporting documentation) and identify specific minimization or mitigation measures, as appropriate, to support findings of minimal or no impacts regarding the issue areas below. (Specific recommendations are included in the following detailed comments.)

- Project Purpose, Need and Independent Utility
- Aquatic Resources and Hydrology
- Wildlife
- Air Quality (including impacts from construction and mobile source air toxics)
- Cumulative Impacts, specifically related to future rail expansion
- Environmental Justice
- Growth-related Analysis
- Energy Resources
- Tunneling Methodology and Impacts
- Station Siting

Project Purpose, Need and Independent Utility

Justification of logical terminus at Victorville and Project Independent Utility

The proposed Project is to construct a new 200-mile passenger railroad line following the Interstate 15 (I-15) corridor between Victorville, California and Las Vegas, Nevada. The Project is a privately financed, steel-wheel on steel-rail high speed train, with proposed stations in Victorville and in Las Vegas. Based on the information provided in the DEIS, there is insufficient information to support the western project terminus at Victorville. We request further justification for the Project's western terminus in the community of Victorville rather than other locations further southwest that are closer to the larger population centers surrounding Los Angeles and existing transit connections. Siting the western terminus in Victorville will require most travelers to drive personal vehicles to access the train, further reducing the potential

benefits of reducing vehicle miles traveled in southern California. If reasonably foreseeable improvements or expansions are proximate to DesertXpress, such as an expansion over the Cajon Pass into the Los Angeles Basin, the DEIS should have analyzed these future improvements in the DEIS.

The DEIS mentions the Project could be connected to the Los Angeles Basin initially by extending Metrolink Commuter Rail service from its present terminus in the City of San Bernardino to Victorville, or that the Project itself could be extended to Ontario International Airport, the San Bernardino Station and/or other communities in the Los Angeles Basin. The DEIS also indicates the Project could be extended in the future to Palmdale, California (approximately 50 miles west of Victorville) to connect to the planned state-wide California High Speed Train system. However, the DEIS clearly indicates that none of these possibilities are evaluated in the DEIS (at p. 1-9).

We recommend that the FEIS 1) clearly demonstrate the independent utility of the Project within its current geographic limits as it relates to the need for the Project and 2) fully justify the selection of Victorville as a terminus. If the Project need cannot be met without future planned improvements, the scope of the Project should be expanded accordingly, 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 the National Environmental Policy Act (NEPA). If the completion of the proposed Project from Victorville to Las Vegas triggers the need to improve the connection to the Los Angeles Basin, then the Project scope may need to be expanded. As a result, the NEPA evaluation should include the full extent of the planned railway corridors and how they will operate.

Recommendations:

- Include additional analysis and justification to sufficiently demonstrate the independent utility and logical termini of the proposed Southern California hub in Victorville as opposed to other locations west of Victorville that are closer to larger population centers and existing transit connections.
- 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 connect the railway system to the Los Angeles Basin, since these would be considered connected and similar actions (40 CFR 1508.25).

Project Viability and Need

The DEIS indicates that improvements to this corridor are considered necessary to provide for the existing and projected traffic demand attributed to large-scale growth and projected traffic along the Victorville to Las Vegas corridor. We commend FRA and DesertXpress Enterprises Inc. for including extensive projected ridership studies as part of the DEIS. However, we note the current ridership and market projections discussion in Section 2.2 is based on the DesertXpress Updated Ridership and Revenue Study prepared in December 2005 and the DesertXpress Ridership Forecast Review prepared in January 2008. In light of the major economic events since January 2008, the FEIS should include updated projections as a result of the recent economic downturn. The FEIS should fully discuss how future growth projections have been or could be significantly impacted by recent economic factors, such as the continued downturn in the housing market, the more recent credit crisis, and the sustained economic recession, which will likely have a slowing impact on growth in these areas as well as travel demand to and from Las Vegas.

Additionally, while the DEIS does mention the Southern Nevada Supplemental Airport (SNSA) at the Ivanpah location is expected to be built in the future, the DEIS does not clearly indicate the impact this airport would have on ridership projections along the I-15 corridor. The Southern Nevada Supplemental Airport is in the early stages of planning; however, we note that initial proposals for the airport include a separate multiple-lane transportation corridor to be built alongside Interstate -15.

Recommendations:

- Update all growth related projections to reflect the latest economic developments and ridership forecasts and update the evaluation of alternatives, as appropriate. The impact of these recent events on previous growth projections should be considered, and their relevance to the Project and future plans for passenger only transport in the region discussed. Each of the alternatives analyzed should be considered in light of the most recent forecasts.

- Clearly indicate by including a quantitative tabular summary how the SNSA, its associated transportation corridor, and future expansion of the I-15 freeway could affect future ridership growth projections along the I-15 Corridor and its impact on the Project's viability in future build years.

