

14.0 REEVALUATIONS OF OTHER TOPICS

14.1 Introduction

This chapter provides reevaluations of the following topics from the 2004 FEIS:

- Visual Impacts (Section 14.2);
- Energy Impacts (Section 14.3);
- Construction Impacts (Section 14.4);
- Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity (Section 14.5); and
- Irreversible and Irrecoverable Resource Commitments (Section 14.6).

The Court Order did not require any additional analysis of the topics addressed in this chapter. As discussed in Chapter 1: Introduction, the primary purpose of the reevaluation process is to determine whether any changes in the project; changes in the existing physical or regulatory environment, including project design, concept and scope; or changes in the affected environment, impact analysis and proposed mitigation measures would result in the need to update technical information from the 2004 FEIS.

14.2 Visual Impacts

14.2.1 Summary of 2004 FEIS Analysis and Record of Decision Commitments

The 2004 FEIS stated that the 2005 Selected Alternative would increase the visual scale of the roadway due to the widening and result in the removal of some roadside vegetation. Where this vegetation is part of a forested buffer between the highway and adjacent development, this would have an adverse effect upon the quality of views from residential areas. The 2004 FEIS identified specific residential areas that would experience visual impacts from the 2005 Selected Alternative, including on Trolley Lane north of NH 38 in Salem and neighborhoods on NH 111A/Lower Locust Road and Squire Armor Road in Windham.

The Record of Decision made the following commitments with respect to the mitigation of visual impacts:

- Landscape planting and natural revegetation of the cut and fill slopes, and as appropriate, at the park-and-ride facilities.
- Structural design considerations for drainage structures, bridges, etc. to enhance their visual appearance.
- Highway lighting at interchanges and park-and-ride facilities, will be designed with “cut offs” or similar features to limit unwanted light where appropriate.
- Since areas that are visually impacted are also often impacted by noise, sound walls will serve a dual purpose by mitigating for both noise and visual impacts. In general, landscaping amenities will be constructed in conjunction with the sound walls, where practicable.

- Privacy fencing in four locations (at NH 111A in Windham, Fordway Extension in Derry, Charleston Avenue in Londonderry and Rockingham Road in Londonderry) will also help shield adjacent residential properties from the visual impacts of the highway.
- Additional privacy fence locations or landscape screening to minimize the visual impact of the highway and mitigate for the loss of existing vegetative screening will be considered and evaluated as part of the discussions with affected property owners during final design.

14.2.2 Changes in Regulations/Guidelines

There have been no changes in the regulations and guidance pertaining to the analysis of visual impacts since the 2004 FEIS.

14.2.3 Changes in Existing Conditions

The overall visual character of the I-93 corridor has not substantially changed since the 2004 FEIS. As discussed in Chapter 8: Land Use, additional residential development has occurred in some areas adjacent to the I-93 corridor since the 2004 FEIS, including on Squire Armour Road (W5) and Locust Road (W3) in Windham (see Figure 8-2).

14.2.4 Changes in Future No Build and Build Conditions

The additional residential development that has occurred in some neighborhoods since the 2004 FEIS incrementally increases the number of residences potentially affected by visual impacts from the loss of vegetative screening under the 2005 Selected Alternative. However, the locations of areas where visual impacts would occur and the general description of the nature of the visual impacts have not substantially changed since the 2004 FEIS.

14.2.5 Mitigation

The mitigation measures described in the 2004 FEIS and Record of Decision remain valid (See Section 14.2.1). NHDOT has continued to consider additional locations for privacy fences as part of the final design process to provide visual screening for residential areas near I-93.

14.2.6 Conclusion

While additional residences have been constructed in the corridor, the 2004 FEIS conclusions regarding visual impacts have not changed and the Record of Decision mitigation commitments remain valid. No additional analysis is warranted.

14.3 Energy Impacts

14.3.1 Summary of 2004 FEIS Analysis and Record of Decision Commitments

The 2004 FEIS discussion of energy impacts stated that the 2005 Selected Alternative would consume energy during the construction of the project that would not be required under the No

Build Alternative. The additional lanes provided by the 2005 Selected Alternative would require additional expenditures of energy as compared to today for maintenance activities, such as plowing, sanding, mowing, bridge and drainage system maintenance, and roadway surface repairs. The No Build Alternative would require energy consumption for the continued maintenance of infrastructure currently in poor condition.

