**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
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OFFICE OF THE
REGIONAL ADMINISTRATOR

October 2, 2006

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Christine Godfrey, Chief
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U.S. Army Corps of Engineers
New England Division
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Concord, MA 01742

RE: Draft Environmental Impact Statement for Newington-Dover Spaulding Turnpike Improvements, Stafford and Rockingham Counties, New Hampshire (CEQ# 20060335)

Dear Mr. O'Donnell and Ms. Godfrey:

The Environmental Protection Agency-New England Region (EPA) has reviewed the Federal Highway Administration's (FHWA) Draft Environmental Impact Statement (DEIS) for the improvements to the Spaulding Turnpike/NH Route 16 in Newington and Dover, New Hampshire. We submit the following comments on the DEIS in accordance with our responsibilities under the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and Section 404 of the Clean Water Act. In addition to our NEPA comments, this letter also responds to an Army Corps of Engineers Public Notice, dated August 22, 2006.

The DEIS describes work necessary to reconstruct and widen a 3.5 mile section of the Spaulding Turnpike to improve safety, reduce congestion and better accommodate anticipated increases in traffic demand. EPA complements the efforts of the FHWA and New Hampshire Department of Transportation (NHDOT) to coordinate with the EPA and other federal agencies during the development of the EIS.

The attachment to this letter highlights comments and concerns about the DEIS related to wetlands impacts, the secondary and cumulative impacts analysis and air quality for you to consider as you develop the Final Environmental Impact Statement (FEIS) for the proposed project. We appreciate the opportunity to comment on the DEIS for the Spaulding Turnpike Improvements project and look forward to continuing to work with

your agency and NHDOT on this project. Based on our review of the DEIS we have rated the DEIS "EC-2—Environmental Concerns-Insufficient Information" in accordance with EPA's national rating system, a description of which is attached to this letter. Please contact Timothy Timmermann (617-918-1025) of EPA's Office of Environmental Review with any comments or questions about this letter.

Sincerely,

for

Elizabeth A. Higgins, Director
Office of Environmental Review

Attachment

**Summary of Rating Definitions and Follow-up Action**

Environmental Impact of the Action

**LO--Lack of Objections**
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC--Environmental Concerns**
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

**EO--Environmental Objections**
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU--Environmentally Unsatisfactory**
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

**Category 1--Adequate**
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2--Insufficient Information**
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

**Category 3--Inadequate**
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

**Additional Detailed Comments**
**Spaulding Turnpike Improvements**
**Draft Environmental Impact Statement**
**Stafford and Rockingham Counties, New Hampshire**

## Wetland Issues

The New Hampshire Department of Transportation (NHDOT) plans to expand the Spaulding Turnpike (Turnpike) for 3.5 miles in Newington and Dover, New Hampshire from 2 lanes in each direction to 4 lanes. This expansion would also take place on Little Bay Bridges and several interchanges will be reconfigured. The total project would impact 23 acres of wetlands, 290 linear feet of stream, and 2.7 acre-feet of 100-year floodplain.

NHDOT and Corps staffs have done a good job of coordinating with the federal agencies on this project. We have had the chance to view the likely impact areas, nearby landscape, and some of the proposed mitigation sites. We understand the project purpose and we have reviewed the alternatives analysis, the impacts, and the proposed mitigation.

Wetland Resources in Project Area

The wetlands to be filled by the proposed project drain to several tributaries that flow into the Bellamy River, Piscataqua River, and Little Bay. The Piscataqua River then drains to the Atlantic Ocean. Having recognized the exceptional value of the estuary system, EPA and the State of New Hampshire have spent millions of dollars to protect the integrity of the watershed via the EPA sponsored National Estuary Program (NEP) and other related watershed protection programs.

Wetlands within the study area provide valuable wildlife habitat and function to maintain water quality. Much of the study area remains forested despite considerable nearby development. Most of the larger wetland / upland systems lie in Newington to the west of the Turnpike and a part of the former Pease Air Force base. More than 60% of the wetlands are forested, but important amounts of shrub/scrub and emergent wetlands are also present.

The applicant has identified and mapped vernal pools. However, it is difficult to match the potential vernal pools listed in Table 3.6.2 of the DEIS with those mapped on Figure 3.6.3. According to the DEIS no vernal pools will be directly impacted as a result of the project. However, it is less clear if indirect and secondary impacts to other vernal pools can be expected once the road is expanded. The FEIS should produce a map and label each of the pools (PVP 1, PVP2, etc.). If any of the productive vernal pools will be within 200' of the new paved area, indirect impacts should be documented, especially from road salt.

Alternatives

The 404(b)(1) guidelines generally prohibit the discharge of dredged or fill material if there is a practicable alternative to the discharge which is less environmentally damaging to the aquatic environment. 40 C.F.R. §230.10(a). An alternative is practicable if it is available and capable of being done in terms of cost, technology, and logistics in light of the basic project purpose.

We have worked carefully with NHDOT over the last two years to develop a reasonable range of alternatives to be considered in the DEIS. We are satisfied with the effort NHDOT has made to avoid aquatic impacts and we believe that they have complied with the alternatives test required by the guidelines.