Relationship to Proposed High Speed Rail Projects

Given that the rail corridor under consideration for the Project could be connected to a broader system in Southern California, EPA recommends that the FEIS include a comprehensive summary of the proposed projects in their entirety to provide a better understanding of how this project fits into the greater regional setting of all future, related projects.

Further, as part of the Purpose and Need discussion, FRA highlights the lack of sufficient future funding for other regional interstate train strategies such as the California-Nevada

Interstate Maglev (Maglev) (at page 1-16). We also note that the Maglev project is not considered a reasonably foreseeable future action as part of the cumulative impacts analysis. Further, we note the determination by FRA that, realistically, both the Maglev project and the proposed Project would not move forward (at p. 1-17).

If the impacts from the Maglev project are not evaluated in this document, we request clarification from FRA regarding what future forum will provide a comparison of the two competing proposals and their impacts in order to best inform decision-makers about the two competing technologies.

The FEIS should discuss whether the recent American Resource Recover Act of 2009 (ARRA) may affect the ability of California and Nevada to accommodate the larger railway projects mentioned including the California High Speed Train project.

Logically, future projects that could connect the Los Angeles Basin to Las Vegas should be coordinated to ensure a comprehensive assessment of project improvements, potential resource impacts, and mitigation strategies that may result.

Recommendations:

- Include a comprehensive summary of the proposed projects in their entirety to provide a better understanding of how this project fits into the greater regional setting of all future, related projects.
- Clarify in what forum the environmental impacts of the proposed Project and the Maglev project will be compared.
- Discuss whether the recent ARRA may affect the ability of California and Nevada to accommodate the larger railway projects mentioned in the DEIS including the California High Speed Train project and the California-Nevada Interstate Maglev Train.
- Address the interrelationship and potential overlap of the proposed alternatives and technology to these, and other high speed rail proposals, in the Project area. The FEIS should identify alternatives that minimize impacts of the proposed train networks by coordinating the location of stations, parking lots, bicycle storage facilities, and additional infrastructure, where feasible.

Project Purpose and Analysis of Alternatives

The DEIS does not evaluate alternatives to meet the broader need to facilitate the transport of an increasing number of travelers to their ultimate destination in Las Vegas. Specifically, FRA's purpose statement (at p. 1-2) indicates the intention to provide reliable and safe passenger rail transportation between Victorville and Las Vegas that is a convenient alternative to automobile or air travel. This statement does not fully capture the foreseeable need to ensure travelers are able to reach their final destinations. For travelers, the ultimate destination will not be the Las Vegas station, itself, but, more likely, another location in the Las Vegas Metropolitan Area. Transporting passengers between the Victorville and Las Vegas stations via

a high speed railway should not be the sole objective of the Project. Instead, that potential solution should recognize and address the inextricable linkage with additional transportation modes needed to allow passengers to reach their final destinations. While the current Las Vegas Monorail is mentioned to be in close proximity to the proposed Las Vegas stations, there is no discussion or analysis of connecting the Project to this transportation mode (at p. 1-8).

New interchanges, new roads, dedicated utility corridors, or dedicated transit corridors between a station and the surrounding urban area are needs directly associated with the need to move people in the region. Such needs should be accurately reflected in the Purpose and Need section. The current DEIS does not address this. The environmental impacts of this associated infrastructure should also be considered in comparing the various alternatives. This information must be disclosed in the FEIS to inform the public and future decision-makers.

Similarly, the FEIS should evaluate on-site alternatives specific to a potential station location which could reduce environmental impacts in Victorville and Las Vegas. For example, this analysis should include an evaluation of siting decisions, design techniques, and comparison of transportation modes associated with a new station site which could minimize environmental impacts across a variety of resource areas.

Recommendation:

- FRA should revise the DEIS to reflect a broader purpose than I-15 capacity enhancements and should capture the need to facilitate transportation of travelers to and from their ultimate destinations in the Las Vegas Metropolitan Area. The environmental impacts of this associated infrastructure should also be considered in comparing the various alternatives.

Hydrology and Aquatic Resources

Hydrology

The proposed Project corridor will cross 260 ephemeral drainages and the Ivanpah Playa. Natural washes perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and are adapted to the unique conditions of these systems.

The FEIS should commit to the use of natural washes, in their present location and natural form, to the maximum extent practicable with the placement of adequate natural buffers for flood control. The FEIS should identify how hydrological connectivity along the Project corridor supports the intent to utilize natural stream channels where they can provide adequate protection from flooding. The potential damage that would result from altered, flat-bottomed washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems: adequate capacity for flood control, energy dissipation, and sediment movement, as

well as impacts to valuable habitat for desert species. The FEIS should provide adequate hydrological modeling to demonstrate that downstream flows will not be disrupted due to proposed changes to any natural washes, the creation of wetlands, or the excavation of large amounts of sediment.