With respect to operational energy consumption, the 2004 FEIS concluded that since the project would improve the efficiency of the flow of traffic through the corridor, future vehicular energy requirements under the 2005 Selected Alternative would be lower than under the No Build Alternative.

The 2004 FEIS and Record of Decision did not make any mitigation commitments related to energy consumption.

14.3.2 Changes in Regulations/Guidelines

There have been no changes in the regulations and guidance pertaining to the analysis of energy impacts since the 2004 FEIS. For a review of Federal and State policy actions related to greenhouse gas emissions (which are proportional and closely related to energy consumption), refer to Section 5.1.3 in Chapter 5: Air Quality. None of the current greenhouse gas policies require energy or greenhouse gas analysis of proposed transportation projects.

14.3.3 Changes in Existing Conditions

Since the 2004 FEIS, traffic volumes and congestion have continued to increase on I-93, resulting in increased vehicular energy consumption.

14.3.4 Changes in Future No Build and Build Conditions

The various population and employment scenarios evaluated in this **SEIS** have slightly different traffic operations performance, but all result in reduced congestion on I-93 under the 2005 Selected Alternative in comparison to the No Build Alternative. While traffic volumes on I-93 itself and feeder roads would generally increase as a result of the 2005 Selected Alternative, traffic volumes on parallel roads would generally decrease. The overall efficiency of the transportation system would be improved and energy consumption reduced in comparison to the No Build Alternative, consistent with the conclusion of the 2004 FEIS.

14.3.5 Mitigation

No adverse energy impacts have been identified as a result of the 2005 Selected Alternative, therefore no mitigation measures are proposed.

14.3.6 Conclusion

The 2004 FEIS conclusions regarding energy impacts have not changed and no mitigation is proposed. No additional analysis is warranted.

14.4 Construction Impacts

14.4.1 Summary of 2004 FEIS Analysis and Record of Decision Commitments

The 2004 FEIS identified construction impacts related to air quality, soil erosion, wildlife, noise, traffic, and visual resources.

Air Quality

Air pollutants emitted from diesel and gasoline powered construction equipment would include oxides of nitrogen, carbon monoxide, hydrocarbons, and particulate matter. Emissions from construction equipment may result in elevated ambient concentrations within the immediate vicinity of construction operations for short periods of time, but were not expected to have a substantial impact.

Particulate matter (dust) would be emitted as a result of grubbing, grading, excavating, hauling, and blasting operations. Dust emitted during most construction activities would be controlled by wetting unpaved areas in the construction zone, covering loads on all open trucks, and seeding all unvegetated areas as soon as practicable.

Soil Erosion

Activities associated with construction would likely require blasting of bedrock material in some areas and extensive grading. The grading would include the stripping of existing vegetation, followed by major excavation and filling. This construction would result in nearly complete reworking and/or removal of surficial and subsoils along the sides of highway. Exposure of previously vegetated soils could lead to erosion if not properly controlled.

To mitigate potential sedimentation impacts during construction, the Record of Decision commitments included the development and implementation of a detailed drainage and erosion control program. Construction schedules would require that areas stripped of vegetation be limited in size and either surfaced or vegetated as quickly as possible after initial exposure to minimize erosion and restore wildlife habitat. Temporary erosion check-dams would be installed during the construction period in appropriate locations. The Record of Decision also stated that the detailed guidance contained in NHDOT's *Standard Specifications for Road and Bridge Construction*, Section 699, Temporary Project Water Pollution Control (Soil Erosion) would be followed.

Wildlife

The 2004 FEIS stated that construction of the 2005 Selected Alternative would unavoidably destroy habitat important to wildlife and thus may kill some animals and displace others. Some fossorial animals and breeding animals and their young would most likely to be lost during construction. More mobile animals would move to other habitats. The Record of Decision contained a commitment requiring construction contractor personnel to be trained to recognize the hognose snake and be informed of its protected status through a cooperative effort of

NHDOT and NHF&GD. Procedures for reporting occurrences of the snake would be established to ensure proper response and reporting of the snake, if encountered during construction.

