



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Deval L. Patrick
GOVERNOR

Timothy P. Murray
LIEUTENANT GOVERNOR

Ian A. Bowles
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/envir>

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CERTIFICATE OF THE SECRETARY OF ENERGY & ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT/NOTICE OF PROJECT CHANGE

PROJECT NAME: Route 2 Improvements Project
PROJECT MUNICIPALITY: Fitchburg and Leominster
PROJECT WATERSHED: Nashua
EEA NUMBER: 10599
PROJECT PROPONENT: Massachusetts Highway Department
DATE NOTICED IN MONITOR: **December 10, 2007**

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that the Draft Environmental Impact Report (DEIR) submitted for this project **adequately and properly complies** with MEPA and its implementing regulations. The Proponent may prepare and submit the Final Environmental Impact Report (FEIR) for MEPA review. The Proponent has also submitted a Notice of Project Change (NPC) to the MEPA Office. The Scope for the FEIR outlined in this Certificate reflects changes to the project described in the NPC.

Project Description

As outlined in the DEIR, the project involves improvements to an approximately 1.95-mile segment of Route 2 through Fitchburg east of Route 31 and west of the Town of Leominster's Notown Water Treatment Plant. The City of Fitchburg lies to the north of this segment of Route 2, and the City of Leominster lies to the south. The Notown Reservoir, Goodfellow Pond and Simonds Pond, which supply drinking water for the City of Leominster are located immediately south of the roadway.

The project is considered the third and final stage of the Westminster, Fitchburg and Leominster Improvements Project which has been under design and construction by the Massachusetts Highway Department (MassHighway) since the early 1970s. Improvements proposed as part of the final stage include widening of the highway median and shoulders and improvements to intersections with local streets. According to the DEIR, the project will bring this section of the highway into conformance with current design standards and with sections of Route 2 to the immediate west and east that have previously been upgraded. The project will result in an increase in Route 2's cross-section width from 62 feet to 82 feet, as well as improvements to Route 2's at-grade intersections with four local streets.

The Proponent states in the DEIR that a second important goal of the project is to provide additional protection to the Notown Reservoir by implementing improvements to Route 2's stormwater management system. The existing stormwater system was designed several decades ago and much of the roadway's runoff currently discharges untreated into the Notown Reservoir system or directly into surrounding wetlands.

The project has a long and complicated MEPA history. The first two stages of the project, between Route 2A/Route 140 in Westminster and just to the east of the Route 31 interchange in Fitchburg were constructed by 1985. The third and final section of Route 2 through Fitchburg east of Route 31 was never completed because of additional environmental regulations that became effective prior to the receipt of all environmental permits. Since 1973, the design of upgrades to this section of Route 2 has undergone revision and review at the local, state and federal level. The project has been reviewed under two other EEA file numbers, #1603 and #10175. A new Environmental Notification Form (ENF) for the project was filed in January 1996 and the project was assigned the current file #10599. A Scope for an EIR was issued in February 1996, which was subsequently modified in a November 8, 1996 Certificate in response to a NPC filing. The Proponent has since filed two additional NPCs in March of 2000 and March of 2003 to notify EEA of a lapse of time. The DEIR currently under review has been filed in response to the Scope issued on November 8, 1996.

MEPA Jurisdiction

The project is subject to environmental review and the preparation of a Mandatory EIR pursuant to Sections 11.03(3)(a)(1)(a) and 11.03(3)(a)(1)(b) of the MEPA regulations because it will result in the alteration of more than one acre of Bordering Vegetated Wetlands (BVW) and the alteration of more than 10 acres of "any other wetlands".

The project requires the following permits and/or review: a National Pollutant Discharge Elimination System (NPDES) Construction General Permit from the Environmental Protection Agency (EPA); an Individual Section 404 permit from the Army Corps of Engineers (ACOE); a Variance from the Massachusetts Surface Water Quality Standards (SWQS) and a Major 401 Water Quality Certificate from the Department of Environmental Protection (MassDEP); and Orders of Conditions from the Leominster and Fitchburg Conservation Commissions. Previously, the project required a variance from the Wetlands Protection Act (WPA). According to the DEIR, the Proponent now intends to file the project under the Limited Project provisions

of the WPA regulations at 310 CMR 10.53(3)(f). If all project-related wetland impacts are considered by MassDEP to be a Limited Project, a WPA variance will not be required.

The Proponent must also prepare an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for review by the Federal Highway Administration (FHWA). Per agreement amount the FHWA, MEPA and MassHighway, the document currently under review serves as a combined EA and DEIR.

Because the Proponent is an Agency of the Commonwealth, MEPA jurisdiction extends to all aspects of the project that may cause significant Damage to the Environment as defined in the MEPA statute.