Recommendations:

- Commit to the use of natural washes, in their present location and natural form, to the maximum extent practicable with the placement of adequate natural buffers for flood control.
- Identify how hydrological connectivity along the Project corridor supports the intent to utilize natural stream channels where they can provide adequate protection from flooding.
- Provide adequate hydrological modeling to demonstrate that downstream flows will not be disrupted due to proposed changes to any natural washes, the creation of wetlands, or the excavation of large amounts of sediment.
- Identify where construction of the Project may provide for an opportunity to improve obstructed natural flows resulting from I-15 construction.

Aquatic Resources

The purpose of the Clean Water Act is to restore and maintain the chemical, physical and biological integrity of waters of the United States (waters). These goals are achieved, in part, by controlling discharges of dredged or fill material pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves the Applicant's project purpose. In addition, no discharge can be permitted if it will cause or contribute to significant degradation of waters.

The delineation of the extent of waters, including wetlands, on the Project site has not yet been verified by the U.S. Army Corps of Engineers (USACE) (at p. 3.14-27). Therefore, the following statement, "Many of the washes in the study area do not meet the USACE definition of a water of the United States" should be removed (at p.3.14-27). Further, based on information provided in the DEIS, it is difficult to discern the extent of impacts to waters. According to Table 3.8-5 in the DEIS, direct impacts to drainages range from 8,424 to 10,993 linear feet for Alternative A and 12,049 to 14,618 linear feet for Alternative B. The proposed action would cross 260 ephemeral drainages and the Ivanpah Playa. Direct impacts include both permanent and temporary impacts to waters.

The DEIS only provides an estimate on the acreage of direct impact to waters in Segment 7 (Table 3.8-4). Indirect impacts were briefly discussed in the DEIS (at p. 3.14-64), but not quantified. Similarly, Tables 3.14-2 to 3.14-8 identifies the Biological Resources Affected by the Action Alternatives, but they appear incomplete. Specifically, not all of the tables provide

the row referred to as, "Sensitive Plant Communities and Wetlands" and Table 3.14-5 does not include the sensitive vernal pool species located within Ivanpah Lake south of Primm, Nevada (at p. 3.14-15). In order to adequately assess the impacts to waters, the DEIS should provide direct and indirect acreage impacts to waters. The DEIS should also differentiate between permanent and temporary impacts to waters as well as provide additional information to assess the indirect impacts to waters.

Recommendations:

- Remove the following statement, "Many of the washes in the study area do not meet the USACE definition of a water of the United States" (at p.3.14-27). Once the delineation of the extent of waters, including wetlands, on the Project site has been verified by the U.S. Army Corps of Engineers (USACE), FRA should update the information regarding estimated impacts to waters and provide this information in the FEIS. A jurisdictional determination by USACE is needed prior to publication of the FEIS in order to provide a determination of potential significant impacts and identify mitigation and avoidance measures in the design of the Project.
- Update the information provided in the FEIS so that estimated impacts are provided in acreage estimates. The FEIS should include estimates of acreages of direct and indirect impacts to waters.
- Differentiate between permanent and temporary impacts to aquatic resources.
- Update Tables 3.14-2 to 3.14-8 to provide the row referred to as "Sensitive Plant Communities and Wetlands" and include sensitive vernal pool species, as appropriate.

Pursuant to the Guidelines, the applicant bears the burden of clearly demonstrating that the preferred alternative is the least environmentally damaging practicable alternative (LEDPA) that achieves the overall project purpose, while not causing or contributing to significant degradation of the aquatic ecosystem. Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters resulting from each alternative considered. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, so long as it does not have other significant adverse environmental consequences. Only when an analysis is correctly structured can the applicant or the permitting authority be assured that no discharge other than the practicable alternative with the least adverse impact on the aquatic ecosystem has been selected (40 CFR 230.10(a)). In addition, the applicant must clearly demonstrate that alternatives that do not result in the discharge of dredged or fill material in aquatic sites are either not practicable, or have other significant adverse environmental consequences.

At this time, EPA believes that the alternatives analysis in the DEIS does not demonstrate compliance with the 404 (b)(1) Guidelines. The DEIS lacks an analysis of alternatives to minimize environmental impact. This includes modifications to avoid waters within segments and an analysis of design crossings (e.g., bridges, con spans, and culvert designs) to ensure identification of the LEDPA.

EPA offers the following recommendations to help facilitate compliance of the project with the Section 404 Guidelines:

Recommendation:

- The FEIS should include an evaluation of the project alternatives in order to demonstrate the project's compliance with the 404(b) (1) Guidelines and authorization of LEDPA. The alternatives analysis should include a reasonable range of alternatives that meet the Project purpose while avoiding and minimizing damage to waters. If, under the proposed project, dredged or fill material would be discharged into waters of the U.S., the FEIS should discuss alternatives to avoid those discharges.

Pursuant to the Guidelines, the applicant must mitigate for unavoidable impacts to waters. Based on a review of the DEIS, it appears the applicant only proposes to restore those waters that were temporarily impacted during construction. The applicant does not propose to compensate for permanent and indirect impacts to waters.

