

US EPA ARCHIVE DOCUMENT



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

December 5, 2008

Mr. Abdelmoez Abdalla
Environmental Program Manager
Federal Highway Administration
705 North Plaza Street, Suite 220
Carson City, NV 89701

Subject: Draft Environmental Assessment for Interstate 15 South Corridor
Improvement, Sloan Road to Tropicana Avenue, Clark County, Nevada

Dear Mr. Abdalla:

The 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 Nevada Department of Transportation (NDOT), with the Federal Highway Administration (FHWA), is proposing to expand Interstate 15 from 6 traffic lanes to 10 traffic lanes between Sloan Road and Tropicana Avenue (with 2 collector-distributor lanes from Blue Diamond Road to Tropicana Avenue), and to expand Las Vegas Boulevard from 2-4 traffic lanes to 6 traffic lanes. The project would also construct three new interchanges, two new overpasses, and a park-and-ride lot, and improve other interchanges and an overpass.

EPA has concerns about the project's impacts to air and water quality, as well as indirect and cumulative impacts, and finds that the analysis included in the Draft Environmental Assessment (EA) is not sufficient to support a "Finding of No Significant Impact" (FONSI). The enclosed detailed comments provide specific recommendations regarding what analyses and documentation are needed prior to making an assessment of potential significant impacts. These additional analyses and documentation will assist NDOT and FHWA in determining whether a FONSI can be supported at the completion of the Final EA, or whether an Environmental Impact Statement is warranted. We are particularly concerned about potentially significant mobile source air toxics impacts to residents near the proposed project.

EPA appreciates the opportunity to review this Draft EA. When the final environmental document is released for public review, please send two copies to the address above (mail code: CED-2). If you have any questions, please contact Carolyn Mulvihill of my staff at 415-947-3554 or mulvihill.carolyn@epa.gov.

Sincerely,

/s/

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

Enclosures:

EPA's Detailed Comments

Zhu *et al.*, *Atmospheric Environment*, Volume 36, pages 4323-4335, 2002

Zhou and Levy, *BMC Public Health*, Volume 7, 2007

cc: Steve Cook, Nevada Department of Transportation
Lewis Wallenmeyer, Clark County Department of Air Quality and Environmental
Management

Determination of Significant Impacts pursuant to NEPA

The Draft Environmental Assessment (Draft EA) was prepared to analyze the impacts of expanding Interstate 15 from Sloan Road to Tropicana Avenue (I-15 South), a distance of 12 miles. The project proposes to expand I-15 South from 6 traffic lanes to 10 traffic lanes (with 2 collector-distributor lanes from Blue Diamond Road to Tropicana Avenue), and to expand Las Vegas Boulevard from 2-4 traffic lanes to 6 traffic lanes. The project would also construct three new interchanges, two new overpasses, and a park-and-ride lot, and improve other interchanges and an overpass.

An environmental assessment, in part, serves to: 1) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) and 2) aid an agency's compliance with the National Environmental Policy Act (NEPA) when an EIS is not necessary (see 40 CFR 1508.9). Given the magnitude of the proposed project, the Draft EA does not provide sufficient analyses nor identify adequate mitigation measures to support a determination that the project will result in no significant impacts.

EPA recommends that the Federal Highway Administration (FHWA) and the Nevada Department of Transportation (NDOT) perform additional analyses to determine whether significant impacts exist, particularly with regard to mobile source air toxics. If the analyses indicate that the project has the potential for significant impacts, an EIS must be prepared to document and address those impacts. If the analyses indicate no significant impacts, then the Final EA and FONSI should include documentation supporting those conclusions, and identify specific minimization or mitigation measures where necessary. Specific recommendations for analyses are included below.

Mobile Source Air Toxics

Mobile source air toxics (MSAT) have been and continue to be a topic of discussion between EPA and FHWA, at both the regional and national level. EPA has a particular interest in MSAT impacts in the Las Vegas area due to existing air quality in the area, the proximity of highway expansion projects to sensitive receptors, and the fact that MSAT concerns have been raised in the past for other projects.

