Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

ENF Environmental Notification Form

For Office Use Only
Executive Office of Environmental Affairs
EOEA No.: 14279
MEPA Analyst: Nick Zavolas
Phone: 617-626-1030

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: METHUEN - I-93 AT THE ROUTE 110/113 ROTARY, INTERCHANGE RECONFIGURATION AND RECONSTRUCTION		
Street: Route 110/113/I-93		
Municipality: Methuen	Watershed: Merrimack River	
Universal Tranverse Mercator Coordinates: Zone 19N x=318960.336 y=4730452.503	Latitude:42°42'18.872" Longitude: 71°12'37.929"	
Estimated commencement date: 2014	Estimated completion date: 2017	
Approximate cost: $92,000,000	Status of project design: 10 %complete	
Proponent: MassHighway		
Street: 10 Park Plaza		
Municipality: Boston	State: MA	Zip Code: 02116
Name of Contact Person From Whom Copies of this ENF May Be Obtained: E. Ryan McNeill		
Firm/Agency: Massachusetts Highway Dept.	Street: 10 Park Plaza	
Municipality: Boston	State: MA	Zip Code: 02116
Phone: (617) 973-7446	Fax: (617) 973-8879	E-mail: e.ryan.mcneill@state.ma.us

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? ☒Yes ☐No

Has this project been filed with MEPA before? ☐Yes (EOEA No._____) ☒No

Has any project on this site been filed with MEPA before? ☐Yes (EOEA No._____) ☒No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐Yes	☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes	☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes	☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes	☒No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): The Massachusetts Highway Department is funding 20% of the costs and the Federal Highway Administration is funding 80% of the construction costs.

Are you requesting coordinated review with any other federal, state, regional, or local agency? ☐Yes(Specify_____) ☒No

List Local or Federal Permits and Approvals:
National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharge for Construction Activities, an Environmental Assessment in accordance with the National

Environmental Policy Act, a US Army Corps of Engineers Programmatic General Permit.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

☒ Land	☐ Rare Species	☒ Wetlands, Waterways, & Tidelands
☐ Water	☐ Wastewater	☒ Transportation
☐ Energy	☐ Air	☐ Solid & Hazardous Waste
☐ ACEC	☐ Regulations	☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	45		
New acres of land altered		7.17	
Acres of impervious area	16.27	5.62	21.89
Square feet of new bordering vegetated wetlands alteration		23,500	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage			
Number of housing units			
Maximum height (in feet)			
TRANSPORTATION			
Vehicle trips per day			
Parking spaces			
WATER/WASTEWATER			
Gallons/day (GPD) of water use			
GPD water withdrawal			
GPD wastewater generation/ treatment			
Length of water/sewer mains (in miles)			

State Permits & Approvals

- ☒ Order of Conditions
- ☒ Superseding Order of Conditions
- ☐ Chapter 91 License
- ☒ 401 Water Quality Certification
- ☐ MHD or MDC Access Permit
- ☐ Water Management Act Permit
- ☐ New Source Approval
- ☐ DEP or MWRA Sewer Connection/ Extension Permit
- ☒ Other Permits (*including Legislative Approvals*) – Specify:

NPDES Stormwater Construction Permit from U.S. EPA/MA DEP

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____) ☒No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☒Yes ☐No

The 2006 GIS maps prepared by the Massachusetts Division of Fish & Wildlife's Natural Heritage & Endangered Species Program, indicate a Priority Habitat for Rare Species (PH1222) along the Merrimack River and its banks. Correspondence has been sent to the Mass NHESP and a reply is expected in the near future. It is considered unlikely that the project will impact any riverine habitat for rare or endangered species. Coordination with MNHESP will also be performed when filing the Notice of Intent under the Massachusetts Wetlands Protection Act.

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒Yes ☐No

There are three individual properties within the project vicinity that are listed on the Massachusetts Cultural Resource Information System (MACRIS) Database. They are: 51 Lowell Street – Enoch H. Griffin House; 387 Lowell Street – Moses G. Smith House; 256 Haverhill Street – Patrick Cox House. MACRIS data are compiled from various state and federal sources including State Register of Historic Places listings and the National Register of Historic Places (NR) nominations. None of these properties are currently listed on the NR. However, further coordination with the Massachusetts State Historic Preservation Officer (SHPO) will occur as the project develops, in accordance with the Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f) and the State Chapter 254 (M.G.L. Chapter 9, Section 26-27c, as amended by Chapter 254 of the Acts of 1988). There are no archeological sites listed in either the NR or the MACRIS database. However, additional archeological studies may be warranted as the project design develops.