Aquatic Impacts

According to the DEIS, the project would result in the loss of 23 acres of wetlands and 290 linear feet of stream in an existing highway corridor where there has been historical land disturbance. Much of the existing highway alignment traverses wetland areas that have already been degraded and fragmented by past land use activities. The proposed project would increase the extent of this fragmentation but the impacts would be far less when compared to the likely impacts of a new alignment through intact wetland/habitat areas. Consequently, EPA does not believe that the proposed project would cause or contribute to significant degradation of waters of the U.S., provided that an adequate compensatory mitigation plan can be developed (see discussion below).

The project will directly impact streams, flood storage, water quality, and wildlife habitat functions of the affected aquatic systems. The wider roadway (roughly double in width) would substantially increase barriers to wildlife movement and will indirectly impact additional aquatic resources by placing the road much closer to other unfragmented wetlands. In particular, the proposed Exit 3 would extend 1000' off the Turnpike into one of highest quality unfragmented wetland/habitat blocks in the study area (near Railway Brook). Salt laden stormwater runoff and other non-point source pollution impacts will likely degrade aquatic systems that are currently buffered by distance from the existing roadway.

Secondary impacts are also a concern. The DEIS discussion of secondary impacts is informative and it predicts that approximately 1,865 new people will move to the area due to the project—resulting in 408 acres of additional development—with 44 of these developed acres being wetland. However, we believe that several assumptions have been made in the analysis of secondary wetland impacts that will likely underestimate overall impacts. First the DEIS assumes a modest land consumption rate per person, when recent trends lead us to believe that larger land consumption rates (see discussion in secondary and cumulative impacts which follow) are appropriate. Second, the analysis assumes that National Wetland Inventory (NWI) maps would provide the base map for wetlands in the area. NWI maps can underestimate the actual wetlands percent on the ground by 25%.

Absent field data, NWI map information combined with soils maps provides a more complete basis for determining wetland limits.

The document states that all wetlands in New Hampshire are protected under state and federal laws and that future projects (those that will cause secondary impacts) will provide the necessary mitigation. In addition to illegal fills that may occur, we note that mitigation is often not required under existing laws for smaller wetland impacts in New Hampshire. Moreover, wetland regulatory programs at the state and federal levels are not well suited to track and consider cumulative impacts and fragmentation effects from smaller projects—making it increasingly difficult to pursue appropriate mitigation for impacts realized in the future. Thus, likely future development from this project remains a concern.

Mitigation

The proposed mitigation plan consists of the following:

(1) Improving up to 2,700 linear feet of Railway Brook

(2) Preservation of the following properties:

a) Watson (35 acres)
b) Tuttle Farm (part of a 120 acre protection effort)
c) Blackwater Brook (30 – 40 acres)

Overall the NH DOT and its consultants have spent a good deal of time with the agencies on the selection of possible mitigation sites. All of the sites listed above have potential. Also, two alternative sites (Knight Brook and Bellamy River) appear promising. We offer the following thoughts and suggestions on the mitigation plan presented in the DEIS:

1) The DEIS states that Railway Brook was the best restoration option available, but it does not provide a full accounting of the list of potential restoration options and why other options were rejected. We believe that the mitigation package should include more restoration. However, we do not want NHDOT to pursue restoration projects that would have little long-term ecological value. EPA encourages NHDOT/FHWA to identify additional restoration opportunities and discuss them in the FEIS. If this proves impractical, that should be explained as well. EPA is willing to assist in that effort.

2) The Railway Brook enhancement/restoration proposal offers a range of issues that should be more fully discussed. On the positive side existing concrete structures could be removed from the brook and some limited curves could be added to the stream. Unfortunately, even with these changes, much of the remaining brook (downstream from the restoration) will remain straight and adjacent to developed areas before it reaches the estuary. We encourage NHDOT to continue to work with the Corps, EPA and Fish and Wildlife Service to determine if this segmented stream restoration effort is wise

ecological investment. If it is, the FEIS should provide additional information to document that finding and to explain the size of the necessary restoration easement and who will be responsible for the restoration over the long-term.

3) We support NHDOT's efforts to work with conservation groups to help protect the Tuttle Farm (120 acres). This farm contains extensive wetlands and key tributary to the Bellamy River, and protection is a very high priority to the Town of Dover. The FEIS should explain whether NHDOT will provide the necessary financial support to protect this area. If NHDOT will be not be the sole contributor, the FEIS should explain how much will they contribute toward conservation of the parcel.

4) While we agree that the loss of 2.7 acre-feet of 100-year floodplain would not be a large impact, efforts should be made to explore mitigation options to replace the floodplain loss. If a site is not found, the FEIS should document the search process.

5) EPA expects to offer refined comments on the mitigation package/proposal for the project once additional information is provided in response to our comments above. We stand ready to participate in interagency discussions regarding mitigation as appropriate in the future.

**Secondary and Cumulative Impacts**

As you know, EPA and other natural resource agencies commented on the scope of work for the socio-economic analysis prepared for the DEIS, as well as on an early draft of the results. We appreciate having had the opportunity to coordinate with NHDOT and FHWA on this important analysis. Most of the issues and concerns that we raised to date have been answered in the DEIS. We do, however, have some remaining comments that can be found below.