Human presence and associated construction noise at new location areas may repel some species of wildlife from the edge of the right-of-way. Animals tend to habituate to constant noise (Busnel 1978), but loud, sudden sounds would be commonplace during construction. The loud noises associated with construction could mask territorial vocalizations of bird species near the construction, interfering at least temporarily with breeding. Amphibians, which breed more commonly at dusk or night, are less likely to be indirectly affected by the noise.

Noise

The 2004 FEIS concluded that construction activities would result in substantial, but temporary, noise impacts to sensitive receptors at various locations along the project's length. Noise levels in the vicinity of construction activities would vary widely depending on the type and number of pieces of construction equipment active at any one time. It was expected that noise levels exceeding 67 decibels could occur up to 500 feet away from construction activities. Construction noise would, in some areas, be occurring near residences presently experiencing lower noise levels. Proposed sound walls would be constructed prior to reconstructing and widening the highway where possible.

The Record of Decision stated that construction would generally be accomplished during daylight hours to minimize noise impacts, although some night-time construction should be expected given the traffic volumes during daylight hours and the need to maintain traffic at these times.

Traffic

Construction would create increased truck traffic on secondary roads. Access to I-93 would be maintained, although unavoidable delays would occur. Temporary delays would be experienced getting on and off I-93 and along the mainline as bridges are worked on, traffic is shifted temporarily from one side to the other, equipment is moved around, and materials delivered. NHDOT has developed a comprehensive Transportation Management Plan in coordination with local and state emergency response personnel to facilitate the movement of traffic through the construction zones with minimal delays.

The Record of Decision commitments required the development and implementation of a detailed Traffic Control Plan (including incident management procedures) to reduce traffic-related, short-term impacts and minimize construction zone delays. The plan would include the requirement to maintain two lanes of traffic in both directions along the mainline for normal construction activities and during high volume traffic periods. Businesses and their customers may experience some inconvenience due primarily to construction activities along their frontage on secondary highways in interchange areas. Construction activities would be coordinated with property owners to assure that reasonable access to properties is maintained. Temporary signing and other issues related to temporary relocation of access points, caused by construction activities, would be appropriately addressed on an individual basis.

Visual Resources

Some short-term visual impacts would also occur during construction as land clearing and earth-moving occurs. Additionally, some views would be disrupted by the presence of temporary construction or access roads.

14.4.2 Changes in Regulations/Guidelines

Regulatory changes since the 2004 FEIS pertaining to construction impacts include new Alteration of Terrain regulations (Env-Wq 1500) effective January 1, 2009. The regulations address measures for controlling soil erosion and managing stormwater runoff in order to protect surface water, drinking water supplies and groundwater.

14.4.3 Changes in Future No Build and Build Conditions

The general type and extent of construction impacts identified by the 2004 FEIS have not substantially changed.

14.4.4 Mitigation

The mitigation measures described in the 2004 FEIS and Record of Decision remain valid (See Section 14.4.1). NHDOT has been and will continue to implement the construction mitigation measures as part of the project.

NHDOT is coordinating efforts with NHDES and will include provisions within construction contract documents to meet the intent of the new Alteration of Terrain Regulations.

The construction mitigation measures being implemented as part of the project include monitoring of residential drinking water wells in the vicinity of blasting activities in coordination with NHDES. As part of this proactive approach, NHDOT is conducting drinking water baseline monitoring to measure background and pre-blasting groundwater and surface water conditions. The monitoring program includes development of a conceptual hydrogeologic model of the project area to establish the locations of new monitoring wells. NHDOT is also implementing BMPs for the handling, use, and detonation of explosive materials; and a groundwater post-blasting monitoring program to detect potential impacts prior to reaching drinking water resources. If any exceedances of water quality standards occur, NHDOT will take appropriate corrective measures in coordination with NHDES.

Exceedances of the groundwater quality standards for nitrate, nitrite and benzene were recorded at monitoring wells at Exit 3. The exceedances are potentially the result of site related rock blasting activities. As discussed in a letter dated February 26, 2010, NHDES has approved monitored natural attenuation as the appropriate response for this contamination. NHDOT will continue to provide potable water to impacted properties (as required), continue groundwater monitoring and develop a Remedial Action Plan Report and Groundwater Management Program Application to address the groundwater contamination at Exit 3.