Review of the DEIR

The purpose of MEPA review is to ensure that a project proponent studies feasible alternatives to a proposed project; fully discloses environmental impacts of a proposed project; and incorporates all feasible means to avoid, minimize, or mitigate Damage to the Environment as defined by the MEPA statute. I have fully examined the record before me, including but not limited to the Scope issued on November 8, 1996; the DEIR filed in response; and the comments entered into the record. I find that the DEIR is sufficiently responsive to the requirements of the MEPA regulations and the Scope to meet the regulatory standard for adequacy.

Many concerns about the project focus on potential adverse impacts to the Notown Reservoir and its tributaries. The Secretary's Certificate on the ENF dated February 23, 1996 directed the Proponent to focus on identifying a preferred alternative that avoids adverse water quality impacts while achieving the project's public safety goals. While I am finding the DEIR to be adequate and while the Proponent has provided a considerable amount of information on project design and impacts, there are several unresolved issues that must be addressed for the FEIR to be found adequate. In general, the Proponent should provide more information in the FEIR on the following issues:

- A more comprehensive analysis of project alternatives, including a reduced widening alternative;
- A higher level of detail about the proposed stormwater management system and the project's compliance with revised MassDEP Stormwater Management Policy standards;
- A greater commitment to reducing wetland impacts in the Notown Reservoir watershed and a commitment to additional mitigation for wetland impacts;
- Additional information about impacts to and mitigation for rare species impacts; and,
- Additional information on the project's impacts on public drinking water supplies from the use of sodium chloride on the highway, and a discussion of the project's compliance with the forthcoming Snow and Ice Control Environmental Status and Planning Report.

The FEIR should respond to the issues outlined in this Certificate and respond in detail to comments submitted on the DEIR.

Project Change Description

The NPC that has been filed with the DEIR outlines both a project change and a lapse of time. The document outlines several important design changes that will result in enhanced protection for the Notown Reservoir and its watershed and enhanced safety for motorists. Changes outlined in the current NPC include:

The key project change on the western end of the project is the elimination of a proposed flyover bridge connecting Palmer Road on the south side of Route 2 with Oak Hill Road/Fifth Massachusetts Turnpike on the north side of Route 2. This follows the previous elimination of a similar flyover bridge connecting Granite Street with Mt. Elam Road. Both the Oak Hill Road and Palmer Road intersections with Route 2 will now remain at-grade and will only allow right-in and right-out movements. The existing 90-degree intersections will be improved by curved ramps and a design speed of 30 miles per hour between the highway and the local streets. Acceleration and deceleration lanes will be constructed on Route 2 to provide better transitions between the mainline highway and the ramps leading to and from the two connecting local streets.

At the eastern end of the project at the intersections of Route 2 with Granite Street and Mt. Elam Road, the project now includes the provision of full-length acceleration and deceleration lanes connecting to parallel frontage roads on both sides of the highway that are separated from the mainline Route 2 by a median/barrier. At this location the Route 2 mainline will be shifted slightly to the north in order to keep the acceleration lane from Granite Street to eastbound Route 2 out of Goodfellow Pond.

The expected commencement date for the project is now 2014.

The NPC is also being filed for a lapse of time as more than three years have elapsed since the previous NPC was submitted in 2003. According to the NPC, significant progress has been made on project design and efforts to minimize project impacts. The changes outlined in the NPC portion of the document do not warrant separate or new MEPA review of the project. The Scope for the FEIR takes the project changes into consideration.

SCOPE

General

The FEIR should contain a copy of this Certificate and a copy of each comment received on the DEIR. In order to ensure that the issues raised by commenters are addressed, the FEIR should include a response to all comments received from state and local agencies and organizations, and from members of the public. The FEIR should present additional narrative and/or technical analysis as necessary to respond to the concerns raised. This directive is not

intended to, and shall not be construed to, enlarge the scope of the FEIR beyond what has been expressly identified in the initial scoping Certificate or this Certificate.

The FEIR should be circulated in compliance with Section 11.16 of the MEPA regulations and copies should be sent to any state agencies from which the Proponent will seek permits or approvals, to the list of "comments received" below, and to Fitchburg and Leominster officials. A copy of the FEIR should be made available for public review at the Fitchburg and Leominster Public Libraries.

Alternatives

The DEIR presents the No-Build alternative and the preferred alternative for the overall project. According to the DEIR, the Proponent has developed many project design alternatives over the multi-decade planning period that have since been eliminated from further consideration. A summary of alternatives that were eliminated from further consideration is presented in the DEIR. The preferred alternative as outlined below differs considerably from alternatives presented in the ENF and NPC, primarily as a result of the Proponent's attempts to limit the project's impacts on wetlands within the Notown Reservoir watershed.