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify_____) ☒No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

Project Description

The Executive Office of Transportation and Public Works (EOTPW) has completed a study of transportation improvements at the Route 110 and Route 113 Rotary Interchange. This study was conducted to evaluate and address transportation issues at the Exit 46: Route 110 & 113 rotary interchange on I-93 (The Methuen Rotary Study) in the City of Methuen. The Methuen Rotary Study is available at www.methuenrotarystudy.org.

EOTPW established a Study Advisory Committee (SAC) to provide input throughout the The Methuen Rotary Study and to help guide the process. The SAC was composed of municipal officials, state legislators, regional entities, state agencies, and affected residents. To help define a meaningful mission statement for the overall study, the EOTPW, in cooperation with the SAC, established these primary goals:

- ***To increase mobility, reduce congestion, and improve safety at Exit 46: Route 110 & 113 Rotary***

on I-93 and surrounding arterials.

Specific objectives were established to achieve this goal. The objectives included;

- **the reduction of traffic congestion and delay at the interchange and on Routes 110 and 113;**
- **reduction of traffic queuing on the off-ramps back onto the mainline of I-93;**
- **improvement of air quality through better traffic flow and idle reduction;**
- **reduction of the potential for vehicle crash occurrence;**
- **minimize right-of-way impacts resulting from the alternatives; and**
- **the development of alternatives that are cost effective, supported by the SAC and the general public, and can be readily moved forward into the project development process.**

The primary study area included the Exit 46 Rotary Interchange on I-93 in Methuen at the convergence of Routes 110 and 113, and extended one-half mile in each direction east and west of the rotary.

Evaluation criteria were developed in cooperation with the SAC, and are shown in Table 1. The evaluation criteria categories included mobility, safety, environmental effects, land use and economic development, community cohesion, and cost and schedule. Within these categories are more specific measures of effectiveness, which were used to assess the benefits and impacts of the different alternatives. Ultimately, the criteria were a key factor in recommending improvements that would most optimally serve to address the defined goals and objectives.

Table 1 Evaluation Criteria

Criteria	Measure
Mobility	Vehicle Delays; Level of Service; Vehicle Miles Traveled; Vehicle Hours Traveled; Demand Shifts
Safety	Crash Rates/High Crash Locations; Public Safety; Pedestrian and Bicycle Access; School Bus Safety
Environmental Effects	Air Quality; Wetlands; Hazardous Material Sites; Archaeological and Historic Sites; Parks and Open Space; Farmland
Land Use and Economic Development	Access to Existing Parcels and Those Planned for Development; Right-of-Way; Parking
Community Cohesion	Neighborhood Identification; Pedestrian and Bicycle Access
Cost and Schedule	Construction Costs; Short-range feasibility; Permitting and Construction Timeframe

Public participation was a key part of EOTPW's open and inclusive study process. A public involvement plan was developed to support civic engagement in the study. In addition to the six SAC meetings and two public informational meetings, the study was covered by local newspapers and public access television. Additionally, an informational website (www.methuenrotarystudy.org) was maintained throughout the study to provide updates on the study progress, receive comments, and post review materials for the general public.

Existing and Future Conditions, Issues Identification, and Project Constraints

Once the study framework was established, the next task of the study was initiated and included data collection and analysis. This task consisted of the evaluation of the existing traffic conditions and transit services, the collection of socioeconomic data and economic development plans, and the documentation of land use and environmental conditions. Future year no-build traffic conditions were projected. Key issues and project constraints were identified, which were then used in the development of alternatives.