Recommendation:

- If a discharge is permitted, the FEIS should discuss how potential impacts would be minimized and mitigated. This discussion should include: (a) acreage and habitat type of waters of the U.S. that would be created, restored, or preserved; (b) water sources to maintain the mitigation area; (c) a revegetation plan utilizing native plants; (d) maintenance and monitoring plans, including performance standards to determine mitigation success; (e) an Adaptive Management Plan; (f) the parties that would be ultimately responsible for the plan's success; and (g) contingency plans that would be enacted if the original plan fails. Mitigation should be implemented in advance of the impacts to avoid habitat losses due to the lag time between the occurrence of the impact and successful mitigation.

Wildlife Impacts

Due to the high speeds anticipated from the proposed project, continuous fencing along the entirety of the DesertXpress corridor may be required to ensure public safety. This will affect wildlife movement corridors (1) where the alignment is not in an existing rail or highway corridor and would traverse natural areas, and (2) where habitat use in existing rights-of-way occurs across roads and rail lines currently unobstructed by fences. While EPA supports the placement of the project along an existing transportation network, we note that the project proposed to place a new barrier to wildlife movement that currently occurs across the I-15 between multiple desert wildlife management areas and the Mojave Preserve. The FEIS should address wildlife movement impacts associated with the proposal and present mitigating measures to maintain wildlife movement at specific locations along the corridor, especially where wildlife movement already occurs. Monitoring to determine where wildlife currently crossover the existing I-15 corridor is critical to determining where FRA and the Applicant should commit to

wildlife movement features within the design of the proposed project. In addition, proposed stream and ephemeral wash crossings should be designed to also maintain or improve existing wildlife passages.

EPA provides the following recommendations to be implemented by FRA in the FEIS. Much of the information identified below will contribute to a better understanding of the measures needed to reduce impacts to biological resources.

Recommendations:

- Expand upon Mitigation Measure BIO-20 to identify which wildlife species will experience barriers to movement across I-15 once a fully-fenced rail corridor is in place. The FEIS should include a commitment to incorporate into the design of the rail network specific wildlife crossing features that are developed with specific movement patterns for each species. Information such as roadkill data can inform placement of larger wildlife movement structures. Monitoring of wildlife usage of existing highway under- and over-crossings (remote camera, scat and tracking analysis, etc.) is important for designing how the new rail corridor can be designed to maintain existing movement.

- Incorporate goals and objectives developed for the California Missing Linkages Report and the California Essential Habitat Connectivity Project and identify how Project alternatives have been designed to allow for continued wildlife movement:
  http://www.dot.ca.gov/hq/env/bio/program_efforts.htm
  http://scwildlands.org/missinglinks/reports/download_missinglinkages.htm

- Use data developed for the statewide California Wildlife Action Plan and the Nevada Wildlife Action Plan to inform proposed wildlife crossings and mitigation. Identify in the FEIS the specific design changes proposed to avoid resources. Both wildlife action plans address at-risk species and provides range maps.
  http://www.dfg.ca.gov/wildlife/WAP/
  http://www.wildlifeactionplans.org/nevada.html

- In addition to reviewing the available data indicating where species ranges may be bisected by the DesertXpress corridor, EPA recommends that FRA facilitate a meeting of scientists and local experts to explore specific locations and design features for wildlife crossings that are needed. Specifically, FRA should coordinate directly with Nevada Department of Wildlife and California Department of Fish and Game to ensure that wildlife crossing structures are 1) designed appropriately for use by affected wildlife and 2) sited correctly to allow for most effective use by the full range of animals that currently cross the I-15 Corridor. We are available to assist in establishing an interagency meeting of wildlife experts.

- Identify the connections that would likely remain after construction of the Project and highlight these areas as "connectivity zones" for protection and preservation. In the

FEIS, identify specific commitments for preservation of these corridors through mitigation measures and cooperative agreements.

- As applicable, disclose how fencing the train route will affect wildlife movement and discuss how fencing for safety purposes will be integrated with proposed wildlife passages, such as culverts, bridges, viaducts, underpasses, and overpasses.

Proposed designs for the Project should avoid and minimize impacts to all federally threatened and endangered species, as well as BLM species of concern and state species of concern. The site of the proposed Project contains Big Horn Sheep, Desert Tortoise and the Mohave Ground Squirrel. Any mitigation measures that resulted from consultation with the US Fish and Wildlife Service to protect listed species should be included in the FEIS and, ultimately, the ROD. The FEIS should also clearly articulate under which alternatives Big Horn Sheep, Desert Tortoise and Mohave Ground Squirrel would be least impacted and to what extent.