The project presented in the DEIR proposes an increase in the width of the highway's cross-section from its current width of 62 feet to a proposed width of 82 feet. The existing typical cross-section in the project area consists of a total of four 12-foot travel lanes (two in each direction), a four-foot shoulder on each outer side of the highway, and a six-foot median that includes a guardrail. The proposed cross-section will also feature four 12-foot travel lanes. However the outside shoulders will be widened to 10 feet and the width of the median will be increased to 14 feet. Within the median will be a raised concrete safety barrier separating the two sides of the highway. The amount of impervious surface in the project area will increase from approximately 678,000 sf (15.56 acres) to approximately 978,000 sf (22.66 acres), an approximately 46 percent increase.

Improvements are also proposed at Route 2's at-grade intersections with Oak Hill Road, Palmer Road, Mt. Elam Road and Granite Street. At the first of these two intersections, the existing stop-sign-controlled design will be replaced by 30-miles-per-hour on- and off-ramps that will provide connections between Route 2 and these local roadways. Acceleration and deceleration lanes will be constructed on Route 2 to serve these ramps. The latter two intersections will be connected to Route 2 by means of new service roads oriented to parallel Route 2. Acceleration and deceleration lanes will be constructed on mainline Route 2 to provide connections to and from these service roads. The existing traffic signal at Granite Street will be eliminated. To minimize impacts to Goodfellow Pond by the service road that will provide access to and from Granite Street, the alignment of the mainline of Route 2 in this general area will be shifted slightly to the north of its present location.

While I am aware of the long history of the project and the extensive revisions that have been made to date to reduce its potential environmental impacts, the Proponent should expand the alternatives analysis in the FEIR to include a reduced build scenario. The alternatives

analysis should clearly demonstrate consistency with the objectives of MEPA review, one of which is to document the means by which the Proponent plans to avoid, minimize or mitigate Damage to the Environment to the maximum extent feasible. This information will also be considered during the review of the Proponent's request for a variance from the SWQS.

According to the DEIR, the project is not intended to increase capacity or improve Level of Service on the highway. The main justification given for the proposed widening is conformity with phases 1 and 2 of the project. In the FEIR the Proponent should evaluate a reduced widening alternative, in which the proposed shoulders and median are reduced in width. In light of the sensitive environmental receptors in the project area, the Proponent should justify the need for the 14-foot median and 10-foot shoulders, aside from conformity with other sections of the highway.

The Proponent has recently abandoned a plan to double-barrel the section of Route 2 through Orange, Athol and Phillipston due to project cost and the extent of that project's anticipated impacts to wetlands and now proposes a 3-foot median on that section of the highway with Quik-Curb delineators separating travel lanes in each direction. It is clear that Route 2 is not uniform in all locations. While I am cognizant of the project's stated purpose of conformity, there must be some degree of flexibility in areas where the highway passes through Outstanding Resource Waters and Public Drinking Water Supply Areas. The Proponent should also consider a vegetated median. The Proponent should examine the reduced build alternative in light of the consequent reduction in new impervious surface, wetland loss, salt use and project cost.

The Proponent has also undertaken a comprehensive analysis of design alternatives related to wetland impacts. This analysis is discussed in further detail in a later section of this Certificate.

Stormwater Management

The project is located within the North Branch, Nashua River watershed. The entire length of the North Branch of the Nashua River and its associated tributaries (Sawmill Pond, Flag Brook, Fall Brook and parts of Monoosnoc Brook) are classified as Class B under the Massachusetts Water Quality Standards at 314 CMR 4.06(3). As an existing public water supply, Notown Reservoir, Goodfellow Pond and Simonds Pond, as well as tributaries leading to these waterbodies are protected as Class A Waters. These waters are designated as a Public Water Supply under 314 CMR 4.06(1) which affords them the highest standard of regulatory protection. They are also designated as Outstanding Resource Waters (ORWs) and are protected by anti-degradation regulations. The Notown Reservoir/Monoosnoc Brook system is the primary potable water source for the City of Leominster, with a usable water storage capacity of 708.8 million gallons.

The existing stormwater management system along Route 2 varies by level of protection along the corridor. Between the western end of the project and Palmer Road, independent groups of catch basins are spaced at frequent intervals that discharge to wetlands or streams in the Flag Brook watershed on either side of the roadway. Between Palmer Road and Granite Street/Mt.

Elam Road, there are groups of both independent and interconnected catch basins. Interconnected catch basins in the vicinity of the Notown Reservoir discharge stormwater to the north away from the reservoir, but still within the reservoir's watershed. Another set of interconnected catch basins in this area discharge into a wetland and perennial stream that flow directly into the Notown Reservoir. The third interconnected catch basin system along this section of Route 2 discharges into a wetland associated with Monoosnoc Brook. All receiving waterbodies in this section of the highway are classified as Class A waterways. To the east of Granite Street/Mt. Elam Road are additional catch basins that discharge into a wetland associated with Goodfellow Pond, Monoosnoc Brook or Simonds Pond. In addition to the system as described above, there are 21 locations where untreated stormwater currently outlets directly to wetlands or waterbodies. Of these 21 locations, 14 are within the Notown Reservoir watershed.