MSAT impacts were the primary concern of the Sierra Club in its legal challenge to a US 95 widening project in Las Vegas (*Sierra Club v. Mineta*, D. Nev., No. CV-S-02-0578-PMP-RJJ, settlement announced 6/27/05). The settlement agreement in this case requires FHWA and NDOT to install air pollution monitoring and filtration systems at three schools adjacent to US 95, relocate portable school buildings and playgrounds, help redesign a nearby high school to minimize exposures, and retrofit diesel school buses to reduce emissions.

The Draft EA states that Year 2030 traffic volumes along the project corridor will exceed 200,000 vehicles per day along most segments of the I-15 South corridor, with a maximum of 546,000 vehicles per day adjacent to the Las Vegas strip. The Draft EA also states that Segments 9 and 10 of the corridor, from St. Rose Parkway to Blue Diamond Road, have sensitive receptors within 600 feet (approximately 183 meters) of the mainline. Many studies have measured elevated concentrations of pollutants emitted directly by motor vehicles near large roadways. These elevated concentrations generally occur within approximately 200 meters of the road, although the distance may vary depending on traffic and environmental conditions. Pollutants measured with elevated concentrations include benzene, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen dioxide, black carbon, and coarse, fine, and ultrafine particles. For a thorough review of near-roadway monitoring studies, see Section 3.1.3 of EPA's "Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2007, <http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm>).

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>).

For most transportation projects, EPA recommends that the following levels of MSAT analysis be considered (in order of increasing complexity):

1. Qualitative discussion,
2. Quantify emissions,
3. Toxicity-weight emissions,
4. Dispersion modeling, and
5. Risk assessment.

These analyses are 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](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).

In general, when considering appropriate and useful levels of analysis, EPA recommends that the lead agency consider the following:

- The likelihood of impact and potential magnitude of the effect, including both the magnitude of emissions and the proximity of the project emissions to potential residential and sensitive receptors, such as schools, hospitals, day care facilities, and nursing homes;
- The severity of existing conditions;
- Whether the project is controversial and whether air toxics concerns have been raised by the public for this project or for other projects in the area in the past;
- Whether there is a precedent for analysis for projects of this type, either under NEPA or other environmental laws; and
- Whether the analysis could be useful for distinguishing between alternatives, informing design changes, and targeting mitigation.

For this EA, FHWA and NDOT performed an MSAT “emissions burden” analysis using MOBILE6.2 to estimate the total daily MSAT emissions along individual segments of I-15. EPA commends FHWA and NDOT for performing this initial analysis; however, because MSAT impacts tend to be highly localized, an analysis of total daily MSAT emissions along segments of the corridor does not capture the potential for MSAT impacts that are likely to occur at specific locations along the corridor. This information should be determined through dispersion modeling. Without dispersion modeling, a determination that no significant impacts exist is challenging to justify.

Other transportation agencies have either recently performed, or plan to perform, analyses of localized MSAT impacts for transportation projects. Dispersion modeling and a health risk assessment was performed by the Alameda Corridor Transportation Authority for the Schuyler Heim Bridge Replacement and SR-47 Expressway Project in Los Angeles County (See the Appendix Q, www.acta.org/projects_planning_SR47.htm), and the California Department of Transportation (Caltrans) plans to perform dispersion modeling and a health risk assessment for the Interstate 710 Corridor Project, also located in Los Angeles County. EPA would be happy to work with NDOT and FHWA to identify how these examples relate to the proposed I-15 project.