Air Quality

Air Quality Analysis

Although the DEIS reports in Table ES-1 that the Project will have no adverse operational or construction impacts to air quality (except for NOx emissions if DEMU technology option is chosen), the document contains insufficient information to present this conclusion. The DEIS does not comprehensively assess the Project's operational and construction direct, indirect, or cumulative impacts to air quality. To address this insufficiency, the FEIS should include a complete description of potential impacts and commitments to reduce those impacts. In particular, EPA has concerns regarding:

1) the minimal mitigation measures to curb particulate matter (PM) and nitrogen oxides (NOx) emissions from construction equipment,
2) the absence of a thorough discussion of the localized PM_{10} air quality impacts,
3) the need for a more comprehensive examination of the emission offsets needed to meet general conformity,
4) the lack of an air quality impact assessment from fill and excavation transport, and
5) the need for a staging area plan which minimizes exposures to sensitive receptors and residents.

Emissions from diesel construction equipment, locomotives, haul trucks and other vehicles associated with this Project include PM, sulfur oxides, volatile organic compounds (VOCs), and NOx. VOCs and NOx are precursors to ozone. In March 2008, EPA further tightened the National Ambient Air Quality Standard (NAAQS) for ozone. The Mohave Desert Air Basin is currently within a non-attainment area for PM_{10} and 8-hour ozone. Clark County is currently within a non-attainment area for carbon monoxide (CO), PM_{10}, and 8-hour ozone. Note that the nonattainment boundaries do not follow the air basin or county boundaries and are different for each pollutant and area.

The DEIS includes an analysis of CO hotspot impacts but does not contain a qualitative analysis of localized PM_{10} impacts.

Recommendation:

- The FEIS should include an analysis of potential localized hotspot impact on PM_{10}.

The DEIS includes an assessment of the differences in emissions for DEMU and EMU technology options. The emissions differ significantly for NOx emissions, which is a precursor to ozone. Since the Clark County ozone nonattainment area is an area significantly impacted by upwind transport, the FEIS should include a discussion of the regional impacts of increased NOx emissions on the area's ability to attain the ozone standards.

Recommendation:

- The FEIS should include a discussion of the regional impacts of increased NOx emissions on the area's ability to attain the ozone standards

General and Transportation Conformity

On May 8, 2008, the Southern California Association of Governments adopted the 2008 Regional Transportation Plan (RTP). The 2008 RTP includes the motor vehicle emissions budgets in the 2007 South Coast State Implementation Plan for 8-hour ozone and $PM_{2.5}$ that EPA found adequate for transportation conformity purposes on May 6, 2008. EPA recommends that the FEIS describe whether the Project is included in the most recently conforming 2008 RTP. In addition, since the RTP covers only the onroad portion of the Project's emissions, the FEIS should evaluate the general conformity applicability for the other emissions associated with this Project (i.e., construction, rail emissions, etc.).

The FEIS mentions that the Project may be in conflict with the RTP currently under development by the Regional Transportation Commission of Southern Nevada which includes an expansion of I-15. It is not clear if this expansion project is included in the FEIS's assumptions for planned and programmed or unprogrammed projects or how if the potential I-15 expansion would impact estimated ridership levels for the Project.

Recommendations:

- FEIS should describe whether the Project is included in the most recently conforming SCAG 2008 RTP and Southern Nevada RTC RTP.
- FEIS should evaluate the general conformity applicability for the other emissions associated with the Federal action (i.e., construction, rail emissions, etc.) and include a discussion to this effect.

The FEIS indicates that under the DEMU technology option, the general conformity thresholds would be exceeded and that the purchase/acquisition of NOx emission offsets would

be required for the project to meet general conformity requirements. However it is not clear if NOx emission offsets are available in both ozone nonattainment areas covered by these increases.

Recommendation:

- The FEIS should include an analysis of the availability and feasibility of purchasing the needed NOx emission offsets.

Mobile Source Air Toxics

While we recognize the discussion of toxic air contaminants (TACs) in Section 3.11 (at p. 3.11-32) and the acknowledgement that the EMU technology option would not result in new TACs , the DEIS does not include an analysis of Project's impacts due to mobile source air toxics (MSATs), in particular, from construction activities in the vicinity of residential populations, the proposed 13,000 to 18,000 vehicle parking facility in Victorville and the 2,000 vehicle proposed parking facility in Las Vegas. The vehicular trips and to these large parking facilities and associated idling could produce concentrated localized air emissions in the station areas. Such facilities should be designed and located to avoid impacts to sensitive receptors.

A large number of recent studies have examined the association between living near major roads and various 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 MSATs, including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments.

For additional information on MSATs, please see EPA's MSAT website http://www.epa.gov/otaq/toxics.htm. MSAT analysis is further described in the March 2007 report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" conducted for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment and funded by the Transportation Research Board (http://www.trb.org/NotesDocs/25-25(18)_FR.pdf). Procedures for toxicity-weighting, which EPA has found to be especially useful for the targeting of mitigation, are described in EPA's Air Toxics Risk Assessment Reference Library (Volume 3, Appendix B, beginning on page B-4, http://epa.gov/ttn/fera/data/risk/vol_3/Appendix_B_April_2006.pdf).