The Proponent has established a goal for the project to not only meet but where practicable, exceed the minimum requirements of MassDEP's Stormwater Management Policy (SMP). Due to the level of design for the project, the details of the stormwater management system and selection of stormwater Best Management Practices (BMP) have not yet been finalized; however the DEIR provided information in support of the Proponent's goal to exceed all SMP standards. The FEIR should include a detailed drainage plan that provides drainage calculations, pre- and post-construction run off rates and a detailed description of BMPs. Details concerning the assumptions used in designing the stormwater system and sufficient information to demonstrate that the system meets MassDEP's newly revised standards in the SMP should also be provided. The Proponent should discuss whether stormwater improvements to this section of Route 2 will be implemented if for some reason the proposed highway project does not move forward.

According to the DEIR, stormwater infrastructure improvements implemented as part of the project will improve the area's water quality by eliminating the direct discharge of runoff from Route 2 into wetlands. Along the western end of the section of Route 2 that directly borders the Notown Reservoir, all runoff from the highway will be directed away from the Reservoir into an adjacent watershed to the west that has no contact with the Reservoir's watershed. On the eastern edge of the project, stormwater from the highway will be directed to the Monoosnoc Brook downstream of the intake to the water treatment plant.

While the redirection of runoff away from the Notown Reservoir will benefit the public water supply, the impact of this diversion to other watersheds must be addressed in the FEIR. The Notown Reservoir system is afforded a higher level of protection and the proposed stormwater system will result in improvements. However to improve one watershed at the cost of the other is not a satisfactory approach. Additional information in the FEIR regarding compliance with the SMP should help to demonstrate that discharges to all project-area receiving waterbodies will comply with MassDEP guidelines. The Proponent must address water quality impacts of the project and proposed stormwater management system to Monoosnoc and Flag Brook and wetlands associated with Shea Brook and Sawmill Pond. The Proponent should discuss whether proposed stormwater improvements will help to address the delta that has formed at the confluence of Monoosnoc Brook with Pierce Pond.

While drainage improvements to remediate untreated discharges will enhance water quality, the Proponent should also identify and evaluate the impact of this project on water quantity in the Notown Reservoir. The Proponent should consider the use of Low Impact Development measures that will help recharge runoff to groundwater. A discussion of the tradeoffs between water quality and water quantity, and between treating runoff and recharging groundwater should be presented in the DEIR. The Proponent should consider the installation of bioswales or rain gardens along selected portions of the highway shoulder.

The DEIR detailed how the proposed stormwater improvements will enable improved spill containment and provide enhanced protection for the area's surface water system. Outfall pipes from storage basins will be equipped with valves that could be shut off to contain a large release coincident with a major rainfall event. In the FEIR the Proponent should provide clarification on the party responsible for maintenance of these valves. Following comments from MassDEP, after completion of the project, a set of detailed as-built plans for the stormwater management system in both hard and electronic copy should be provided to the Leominster Department of Public Works, Leominster Fire Department and MassDEP Central Region Emergency Response program so that these potential first responders have the required information when responding to a potential spill.

The Proponent will implement construction-period BMPs including haybales, filterfences and hydroseeding during the construction period for erosion and sedimentation control. These actions will be documented in the project's Stormwater Pollution Prevention Plan (SWPPP) and in Notice of Intent (NOI) plans submitted to the Fitchburg and Leominster Conservation Commissions.

The Proponent will develop an Operations & Maintenance Plan (O & M Plan) for the stormwater management system as the project that will be reviewed as part of the NOI process. The FEIR should include a draft O & M Plan for the drainage system to ensure its effectiveness including a schedule for maintenance and identification of responsible parties. The maintenance program should outline the actual maintenance operations, sweeping schedule and back-up systems.

Wetlands

Wetlands in the project area include Bordering Vegetated Wetlands (BVW), Land under Waterbodies/Waterways, Bank, Bordering Land Subject to Flooding, and Riverfront Area. A portion of project area wetlands are Outstanding Resource Waters (ORWs) associated with the Notown Reservoir. The Proponent has received Orders of Resource Area Delineation (ORADs) from the Leominster and Fitchburg Conservation Commissions confirming the boundaries of jurisdictional resource areas in the project area. The DEIR contained a discussion of the significance, functions and values of the resource areas relative to the Wetlands Protection Act (WPA).