In the comments we submitted in November 2005 on the draft socio-economic report, we recommended that the DEIS include a discussion of the major factors that can influence locational decisions of residents, since the method used to forecast population and employment changes (the REMI model) focuses on projecting changes in businesses, with the assumption that these business changes influence where people live. Certainly changes in businesses have a large influence on population (and vice versa), but there are additional factors that influence where people decide to live, such as cost of housing, quality of schools, and general quality of life. We recognize that all models are limited in what can be forecast quantitatively, and although the REMI model cannot numerically incorporate factors such as these, we recommend that the FEIS include a broader *qualitative* discussion of such factors and how they might interact with shorter commuting times along this stretch of roadway. The time savings, particularly in the 8-lane alternative, are significant, and in combination with these quality of life factors may influence the ultimate results of where people decide to live. The DEIS mentions some of these other factors in passing, but they merit some discussion, at least qualitatively.

Although we reviewed a draft of the socio-economic report earlier, this is the first time that we have seen the analysis of the environmental impacts of changes in population and employment. We believe the general approach taken in the DEIS is reasonable, but we question whether the most appropriate land consumption rate is used in the calculations of additional land that will be developed by 2025 under an 8-lane alternative. The confidence levels in the regression analyses shown in Exhibits 4.3-5 and 4.3-6 are not very high, which raises the question of whether a straight line regression best fits the data. That is, we question whether .23 acres of land consumed per capita in Strafford County and .19 acres of land consumed per capita for Rockingham County are the appropriate rates on which to base the calculations. Using a different approach, Table 4.3-5 suggests historic land consumption rates of either .42 acres per capita for the 2-county region (total amount of developed land in the two counties divided by total population) or .64 acres per capita (average rate across the 34 communities). (These calculations also could be done for each county rather than a 2-county region.) We recommend examining the issue of what historic rate to use in the FEIS.

In addition, we are concerned whether it makes sense to only use what amounts to a historic average, and believe it would be more appropriate to use recent rates of land consumption per person. Almost all recent studies in New Hampshire and elsewhere have shown that the amount of land consumed per capita has risen far more rapidly than population growth, with most new residential development taking place on larger lots, and much new commercial development on large sites with significant amounts of parking. One relevant study by the Rockingham Planning Commission in 2000 in which they found that development between 1975 and 1982 was consuming more than 1.5 acres per person, as compared with less than .5 acres per person prior to 1953. We recognize that recent land consumptive patterns of development may not necessarily be predictive of the future if towns adopt smart growth policies that encourage compact, pedestrian-friendly development. Nevertheless, we recommend that the FEIS present the results of an analysis that is based on recent land consumption rates. This could either be in addition to or in place of an analysis based on historic rates (see comments above on the appropriate historic rate to use). This analysis could be accomplished by comparing the most recent land cover dataset (which is what was used in the DEIS) with a prior land cover dataset (e.g., from 10-15 years earlier). This would provide an upper bound for how much land might be developed in the future, assuming the land consumption rate doesn't continue to increase.

We also note that the impacts to wetlands from future growth may be greater than predicted since threats come not only from direct, permitted filling, as described in the DEIS, but also from illegal, unpermitted filling and from indirect impacts. One example of an indirect impact is stormwater runoff from nearby development that may degrade wetlands and impair their functions and values. As mentioned in our wetlands comments above, we recommend that the FEIS include a caveat that wetlands can be impacted by more than direct, permitted filling.

**Air Quality**

Construction Impacts

The NHDOT does not commit to either diesel retrofits or the use of low sulfur fuel as mitigation as EPA has requested in our scoping comments of April 5, 2004 and in our February 11, 2005 comments on the Rationale Report for the project.

Instead, the DEIS indicates that both of these measures will be considered through the "final design process with input from the contracting community at large." (DEIS page 4-135)

In light of the proven air quality and health benefits derived from the use of retrofit pollution control equipment and low-sulfur diesel fuel, EPA continues to strongly encourage NHDOT to require the use of retrofits and low sulfur fuels through the project's construction contract specifications. Retrofit pollution controls such as oxidation catalysts or particulate filters installed on the exhaust of the diesel engine equipment would reduce particulate matter, hydrocarbon and carbon monoxide emissions on this roadway project as well as on any future construction project where this equipment was used.

Modeling

The MOBILE6.2 modeling for the DEIS (described in Appendix H – Air Quality Technical Information – MOBILE6.2 Input Files) uses an incorrect Reid Vapor Pressure (RVP) value of 6.8 (the summertime gasoline modeling factor) for the winter carbon monoxide modeling runs resulting in a slight under prediction of the actual carbon monoxide emission factors. The correct winter RVP value is 13.0. EPA believes that correcting the RVP will not change the overall conclusion of the microscale carbon monoxide analysis. Therefore, at this time EPA does not require the existing microscale air quality analysis to be corrected unless there is some other reason for re-doing the analyses. Any future emission factor modeling must use the correct RVP value.