Recommendations:

- In the FEIS, identify homes and sensitive receptors located within at least 200 meters from possible alternatives in Victorville, Baker, Barstow, and Las Vegas where there

would be increases in truck and construction traffic/idling, increased roadway and rail traffic, construction activities, vehicular traffic to and from parking structures and staging area activity, and compare these numbers between alternatives. If the Project would result in high average daily traffic (10,000 average daily traffic (ADT), for example), then the FEIS should at least identify the total tons per year anticipated for the six most significant MSATs, namely diesel particulate matter (DPM), acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene, for each alternative.

- Include an assessment of diesel emissions and provide plans for improving air quality through reducing diesel emissions during construction activities. EPA is available to work with FRA to evaluate the appropriate level of air quality analysis for this Project.
- Identify design alternatives and options to further minimize MSAT and localized air emission impacts including indoor air quality improvements for all sensitive receptors within the project area such as schools and day care facilities.

Construction Mitigation Measures

EPA commends FRA for incorporating mitigation strategies to reduce or minimize fugitive dust emissions. However, in addition to a fugitive dust control plan, this Project should incorporate more stringent emission controls for PM and ozone precursors for construction-related activity.

As previously mentioned, this Project is in a non-attainment areas for PM_{10} and ozone. Further, there may be sensitive receptors in the area of the construction activities, which are anticipated to last 24 to 30 months. There are additional mitigation measures that can be considered and applied to reduce emissions. Under NEPA, "all relevant, reasonable mitigation measures that could improve the project are to be identified. Mitigation measures must be considered even for impacts that by themselves would not be considered significant" (see Council on Environmental Quality (CEQ), 1981, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations").

All applicable state and local requirements and the additional and/or revised measures listed below should be included in the FEIS and ROD in order to reduce impacts associated with emissions of PM and other toxics from construction-related activities:

Recommendations:

Due to the serious nature of the PM_{10} and 8-hour ozone conditions in the Mojave Desert Air Basin and in Clark County, EPA recommends that the best available control measures (BACM) for these pollutants be implemented at all times and that the FEIS and ROD incorporate the Construction Emissions Mitigation Plan. At a minimum, these measures should be incorporated into the ROD. We recommend that all applicable requirements under local rules and the following additional measures be incorporated into a Construction Emissions 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 California Air Resources Board (CARB) and/or EPA certification, where applicable, 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. CARB has a number of mobile source anti-idling requirements. See their website at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. In general, only Tier 2 or newer engines should be employed in the construction phase.
- 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 incorporate these reductions into 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.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuels such as natural gas and electric.

- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains 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 and fresh air intakes to buildings and air conditioners.

Additionally, EPA is concerned about the selection of the staging areas and the potential impacts that may result to sensitive receptors. In light of the potential proximity of schools and other sensitive receptors, we are particularly concerned about the impacts to these areas resulting from the proposed Project.

Recommendation:

- The FEIS should describe the specific location for all staging areas to be used, and confirm that these locations would result in the least environmental impacts and disruption to sensitive receptors.

Finally, if specific mitigation measures are used for purposes of determining total emission levels, a firm commitment to implementing the mitigation measures should be included in the FEIS.

Recommendation:

- The FEIS should identify and commit to specific mitigation measures or specific emission reduction target levels not only for fugitive dust emissions, but also for exhaust emissions.

Air Quality Impacts Associated with Transporting Fill Material

The DEIS contains an insufficient analysis of potential emissions associated with the multiple trucking trips that may be needed to remove and transport fill as a result of tunneling activities. The DEIS also does not appear to include an estimate of the number of necessary truck trips, distance traveled and corresponding air emissions in section 3.13.

Recommendations:

- Quantify estimated fill from tunneling activities and the number of truck trips that would result
- Describe the methods, equipment to be used and location of final disposal for this material.
- Include a revised air quality analysis and updated emissions comparison to significance thresholds to account for the emissions from the truckloads required to transport fill, as well as additional fugitive dust associated with the new fill site.

- Commit to additional minimization measures for these emissions.
- Provide a quantification of (1) the additional air quality impacts associated specifically with the trucking of the fill and (2) the air quality benefits expected to be achieved by specific mitigation measures. If prior analysis of emissions and mitigation strategies has been conducted, update the FEIS to reflect this.

Greenhouse Gases

EPA commends FRA for including estimates of carbon dioxide emissions from the proposed Project. In addition, we recommend that the FEIS discuss the potential impacts of climate change on the Project as well as any mitigation measures that could reduce the Project's impact.

Recommendation:

- Identify specific mitigation measures needed to 1) protect the Project from the effects of climate change, 2) reduce the Project's adverse air quality effects, and/or 3) promote pollution prevention or environmental stewardship.