The Proponent has committed to avoiding direct impacts to the Notown Reservoir. This decision requires that all roadway widening in the vicinity of the Reservoir must occur to the

north of the existing alignment, resulting in impacts to wetlands on the north side of Route 2. The project will result in impacts to 14 jurisdictional wetlands along the corridor. In total, there will be 18,112 sf of BVW impacts within the Notown Reservoir watershed and 48,116 sf of BVW impacts outside of the Reservoir. Total impacts to BVW will be 66,228 sf or 1.52 acres. While the project will result in impacts to more than 5,000 sf of BVW, a variance from the WPA will not be required if the project constitutes a "Limited Project" in accordance with the WPA regulations at 310 CMR 10.53(3)(f). The DEIR presents a discussion of changes to the project since the last MEPA filing that enable it to be reviewed under the Limited Project provisions. In its comments on the EENF, MassDEP states that if any of the proposed wetlands filling greater than 5,000 sf is not a Limited Project pursuant to 310 CMR 10.53, a variance would be required. The Proponent should clarify the applicability of the Limited Project provisions for all proposed work.

Since greater than 5,000 sf of wetlands will be impacted within 400 feet of the high water mark of a Class A surface water, a Variance from the Massachusetts Surface Water Quality Standards (314 CMR 4.00) administered by MassDEP pursuant to 314 CMR 9.08 will be required. Under the Water Quality Certificate (WQC) regulations at 314 CMR 9.08, the MassDEP Commissioner may waive any WQC regulation provided that the Proponent can demonstrate: 1) that all reasonable measures have been proposed to avoid, minimize and mitigate adverse impacts to the environment; and 2) that the project is determined to be necessary to accommodate an overriding community, regional, state or national public interest.

In response to the Secretary's Certificate on the ENF, the DEIR includes a draft variance request for review by MassDEP. In its justification for the variance, the Proponent asserts that there are no non-construction alternatives that can help to improve safety conditions on Route 2 and that there is no alternative to the proposed cross-sectional width in order to meet the project's purpose and need to unify the cross-section with the cross-section to the east and west of the project area. As outlined above, I have directed the Proponent to consider a reduced build alternative for the project that minimizes the proposed widening. The Proponent should evaluate the impact of this alternative on anticipated wetland impacts. The FEIR should also present a plan for the project in the event that the Proponent does not receive the variance from MassDEP.

Impacts to BVW will result from the placing of fill to construct the proposed cross-section and to create the area between the edge of the paved breakdown lane and the point at which the edge meets the existing ground. The Proponent conducted an analysis of construction alternatives related to the side slope of the highway to determine which approach would result in the least impacts to wetlands. Based on MassHighway's determination of each wetland's function and value (not as defined in the WPA), the Proponent will use retaining walls or side slopes at a ratio of 2:1 or 1:1 to minimize wetland impacts. MassHighway design standards require that in all feasible locations this side slope be designed at a 6:1 ratio. In consideration of the wetland resources along the corridor, the Proponent assumed a baseline 1:1 side slope of wetland minimization efforts within the ORWs of the Notown Reservoir watershed and a 2:1 baseline outside that watershed.

For BVW within the Notown Reservoir watershed, the Proponent will install retaining walls at impacted wetlands that have a principal function including either groundwater recharge, groundwater discharge, floodflow alteration, sediment/toxicant/pathogen retention, wildlife habitat or endangered species habitat, and in those cases where a retaining wall would reduce wetland impacts by at least 1,000 sf as compared to the base case 1:1 side slope. According to the DEIR, within the Notown watershed, the Proponent proposes to install 2:1 slopes at 3 wetland systems; 1:1 slopes at 2 wetland systems; and retaining walls at the remaining 4 affected wetland systems. The Proponent should explain the use of 2:1 slopes for wetlands in the Notown Reservoir. This proposal seems to contradict the baseline commitment of a 1:1 slope as noted above and on p. 4.25 of the DEIR.

For wetlands outside of the Notown Reservoir, the Proponent began with a commitment to 2:1 baseline side slopes. To qualify for a retaining wall the affected wetland would need to perform one of the functions listed above and the application of a retaining wall would need to reduce impacts by over 2,000 sf compared with a 2:1 side slope. Outside of the Notown watershed, the Proponent will install 2:1 slopes at 2 of 5 affected wetland systems, and retaining walls at the remaining 3 wetlands.

The DEIR provided a comparison of wetland impacts pre- and post-minimization efforts. Total wetland impacts within the Notown watershed with a 2:1 slope would be 27,421 sf. With the proposed combination of 2:1 slopes, 1:1 slopes and retaining walls, impacts will be reduced to 18,112 sf. Outside of the Notown watershed, total wetland impacts with a 2:1 slope would be 65,623 sf. With the proposed minimization efforts, impacts will be reduced to 48,116 sf. In total, wetland impacts will be reduced from 93,044 sf to 66,228 sf.

The Proponent should commit to the use of retaining walls only for wetlands to be impacted in the Notown Reservoir watershed. The Proponent has presented a cost/benefit analysis in the DEIR in support of its proposed combined approach of retaining walls, 1:1 slopes and 2:1 slopes. Given the expense associated with wetland replication, the Proponent should expand this analysis to compare the installation of retaining walls with the cost of replication. Cost estimates of replication should include design, construction, monitoring and contingency plans. The analysis may reveal that minimizing wetland impacts through the use of retaining walls could be less of a financial burden if the cost of replication is considered in the analysis.