The following is a summary of issues and project constraints identified as part of the existing and future no-build conditions analyses:

- Congestion and delays are excessive at the Route 110/113 signalized intersections east and west of the rotary, and delays are excessive on the side-street approaches to the unsignalized intersections. These delays create unsafe conditions and degrade air quality.
- Under existing AM peak hour conditions, the entrance to the I-93 southbound on-ramp results in queues within the rotary and onto Route 110. This condition is expected to worsen by the design year 2025, with queues extending completely around the rotary.
- Under existing PM peak hour conditions, queuing on the I-93 northbound off-ramp extends back onto the mainline and is expected to worsen in the design year, resulting in more congestion and a potential increase in rear-end collisions.
- There are resident concerns with excessive speeds and high truck traffic volume on Route 113 west of the rotary.
- The rotary and the signalized intersections east and west of the rotary have significantly higher crash rates than the statewide average for similar intersections.
- Based on crash data analysis, lighting at the rotary may be substandard.
- The SAC indicated there is a safety concern regarding a school bus stop on 113 west of the rotary, which experiences reduced visibility from vegetation growth at the northwest corner of the rotary, further exacerbated by vehicles exiting I-93 southbound at high speeds.
- Potential gaps in existing transit service were identified, and there are no park & ride services in the study area.
- Some local drivers, who witness the daily AM congestion at the rotary, were observed seeking alternative routes by detouring onto local streets to bypass the rotary and access I-93 southbound.
- Natural and man-made constraints include: a large commercial building near the I-93 southbound off ramp, narrow right-of-way width along Route 113, the Merrimack River and its floodplains, wetlands, potentially historic properties, and substandard geometry of the rotary.

Development of Alternatives and Improvements

The development of alternatives for this project began with a review of the seven alternatives developed as part of the Route I-93 Corridor Study which was conducted in 2003 for the Merrimack Valley Planning Commission. A total of twelve alternatives were reviewed during The Methuen Rotary Study.

After reviewing the twelve developed alternatives, the SAC recommended that four alternatives be carried forward for additional analysis (conceptual design). These four were considered long-term alternatives since they would require a significant amount of time (10 to 15 years) to advance through the environmental permitting, design, right-of-way and construction processes.

The study team also developed a range of conceptual short-term roadway improvements (within 5 years), as well as transit, park & ride, and intelligent transportation system (ITS) options.

Analysis of Alternatives and Improvements

Each alternative was analyzed and reviewed in consideration of the evaluation criteria that were developed at the outset of the The Methuen Rotary Study. Each alternative was also reviewed in terms of meeting the goals of the project and minimizing property and environmental impacts. The four long-term alternatives under consideration were then narrowed to two options, and the short-term improvements were

consolidated to three packages.

Recommendations

The proposed improvements and alternatives were then presented at the second of two public informational meetings. Subsequent to this public meeting, the SAC reconvened to review the public input and responses in order to develop the final recommendations. **The following is a summary of the SAC's recommendations based upon the goals of the project, the evaluation criteria set forth at the outset of the study, and public input.**

Short Term Recommendations: In order to provide temporary relief for the study area until a long-term alternative can be constructed, the following short-term improvement packages were recommended for implementation. These Short Term Recommendations are currently being reviewed by MassHighway to determine if/when they could/should be implemented.

Short-term Improvement Package 1 generally consists of a series of improvements that would not require significant time for design and construction, and could be accomplished using MassHighway District 4 personnel and maintenance contracts. These improvements include:

- *Clear growth in the northwest quadrant to improve sight lines for vehicles exiting the rotary.*
- *Install warning signs for westbound vehicles exiting the rotary to watch for stopped traffic ahead.*
- *Install "No Engine Brakes" signs along Route 113 west of rotary.*
- *Install flashing yellow warning beacon at bottom of southbound off-ramp.*
- *Investigate the possibility of installing additional lighting at the rotary and in the vicinity.*

Short-Term Improvement Package 2 was recommended for implementation and is shown in Figure 1. This package is a relatively low cost improvement that would be within the existing pavement right-of-way, and could be implemented using MassHighway District 4 personnel and maintenance contracts. This package includes the reapplication of striping and pavement markings through the rotary and on the approaches, plus the installation of advance signage at all approaches to the rotary. The overall intent of this package is to help channelize traffic flow, and to facilitate merging and weaving maneuvers throughout the rotary.

Short-term Improvement Package 3, shown in Figure 2, would likely take a longer period of time to implement than Short-Term Packages 1 and 2. This is due to the need for an increased level of design, more substantial permitting and construction elements, and a higher anticipated construction cost that would require programming in the Merrimack Valley Metropolitan Planning Organization's Transportation Improvement Program to access the necessary funding.