Cumulative Impact Analysis and Future Transportation Projects

While we recognize the detailed discussion of each resource area for the reasonably foreseeable projects mentioned in the DEIS, the cumulative impact section does not fully assess and quantify cumulative impacts associated with the Project, and does not link the Project's effects to the health of the affected resources. Cumulative impacts are defined in the Council on Environmental Quality's National Environmental Policy Act (NEPA) regulations as "the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 CFR 1508.7). The cumulative impact analysis should consider transportation and non-transportation projects and approved urban and transportation planning projects that are reasonably foreseeable and identified within city and county planning documents.

EPA recommends that the FEIS follow the guidance developed by Caltrans, the Federal Highway Administration (FHWA) and EPA for cumulative impact analysis as it can be applied to non-road projects. The FEIS and all future environmental analyses related to additional passenger transportation projects in the region (e.g. the California High Speed Train System, California-Nevada Interstate Maglev Train, SNSA and its associated road network) should provide a comprehensive description of the associated elements of all foreseeable future actions. Specifically, the FEIS should disclose to the public the cumulative impacts that will result, when considered with the all future railway and transportation projects in the Project vicinity. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR Part 1508.7). Even if impacts are considered insignificant from the Project itself, the FEIS must address whether there are "collectively significant actions" when multiple, reasonably foreseeable projects are considered together.

Incorporating this thorough analysis as part of this Project will help provide the context necessary to evaluate project related impacts into the future.

For example, the DEIS acknowledges that the Project in combination with the present and future projects would constitute cumulative air quality effects, but the DEIS concludes the Project would not substantially contribute to the cumulative air quality impacts since either locomotive technology option (diesel or electric) under consideration would not exceed criteria pollutant emission standards within the Mojave Desert Air Basin or within Clark County (at p. 3.16-41). The analysis is insufficient, however, in that it did not discuss the cumulative localized contributions to air emissions from concurrent construction or operations of the multiple projects described in the cumulative impacts analysis. The „Growth' subsection of the cumulative impacts analysis reads: "construction period jobs may have a more substantial effect on local growth especially if the construction period for the action alternatives overlaps with construction of several other large transportation and land development projects in the area" (at p. 3.16-20). The localized cumulative air quality impacts of such a scenario should be considered reasonably foreseeable and the FEIS should discuss the impacts of multiple construction projects overlapping.

Further, the cumulative impacts associated with the proposed Project may contribute to significant degradation of sensitive biological resources. There are a growing number of goods movement related projects in the High Desert area near Victorville. The High Desert is slated for major intermodal freight yards, developing into a significant inland port complex in the Antelope and Victor Valleys at the Palmdale Airport and the former George Air Force Base, now known as Southern California Logistics Airport. The area surrounding Southern California Logistics Airport is planned to be the largest fully-integrated commercial development in the region. These inland ports would receive freight from the ports of Los Angeles and Long Beach by rail and transfer the freight to trucks for distribution. The High Desert Corridor is also key for the future Victor Valley Beltway. As previously mentioned, the California High Speed Train system is another large scale projects planned in the vicinity of the Project.

Recommendations:

- Integrate all „reasonably foreseeable actions' as they relate to the proposed Project and fully describe the potential impacts of these options on future traffic volumes and emissions
- Conduct a thorough cumulative impact assessment for the FEIS. EPA recommends the use of the June 2005 *Guidance for Preparers of Indirect and Cumulative Impacts Analysis* developed jointly by Caltrans, FHWA, and EPA [http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm]. The guidance will assist in identifying cumulative impacts and preparing an analysis that is sound and well documented.

Environmental Justice

Executive Order 12898 on Environmental Justice addresses disproportionate and adverse impacts of federal actions on minority and low-income populations. The DEIS does a good job of looking at demographic and income data of the general population that resides along the proposed corridor alignments. While noise, traffic and air quality impacts are identified (at p. 3.1-61), the Environmental Justice analysis does not evaluate localized impacts from diesel emissions to minority or low-income communities in the immediate vicinity of the Project railway that could result from construction of the Project. The FEIS should identify a range of potential impacts associated with the various Project alternatives and should provide appropriate mitigation measures for any adverse impacts.

Recommendations:

- If a potential environmental justice issue is 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 or low-income populations is likely to result from the Project alternative, or from constructing any other alternatives proposed for analysis. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion.
- Briefly summarize the findings, discuss whether or not there are environmental justice implications associated with any of the potential impacts of the Project, and provide references to other relevant sections of the document that describe the specific impacts in greater detail (such as the noise and air quality sections).
- 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 or any of the alternatives.