According to the DEIR, the Proponent will mitigate impacts to BVW by creating wetland replication areas at a ratio of 1:1. The Proponent conducted an evaluation of eight potential wetland replication sites within the project area. Two creation sites within the Notown Reservoir watershed and one creation site within the Sawmill Pond/Flag Brook watershed have been selected as possible replication sites. For the 18,112 sf of BVW to be impacted within the Notown Reservoir/Monoosnoc Brook watershed, 18,505 sf of wetlands will be created in an area north of Route 2 along the Fifth Massachusetts Turnpike south/southwest of Rollstone Road. For the 48,116 sf of BVW to be impacted within the Sawmill Pond/Flag Brook watershed, approximately 48,116 sf of wetlands will be restored in an area located in an industrial park located north of Route 2 and west of Route 31.

The Proponent outlines the requirements in the WPA regulations for the replacement of impacted BVW, including: 1) the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area; 2) the overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area; 3) the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway as the lost area; and 4) at least 75 percent of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons... (310 CMR 10.55(4)(b)). The Proponent states in the DEIR that it is unable to comply with all but the fourth criterion referenced above due to the lack of practicable wetland replacement opportunities immediately adjacent to each impact area.

The Proponent must commit to additional wetlands mitigation in the FEIR. MassDEP has stated that at a minimum a ratio of 1.5:1 should be used. Given the significance of impacted wetlands, the low success rate with replication projects, and the fact that the Proponent acknowledges in the DEIR that it is unable to conform to MassDEP's inland wetland replication guidelines, I urge the Proponent to implement wetlands replication at a ratio of 2:1. The FEIR should present a detailed wetlands replication plan which, at a minimum, should include: replication location(s); elevations; typical cross sections; test pits or soil boring logs; groundwater elevations; the hydrology of areas to be altered and replicated; list of wetlands plant species of areas to be altered and the proposed wetland replication species; planned construction sequence; and a discussion of the required performance standards and long-term monitoring.

Riverfront Area impacts associated with the project will total approximately 488,000 sf. According to the DEIR, approximately 40 percent or 195,440 sf of this impacted area consists of existing pavement associated with Route 2, Mount Elam Road, Granite Street, Oak Hill and Palmer Roads. The Proponent is required to provide mitigation for impacts to Riverfront Area per 310 CMR 10.58 (4) and (5). The FEIR should provide a mitigation plan for this resource area. According to the DEIR, impacts to wetland #13 in the Sawmill Pond/Flag Brook watershed will involve the realignment of a perennial stream. The FEIR should provide more detail about this proposed impact.

Water Quality

The DEIR provided a discussion of the project's compliance with specific watershed protection policies applicable to the project area. Specifically, the City of Leominster has a Watershed Protection District established through Article VI of its Zoning Ordinance that prohibits certain activities in the project area. One prohibited activity is the use of chemicals for deicing unless necessary for public safety. The Proponent asserts in the DEIR that the use of sodium chloride is necessary for deicing purposes along Route 2. In January 1995, the City of Leominster requested that MassHighway consider reducing salting on Route 2 adjacent to Notown Reservoir. This request was denied on the basis of a review of historic data that according to MassHighway revealed that highway deicing salt had not had a measurable impact on the Reservoir.

The DEIR contained an analysis of existing and anticipated water quality impacts from salt use in the project area. The Proponent presented existing water quality in project area waterbodies based on historical records and based on the results of a site-specific water quality sampling program conducted by the Proponent in 2002. The emphasis of the water quality sampling program was the collection of additional data regarding concentrations of sodium and chloride, as one potential source of these elements in the study area surface water is from MassHighway's salting program on Route 2. The amount of roadway salt to be put down in the project area will increase due to the increased amount of pavement proposed as part of the project.

The results of the sampling program at three sampling stations revealed concentrations of sodium that exceeded MassDEP drinking water reporting guidelines of 20 mg/l (*MassDEP Drinking Water Standards and Guidelines for Drinking Water Chemicals*). At Sampling Station No. 1, the outlet from the Notown Reservoir to Goodfellow Pond near Granite Street, concentrations ranged from 9.1 mg/l to 37.4 mg/l, exceeding the MassDEP standards in 3 of 11 samples. At Sampling Station No. 2 at Shea Brook, a tributary to the Notown Reservoir, sodium concentrations ranged from 12.8 mg/l to 45.1 mg/l, with 10 of the 11 samples exceeding the MassDEP standard. At Sampling Station No. 3 at the outlet from Sawmill Pond at Flag Brook, sodium concentrations ranged from 23.3 mg/l to 260 mg/l. Chloride concentrations at this location varied from 38 mg/l to 518 mg/l, in some cases above the MassDEP standard of 250 mg/l. Chloride concentrations at the other two sampling locations were below the MassDEP standard.