EPA has previously offered technical assistance to NDOT and FHWA regarding available modeling tools and other data necessary for appropriate analysis of MSAT impact. We continue to offer this assistance for this project and other NDOT projects. EPA believes a robust MSAT analysis should be undertaken for the proposed I-15 project because 1) the project is a potentially large expansion of an already major freeway; 2) the project is in close proximity to residences and other sensitive receptors; and 3) there is an increasing public awareness of air quality impacts associated with transportation projects. We recommend that NDOT and FHWA perform dispersion modeling to determine potential localized impacts to sensitive receptors, given the strong scientific evidence that mobile-source related pollutant concentrations are significantly higher in close proximity to roadways (see, for example, Zhu *et al.*, *Atmospheric Environment*, Volume 36, pages

4323-4335, 2002; and Zhou and Levy, *BMC Public Health*, Volume 7, 2007; enclosed). Based on the existing analysis in the Draft EA, the proposed project appears likely to exacerbate existing near roadway MSAT impacts for residents already living in close proximity to I-15 by moving traffic lanes closer to those residents.

Recommendations¹:

- Provide a map indicating the location of residences and sensitive receptors in close proximity to the project (for example, within 1,000 feet).
- Perform dispersion modeling of MSAT emissions to determine exposure concentrations for residences and sensitive receptors along the corridor, and how these concentrations may change with project build alternatives.
- Provide specific mitigation measures for impacts to each sensitive receptor location identified and provide a timeline and responsible party for implementing each mitigation measure.

Particulate Matter

In addition to MSAT impacts, EPA is also concerned about the proposed project's particulate matter (PM) impacts. Since Clark County is in nonattainment for particulate matter less than 10 microns in diameter (PM₁₀), a hot-spot analysis is required under the transportation conformity rule. EPA published this final rule, which addresses requirements for project-level conformity determinations in PM_{2.5} and PM₁₀ nonattainment and maintenance areas, on March 10, 2006, and it became effective as of April 5, 2006. This rule supercedes FHWA's September 21, 2001 "Guidance for Qualitative Project-Level Hot-Spot Analysis in PM₁₀ Nonattainment and Maintenance Areas," and establishes conformity criteria and procedures for transportation projects to determine their impacts on ambient PM_{2.5} and PM₁₀ levels in nonattainment and maintenance areas (71 FR 12468). The March 10, 2006 rule requires a qualitative PM_{2.5} and PM₁₀ hot-spot analysis to be completed for a project of air quality concern (POAQC), which is defined in the rule. Methodologies to be used to assess the impacts of projects are described in the guidance document titled *Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* jointly published by EPA and FHWA in March 2006.

The Draft EA does not contain an assessment of PM₁₀ hot-spot impacts. The above-referenced guidance should be reviewed and methodologies from that guidance incorporated into this analysis. The Draft EA also contains a comment on page 57, as a footnote to Table 4, indicating that no methodologies are available for determining impacts related to PM_{2.5}. While Clark County is in attainment for PM_{2.5} and, therefore, an

¹ We recognize that the recommendations in this letter and the recommendations included in the report for AASHTO referenced above, differ substantially from the FHWA interim guidance (February 2006) on MSAT analysis for transportation projects under NEPA. While FHWA's guidance acknowledges potential MSAT concerns, EPA continues to disagree, nationally, with major elements of its approach.

analysis is not required for this project, methodologies do exist, as described in the guidance.

Recommendations:

- Perform a PM₁₀ hot-spot analysis using methodologies described in the *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas*. (<http://www.epa.gov/otaq/stateresources/transconf/policy.htm>)
- Commit to mitigation measures for potential impacts indicated by the hot-spot analysis, as well as best management practices to minimize PM₁₀ levels during construction.
- Document this analysis and mitigation measures in the final environmental document[s].

Water Quality and Hydrology

The Draft EA states that “increases in stormwater flows resulting from the increased impervious surface area could lead to increases in highway pollutant loading into the ephemeral drainages during the precipitation events (e.g., sediment, nutrients, heavy metals).” It then states that “[b]ecause the increase in impervious surface in the area would be minimal, mitigation measures for flow reduction are unnecessary.” EPA does not agree that the project’s contribution to increased impervious surface would be minimal. Increasing 12 miles of I-15 from 6 traffic lanes to 10, in addition to widening of Las Vegas Boulevard, new interchanges, and the park-and-ride lot, would contribute a large amount of impervious surface.