Growth-related Impacts Analysis

Section 3.2, Growth, does not provide an estimate of urbanization associated with the high speed train station sites (at p. 3.2-20). Certain station sites may result in greater induced growth /urbanization than other station sites. The information regarding potential induced growth impacts due to specific station sites is informative for decision-makers and should be highlighted to better inform ultimate choice of station locations. In addition, because urbanization estimates attributed to some station sites could have a large impact on the projected urbanization, the FEIS should present a range of potential impacts, by resource, to each county, identifying low- and high-end estimates of potential urbanization.

Recommendations:

- Include a table of all proposed station sites with estimates of acres of induced growth/urbanization impacts associated with each location.
- Include specific mitigation measures, as appropriate, to address and offset growth-inducing impacts to San Bernardino and Clark counties

- Specifically, the FEIS should include strategies for addressing, planning for, and mitigating growth-related impacts in counties that will be most affected. The FEIS should also include references to the transit-oriented principles that FRA has developed as part of the California High Speed Train system

Energy Resources

It is our expectation that the Project will increase annual electricity use and decrease use of diesel fuel and gasoline. Successful implementation of the proposed Project depends on the availability of sufficient sources of energy. The FEIS should identify the number and capacity of energy facilities that were either operational or under construction as of 2008 and discuss whether the future supply is expected to be adequate to meet growth in demand, given the number of power plants planned. The energy analysis should take into consideration the cumulative impact of other planned projects that will also increase demand on the existing energy supply.

Recommendations:

- Identify the number and capacity of energy facilities that were either operational or under construction as of 2008 and discuss whether the future supply is expected to be adequate to meet growth in demand, given the number of power plants planned.
- Discuss the cumulative impact of other reasonably foreseeable projects that will also increase demand on the existing energy supply.

Tunneling Methodology and Impacts

The DEIS indicates that Segment 4 may require two tunnels of 5,000 feet and 1,300 feet in length (at p. 2-21). As applicable, the FEIS should identify the amount of material to be removed per mile of tunnel and where material will be disposed, reused or stored. Any impacts associated with the transport and storage of fill should be described and mitigated. The FEIS should discuss the tunneling methodology to be utilized and the corresponding environmental impacts. Identify specific design measures and options to insure that the full scope of environmental impacts associated with tunneling are considered in project design.

Recommendations:

- Discuss the methodology proposed for any design that involves tunneling (including equipment and planned locations for staging tunnel operations and methods for transportation of tunnel equipment) and quantify impacts expected (for example, amount of material removed per mile tunnel, impacts associated with storage of removed material, road access required, impacts associated with the transport of removed material, etc). Identify specific mitigation measures to reduce these impacts.
- Address the potential for tunneling to affect stream flows, riparian habitat, the direction of lateral movement of water through the soil profile, and the recharge of

shallow, unconfined aquifers. Identify specific design features to reduce these impacts.

Station Siting

A substantial benefit of a proposed high speed train corridor connecting Las Vegas to Victorville is the opportunity to provide improved transit services and to reduce VMT. EPA strongly supports including project elements that will further reduce VMT. In addition to assisting in demonstrating air quality conformity and opportunities for reducing auto trips, an effective passenger railway system incorporated into the initial design and construction of the Project may result in a build alternative that requires less build-out than currently proposed. Additionally, waiting to build transit options, such as stations for a link to rail or dedicated bus rapid transit, may lead to an increase in adverse air quality impacts resulting from passenger auto trips.

At a minimum, FRA should describe the timeline and threshold for railway improvements to be feasible as well as the resulting air quality impacts that the region will experience without transit. All transportation and transit system modifications considered specifically for this corridor Project should be fully described as elements of the build alternatives and included in an analysis of environmental impacts in the FEIS.

The FEIS should analyze and disclose the temporary and permanent environmental impacts of constructing stations, parking facilities, maintenance and storage facilities, power propagation infrastructure, and required road developments and modifications. The FEIS should demonstrate avoidance and minimization measures to reduce environmental impacts associated with the construction of passenger stations and maintenance facilities, such as multi-level parking structures as opposed to large expansive parking lots. The FEIS should identify where proposed stations, parking facilities, and additional required infrastructure will be located in the project corridor, and should disclose the associated impacts from station development on planned and unplanned growth.

Recommendations:

- Describe the timeline and threshold for railway improvements to be feasible as well as the resulting air quality impacts that the region will experience without transit.
- Demonstrate avoidance and minimization measures to reduce environmental impacts associated with the construction of passenger stations and maintenance facilities, such as multi-level parking structures as opposed to large expansive parking lots
- Identify parties responsible for mitigating the environmental impacts associated with the indirect and cumulative impacts of the projected land use changes.
- Minimize the number of parking spaces to the greatest extent possible at the station in order to facilitate the use of transit;
- Coordinate with other transit providers to maximize station access by transit;
- Provide accessibility to Metrolink's San Bernardino station to enhance rider access to the proposed line for Southern California without the need to drive to Victorville;

- Design the new facilities to be pedestrian and bicycle-friendly, in addition to linking with other modes of transit; and
- Support policies that will increase density and mixed-uses in the station areas.