The DEIR contrasts the results of the water quality sampling program with data from the City of Leominster's *Drinking Water Quality Report/Consumer Confidence Report*. The report notes that the highest detected value for sodium taken from samples at various points in the water system was 19.0 mg/l. The DEIR also states that a sample taken by the City of Leominster during May 2006 at the Simonds Pond intake to the water treatment plant indicated a value of 19 mg/l for sodium. I note that this is only 1 mg/l less than the recommended guideline. The DEIR states that even though sodium concentrations higher than the recommended 20.0 mg/l guideline were detected at two locations in the public water supply watershed during the water quality sampling program, these concentrations of sodium are not present in the water that reaches the consumer. The Proponent should address concerns outlined in comments that MassDEP has found the City's water quality data cited by the Proponent in the DEIR to be erroneous.

The project area contains 8.1 lane-miles of Route 2, based on 4 lanes for 1.95 miles plus 0.3 lane-miles associated with off-ramps. In 1995, MassHighway's application rate for sodium chloride was 240 lbs per lane-mile; therefore each deicing spreader application adds 1,944 lbs of sodium chloride on the roadway. Upon completion of the project, there will be an estimated 12.3 lane-miles of roadway, a 52 percent increase. Assuming that the amount of road salt put on the highway would increase by the same percentage, the amount of road salt applied would increase to 2,952 pounds. To measure the impact of this increase on water quality, the Proponent assumed a baseline sodium concentration of 9.0 mg/l in Simonds Pond, based on a sodium concentration of 6.5 mg/l measured in May 1994. From the baseline of 6.5 mg/l used in the DEIR, the Proponent estimates that the corresponding increase in sodium concentration in Simonds Pond resulting from the project would be 13.7 mg/l. The Proponent should clarify why it didn't use a

higher baseline, based on the results of its sampling program and measurements taken by the City of Leominster discussed above.

Despite the anticipated increase, the Proponent asserts that proposed improvements to the project-area stormwater management system will result in less salt on Route 2 reaching the Reservoir system. Stormwater containing dissolved salt from the portion of the roadway adjacent to the Notown Reservoir will be carried out of the watershed and discharged into the adjacent Sawmill Pond/Flag Brook watershed. On the eastern edge of the project, stormwater will be discharged into Monoosnoc Brook downstream of the intake of the water treatment plant. The Proponent states that other chemicals associated with motor vehicle traffic will not increase as a direct result of the project, as the capacity of the highway will not increase. As noted in this Certificate above, the FEIR must evaluate the impact of these diverted discharges to the new receiving water bodies.

The Proponent should discuss the project in the context of snow and ice control practices across the state. In June of 1997, the Proponent submitted an ENF to the MEPA office for its statewide Snow and Ice Control program (EEA#11202). As outlined in the 1997 ENF, the project consisted of a description of the methods used by state agencies to control snow and ice on roadways, the impact these methods have on the environment, and the mitigation implemented to compensate for these impacts. In response to the ENF, the Secretary required the preparation of a Generic Environmental Impact Report (GEIR); MassHighway was designated the lead agency for preparing the GEIR. A key purpose of the GEIR was to protect sensitive resource areas and determine whether a proactive (rather than reactive) approach is needed.

In a December 1, 2006 Certificate on the GEIR and a Special Review Procedure (SRP) Certificate, the GEIR was determined to require supplemental review in the form of an Environmental Status and Planning Report (ESPR). The SRP required MassHighway to file an ESPR Work Plan with a Draft Scope of Work for the ESPR by December 31, 2007 and to prepare a subsequent ESPR for the project following the regulatory requirements for the content of an EIR.

The Proponent should provide an update on the status of the ESPR Work Plan, which is due to be filed with MEPA in April of this year. The Proponent should discuss the criteria by which it determines a roadway to be designated a low-salt area; typically these areas have been established to protect a nearby municipal water supply well or water body. While runoff will be directed away from receiving waters in the Notown watershed; the Proponent should evaluate the use of pre-mix on project area roadways in the vicinity of the Notown Reservoir. Pre-mix is a mixture of sodium chloride and calcium chloride at a 4:1 ratio that is used by MassHighway in designated low salt roadway sections located throughout the state.

Rare Species

Portions of the proposed project are located within Priority Habitat and Estimated Habitat of the Blanding's Turtle (*Emydoidea blandingii*) and the Common Loon (*Gavia immer*), as indicated in the 12th Edition of the MA Natural Heritage Atlas. These species are listed as

“Threatened” and “Special Concern”, respectively, under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). The project requires a direct filing with NHESP for compliance with MESA. NHESP states that it is unable to determine potential impacts to state-listed species given the information in the DEIR.