14.4.5 Conclusion

The 2004 FEIS conclusions regarding construction impacts have not changed and the Record of Decision mitigation commitments remain valid. Additional commitments have been made with respect to groundwater monitoring in conjunction with blasting. No additional analysis is warranted.

14.5 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

14.5.1 Summary of 2004 FEIS Analysis and Record of Decision Commitments

The full text of the 2004 FEIS Section 4.16, “Relationship Between Local Short-Term Uses of Man’s Environment and the Maintenance and Enhancement of Long-Term Productivity” is provided below.

Current congestion along the I-93 corridor impedes travel through the corridor, both north and south, as well as traffic accessing or traveling through the various interchanges. Transportation improvements, like the proposed one, are based upon a comprehensive planning process by the NHDOT. This planning considers the need for present and future transportation needs within the context of present and anticipated future land-use development. Local short-term impacts and use of resources by the project are thus determined to be consistent with the maintenance and enhancement of long-term productivity for the State as a whole before a highway project is approved.

The types of impacts for all the Build Alternatives in the project corridor would be similar. Most short-term impacts will be associated with construction: noise, temporary impacts to air quality, disturbance of soils, potential sedimentation (temporarily reducing water quality and affecting aquatic communities), potential traffic delays, and temporary visual impacts. Erosion and sedimentation will be minimized during construction through the use of Best Management Practices (BMPs) to avoid impacts to aquatic communities. Other impacts would cease after construction. In comparison, short-term benefits of construction will include additional employment and an additional source of revenue to the local service industry. Increased local spending during construction would also benefit the economy of the communities in the corridor.

Socio-economic impacts will include some loss of residences, businesses, and agricultural land; possible changes in the value of residences affected by the highway widening and other modifications to the infrastructure; and some loss of tax revenue due to right-of-way (ROW) acquisitions necessary for the widening, the realignment of some cross roads, and for interchange modifications. Some of the necessary ROW acquisition may impact land planned for future development, both residential and commercial. These economic impacts will be compensated for in the long term, however, by improved access within the region. Loss of residences and businesses will impact communities, but the impacts can be absorbed because there are adequate residential and commercial properties for sale or lease in the project corridor to accommodate those displaced. The fiscal impacts to the towns and the economic impacts caused by direct

displacements and the loss of property for transportation needs may in the near term be difficult, but over time the redevelopment potential would appear to exceed the immediate losses in terms of value.

With regards to long-term impacts on natural resources, the loss of some forest and natural land will incrementally reduce the rural ambience and appeal of the area. The permanent loss of wildlife habitat will also result in some reduction in the animal populations currently living within the project corridor. However, this latter effect will be offset by the habitats created in the wetland mitigation areas as well as by the permanent protection of habitats in areas purchased for preservation purposes. The potential loss of historic structures is less easily mitigated and typically represents more permanent losses in terms of from the cultural environment.

14.5.2 Changes in Regulations/Guidelines

There have been no changes in the regulations and guidance pertaining to the analysis of short-term uses vs. long-term productivity since the 2004 FEIS.

14.5.3 Changes in Future No Build and Build Conditions

The general discussion of tradeoffs between short-term uses and long-term productivity provided in the 2004 FEIS remains valid (See Section 14.5.1).

14.5.4 Conclusion

The 2004 FEIS conclusions regarding short-term uses and long-term productivity have not changed. No additional analysis is warranted.

14.6 Irreversible and Irretrievable Resource Commitments

14.6.1 Summary of 2004 FEIS Analysis and Record of Decision Commitments

The full text of the 2004 FEIS Section 4.17, “Irreversible and Irretrievable Resource Commitment” is provided below.

Implementation of the project will involve a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises in the future for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material will be expended. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will

also require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, region, and State will benefit by the improved quality services which are anticipated to outweigh the commitment of these resources.

14.6.2 Changes in Regulations/Guidelines

There have been no changes in the regulations and guidance pertaining to the analysis of irreversible and irretrievable resource commitments since the 2004 FEIS.

14.6.3 Changes in Future No Build and Build Conditions

The general discussion of irreversible and irretrievable resource commitments provided in the 2004 FEIS remains valid (See Section 14.6.1).

14.6.4 Conclusion

The 2004 FEIS conclusions regarding irreversible and irretrievable resource commitments have not changed. No additional analysis is warranted.