In addition to pollutant loading during precipitation events, the increase in impervious surface resulting from the project could result in changes to local hydrology and sediment transport capacity, and decreases in water quality from the impairment of floodplain and ecosystem services including water filtration, groundwater recharge, and flood attenuation. EPA recommends that all of these potential impacts be addressed and avoidance, minimization, and mitigation be identified.

Recommendations:

- Address potential impacts of the project to local hydrology and water quality, including sediment transport capacity, water filtration, groundwater recharge, and flood attenuation. Identify how these impacts will be avoided or minimized.
- Commit to mitigation measures to reduce stormwater flow during precipitation events and minimize pollutant loading into ephemeral drainages.

Growth Inducement

The Draft EA states that “[d]evelopment in the project area is managed through various land use and transportation plans, and it would occur whether or not the proposed I-15 improvements are built.” While EPA notes that there are a number of proposed master planned developments in the vicinity of the project area, we remain concerned that the project would induce further development in areas not currently planned. In addition, it is likely that currently planned developments will depend upon the improvements included in the project to provide improved access and mitigate traffic impacts resulting from those developments. Therefore, the project could affect the speed of development, especially near interchanges, as well as encourage additional development further out due to improved access.

The Draft EA also states that projected increased traffic volumes include vehicles traveling to and from the proposed Southern Nevada Supplemental Airport. The airport project is expected to contribute to induced growth; therefore, the improved access to the area provided by the I-15 South project would support and influence that growth.

Recommendations:

- Include an analysis of induced growth impacts, including the cumulative impacts of the project and other transportation projects in the area, including, but not limited to, the Southern Nevada Supplemental Airport. Consider the impacts to areas beyond the project corridor.
 - Specifically, the analysis should identify the potential resources outside of the right-of-way that may be affected by the increased “zone of influence” associated with interchanges.
 - Identify the types of resources that are likely to occur in areas that may be affected by growth. If it is determined that there will be no, or insignificant, impacts to resources of concern, then document the analysis process and report the results. EPA recommends following the Step-by-Step Approach for Conducting the Analysis in Chapter 6 of the May 2006 *Guidance for Preparers of Growth-related, Indirect Impact Analyses* (Guidance) [http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm] developed jointly by Caltrans, FHWA, and EPA.
- Include a discussion of mitigation strategies to reduce impacts of induced growth if adverse impacts cannot be avoided or minimized. Section 6.3 of the Guidance provides an approach to address mitigation for growth-related impacts.

Cumulative Impacts

EPA appreciates the inclusion of past, present, and reasonably foreseeable land use and transportation actions in the Draft EA. However, we don’t believe that the document provides a basis for the conclusion that the project would not pose any

cumulative impacts to various resources, including air quality and floodplains. As discussed above, additional analysis and discussion is required to determine whether the project will result in direct impacts to air quality and water quality, as well as indirect impacts to various resources from induced growth. These impacts, in addition to the impacts of other land and transportation projects in the area, could contribute to a significant cumulative impact.

We recommend that additional analyses consider the cumulative impacts of transportation projects outside of the I-15 corridor, such as improvements to US 95 and I-515, as well as the proposed Southern Nevada Supplemental Airport, and we question why the impacts associated with the proposed project were limited to unincorporated areas of Clark County and the City of Henderson. Additional analysis should include any available quantitative information about the amount of impacts to resources from these and other referenced projects.

Recommendations:

- Consider the results of the additional analyses that EPA has requested when determining cumulative impacts.
- Consider the cumulative impacts of transportation projects outside of the I-15 corridor, including the Southern Nevada Supplemental Airport, as well as other significant development projects in the southern Las Vegas region.
- Include quantitative information about the impacts to resources such as air quality and water resources from referenced projects that are already constructed or analyzed through an environmental review process.