In its comments on the EENF, NHESP voices concern about the potential loss or alteration of habitat and has requested that the Proponent submit a habitat assessment that focuses on the identification of suitable feeding, overwintering, migratory and nesting habitats for the Blanding’s Turtle within and immediately adjacent to the limit of work. The Proponent should consult with NHESP for additional guidance on the assessment requirements. The results of the assessment will assist NHESP in determining whether the project will result in a “take” of state-listed species. If the project cannot be revised to avoid a take, then it will require a Conservation & Management Permit (321 CMR 10.23). The FEIR should describe all impacts to habitat of state-listed rare species and demonstrate compliance with the MESA. The results of all habitat assessments and field surveys, in addition to plans for the long-term management of the habitat on site and any relevant communication with the NHESP, should be included in the FEIR.

Traffic

According to the DEIR, the project will provide improved traffic conditions, as measured by Level of Service (LOS), at the key at-grade intersections along the Route 2 corridor when compared with Future (2026) No-Build conditions at the same locations. A comparison of Build and No-Build scenarios on the Route 2 mainline shows that conditions will be the same in each case with the exception of eastbound Route 2 during the AM peak hour due to increased traffic associated with a potential housing development off Palmer Road. In addition to a general response to comments, the Proponent shall provide a detailed response to comments provided by local residents regarding safety and the geometry of proposed roadway improvements, and I hereby incorporate by reference the additional requests for information as part of the scope of the FEIR. The Proponent should also discuss the possibility of installing a pedestrian bridge over Route 2 at the northern end of Monoosnoc Trail.

Noise

The Proponent undertook an analysis of future noise levels at five single-family homes that are located in the 500-foot study zone along the project corridor. Traffic noise levels at four of the single-family homes are expected to approach or exceed applicable federal noise abatement criteria (NAC) after completion of the project. The Proponent should address concerns regarding noise impacts outlined in comments. The Proponent has conducted a cost analysis of the installation of noise barriers at those areas exposed to noise impact and has determined that the cost of installation of the barriers is not reasonable. It appears that part of the reason the analysis determined that the cost of a noise barrier was not reasonable is the small number of homes that would be affected. I urge the Proponent to consider the installation of a

noise barrier if possible and if not possible, to consider other possible mitigation measures such as the installation of vegetation.

Archaeological Resources

The project will not result in impacts to any National Register listed or Register-eligible resources will be impacted by the project as proposed in the DEIR. The Massachusetts Historic Commission (MHC) concurred with this finding and with archaeological survey results presented in the Proponent's "No Historic Properties Affected" Section 106 Finding for the project.

Construction

The FEIR should include a construction management plan for the project. The Proponent should discuss project phasing and outline measures that will be implemented to minimize potential construction period impacts on vegetation, water quality, wetlands, noise, air quality and traffic. I encourage the Proponent to participate in MassDEP's Clean Construction Equipment Initiative, consisting of the retrofitting of equipment and/or use of low sulfur fuel to reduce exposure to diesel exhaust fumes and particulate emissions during construction.

Mitigation

The DEIR contained a separate chapter on mitigation measures that MassHighway is committed to implementing in conjunction with the project. Based on additional information provided in response to this Certificate, the FEIR should include revised draft Section 61 Findings for use by the state permitting agencies. The draft Section 61 Findings should contain a clear commitment to any/all mitigation, an estimate of the individual costs of the proposed mitigation, and the identification of the parties responsible for implementing the mitigation. A schedule for the implementation of all mitigation must also be included.

January 30, 2008

Date



Ian A. Bowles

Comments received:

12/20/2007	Massachusetts Association of Conservation Commissions
1/4/2008	City of Leominster, Department of Public Works
1/4/2008	Water Supply Citizens Advisory Committee

1/7/2008 Montachusett Regional Planning Commission
1/9/2008 Robert A. Antonioni, State Senator, Worcester & Middlesex District
Jennifer L. Flanagan, State Representative, Fourth Worcester District
Stephen L. Dinatale, State Representative, Third Worcester District
1/17/2008 Leominster Land Trust
1/17/2008 City of Leominster Conservation Commission
1/17/2008 John Gabriel
1/18/2008 North Central Massachusetts Chamber of Commerce
1/18/2008 Fitchburg Conservation Commission
1/19/2008 Dick O'Brien, Trustees of the Reservations
1/21/2008 Philip Kras
1/21/2008 Edward Himlan
1/22/2008 Carole Taylor
1/22/2008 Division of Fisheries & Wildlife, Natural Heritage and Endangered Species
Program
1/22/2008 Department of Environmental Protection, Central Regional Office
1/22/2008 Larry P. Gianakis, Leominster Conservation Agent
1/23/2008 Nashua River Watershed Association
1/23/2008 Tim & Cindy Gabriel

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