Short-Term Improvement Package 3 generally consists of the following three components:

- *Roadway widening to accommodate rotary bypass lanes on three of the four approaches to the rotary.*
- *Realignment of the westbound exit from the rotary.*
- *Intersection improvements including the installation of two new signals and modifications to an existing signal.*

Long Term Recommendations: Two long-term alternatives were recommended to be carried forward into environmental phase, which is the next step of the project development process. During the environmental process there will be one preferred long-term alternative. The second long-term alternative and a no-build condition will also be included in order to provide a measure of comparison.

Alternative 3A, identified as the preferred alternative and as shown in Figure 3, is a partial cloverleaf configuration. This alternative would eliminate the rotary and realign Routes 110 and 113 under I-93. The roadway realignment would result in a continuous through movement for Route 113 west of the rotary to

Route 110 east of the rotary. Routes 110 and 113 west and east of the rotary would be realigned to provide a four-leg and a "T" intersection, respectively.

The interchange ramps would be realigned with the loops located in the northeast and northwest quadrants. These two loop ramps would cross Route 110/113 adjacent to, and at a similar elevation to the I-93 mainline. The ramp movements to and from the south would provide for separate entrance and exit points for Route 110/113 traffic, respectively. For the northbound off-ramp, this would involve splitting the eastbound and westbound traffic after exiting the mainline. Similarly, the southbound on-ramp would have two separate entrance points for eastbound and westbound Route 110/113 traffic.

Alternative 3A Construction Cost: $92,000,000

Alternative 2B, shown in Figure 4, is a modified Single Point Urban Interchange (SPUI). This concept would remove the northbound off-ramp to westbound Route 110 and 113 movements from the central intersection, while maintaining the general characteristics of a standard SPUI design. However, in this alternative the northbound off-ramp would stay parallel to the I-93 mainline for a longer distance and cross Route 110/113 at the level of the I-93 mainline, and then separate from the mainline looping to the northeast. After crossing over the northbound on-ramp, the off-ramp would descend to merge with Route 110/113 westbound with a right-turn only movement.

Alternative 2B Construction Cost: $97,000,000

Planning Organization Consistency

The design, engineering and construction for the Methuen Rotary alternative at I-93 and Routes 110 and 113 is listed on the Merrimack Valley Metropolitan Planning Organization's (MVMPO) endorsed 2008-2011 *Transportation Improvement Program* (TIP). The TIP is a financially constrained planning document that lists all highway, bridge, transit and intermodal projects in the Merrimack Valley planning region that are programmed to receive federal-aid funding. The projects in the TIP have been developed from the conforming 2007 Merrimack Valley Regional Transportation Plan (RTP). Both the MVMPO's 2007 RTP and the 2008-2011 TIP are consistent with the air quality goals of, and in conformity with, the Massachusetts State Implementation Plan. This project is listed as a High Priority Project in the TIP.

The project is consistent with the State Bicycle Plan and the State Pedestrian Plan. The proposed roadway reconstruction will accommodate bicycle/pedestrian access by providing adequate shoulders that conform to AASHTO standards for minimum widths (4-foot shoulders) to accommodate bicycle usage. The project will also include reconstruction of exiting sidewalks.

MEPA Review Thresholds

The proposed project exceeds MEPA review thresholds for Land, Wetlands Waterways and Tidelands, and Transportation. In accordance with the MEPA regulations an ENF is required because the project:

- creates greater than 5 acres of impervious area (301 CMR 11.03 (1)(b)2,
- alteration of greater than 5,000 square feet of isolated or bordering vegetated wetlands (301 CMR 11.03 (3)(b)1.d.),
- widening of an existing roadway for one-half or more miles (301 CMR 11.03 (6)(b)1.b),
- alters terrain ten or more feet from the existing roadway for one-half or more miles (301 CMR 11.03 (6)(b)2.a).

In accordance with the MEPA regulations an ENF and Mandatory EIR are required because the project triggers the following MEPA thresholds:

- Alteration requiring a Variance in accordance with the Wetlands Protection Act (301 CMR 11.03 (3)(a)2.