Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part I: General Conditions

General Information

Name of Municipality or Organization: University of Massachusetts - Lowell State: MA

EPA NPDES Permit Number (if applicable):

Primary MS4 Program Manager Contact Information

Name: Glenn MacDonald Title: Director, Environmental Health & Safety

Street Address Line 1: 220 Pawtucket Street

Street Address Line 2: Suite 140

City: Lowell State: MA Zip Code: 01854

Email: Glenn.MacDonald@uml.edu Phone Number: (978) 934-2632

Fax Number: (979) 934-4018

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed): N/A

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☐ A ☐ B ☒ C

National Historic Preservation Act (NHPA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☒ A ☐ B ☐ C

☐ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbodies to which your MS4 discharges. For each waterbody, please report the number of outfalls discharging into it and, if applicable, the segment ID and any impairments.

Massachusetts list of impaired waters: *Massachusetts 2014 List of Impaired Waters-* http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

Waterbody that receives flow from the MS4 and segment ID if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Merrimack River	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	Pathogens
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	

Click to lengthen table

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs). For municipalities/organizations whose MS4 discharges into a receiving water with an approved Total Maximum Daily Load (TMDL) and an applicable waste load allocation (WLA), identify any additional BMPs employed to specifically support the achievement of the WLA in the TMDL section at the end of part III.

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Imple-mentation**
Web Page	Stormwater link added to campus website	Students, Faculty, General Public	Environmental Health & Safety	Update website annually	2019
Letters to Contractors	Letter on potential impacts to stormwater from contractor operations	Businesses, Contractors	Facilities Management	Provide letters/ notice at the start of new work/contracts	2019
Establish Stormwater Information Coordinat	Identify SW contact and publicize contact info	Students, Faculty, Contractors, General Public	Environmental Health & Safety	Post SW Coordinator name and contact info on website - update annually	2019
Brochures/Pamphlets	Distribute annual message on pathogen controls	Students, Faculty, Employees, General Public	Environmental Health & Safety	Publish/Distribute annual message on pathogen controls (pet waste, septic system management)	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Imple-mentation
Public Review	SWMP Review	Environmental Health & Safety	Annual review of stormwater management plan and posting of stormwater management plan on website	2019
Public Participation	Public Meeting on Stormwater	Environmental Health & Safety	Allow students and general public to comment on stormwater management plan at annual meeting	2019
Public Participation	Catch Basin Stencil Program	Facilities Management	Continue stencil program - goal of 10 catch basins per year	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
SSO inventory	Develop SSO inventory in accordance of permit conditions. Coordinate with City of Lowell	Facilities Management	Complete within 4 years of effective date of permit	2022
Storm sewer system map	Update map during IDDE program development. Note inter- connections with City of Lowell.	Facilities Management	Complete Phase I map within 5 years of effective date of permit and complete full system map 10 years after effective date of permit	2022
Develop and implement IDDE program	Update written IDDE plan and implement according to permit conditions include need for pathogen control	Environmental Health & Safety	Begin implementation by year 4. Complete all investigations by year 10.	2022
Ensure legal authority for IDDE and new development and redevelopment requirements	Approve any required regulatory changes. Coordinate with City of Lowell to ensure consistent enforcement/ policies in place.	Facilities Management	Begin within 3 years of the effective date of the permit and update as needed.	2021
Employee training	Train employees on IDDE implementation	Environmental Health & Safety	Train annually and report on type and frequency of training	2022
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Environmental Health & Safety	Begin within 5 years after effective date of permit	2023
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Environmental Health & Safety	Implement along with dry weather screening program. Complete 10 years after effective date of permit	2023

Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Environmental Health & Safety	Perform ongoing outfall screening (as needed) upon completion of IDDE catchment investigations	2028

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Site inspection and enforcement of Erosion and Sediment Control (ESC) measures	Complete written procedures of site inspections and enforcement procedures	Facilities Management	Complete within 3 years of the effective date of permit	2021
Site plan review	Prepare written procedures for site plan review and inspections and begin implementation	Facilities Management	Complete, as applicable, within 3 years of the effective date of permit	2021
Erosion and Sediment Control	Adopt requirements for construction operators to implement a sediment and erosion control program	Facilities Management	Complete within 3 years of the effective date of permit	2021
Waste Control	Adopt requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	Facilities Management	Complete within 3 years of the effective date of permit	2021

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
As-built plans for on-site stormwater control	Establish procedures to require submission of as-built drawings. Ensure long term O&M of SW controls as part of the SWMP.	Facilities Management	Implement procedures and submission requirements, as applicable, by year 3.	2021
Target properties to reduce impervious areas	Identify at least 5 permittee-owned properties that could be modified or retrofitted with BMPs to reduce impervious areas	Facilities Management	Complete 6 years after effective date of permit and report annually on retrofitted properties	2024
Allow green infrastructure	As applicable to the University, develop a report assessing local regulations to determine the feasibility of allowing GI practices when appropriate site conditions exist	Facilities Management	Complete, if applicable, within 6 years after effective date of permit.	2024
Street design and parking lot guidelines	Coordinate with DCAMM on assessing requirements that affect impervious cover. The assessment will help determine if changes to design standards can be modified to support low impact design options.	Facilities Management	Complete 6 years after effective date of permit and implement recommendations of report	2024

Ensure any stormwater controls or management practices for new development and redevelopment meet the retention or treatment requirements of the permit and all applicable requirements of the Massachusetts Stormwater Handbook	Adopt, amend, or modify regulatory mechanisms to meet permit requirements	Facilities Management	Complete, as applicable. within 3 years after effective date of permit	2021

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
O&M procedures	Create written O&M procedures for university operations including all requirements contained in 2.3.7.a.ii for parks and open spaces, buildings and facilities, and vehicles and equipment	Facilities Management	Complete and implement within 4 years after effective date of permit	2022
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Create inventory for applicable categories, as listed in 2.7.a.ii.	Facilities Management	Complete 4 years after effective date of permit and implement annually	2022
Infrastructure O&M	Establish and implement program for repair and rehabilitation of MS4 infrastructure	Facilities Management	Complete 4 years after effective date of permit	2022
Stormwater Pollution Prevention Plan (SWPPP)	Review need for SWPPPs for maintenance garages and other waste-handling facilities	Environmental Health & Safety	Complete review and implement, if needed, within 4 years after effective date of permit	2022
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule	Facilities Management	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2022
Street sweeping program	Sweep all streets and university-owned parking lots in accordance with permit conditions	Facilities Management	Sweep all streets and university parking lots at least once per year in the spring	2022
Road salt use optimization program	Establish and implement a program to minimize the use of road salt	Facilities Management	Implement salt use optimization during deicing season	2022

Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	Facilities Management	Inspect and maintain treatment structures at least annually	2022
Employee Training - General Stormwater Topics	Develop and implement good housekeeping, SWPPP, and SPCC training, as required	Environmental Health & Safety	Train employees annually on good-housekeeping best practices	2022

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Total Maximum Daily Load (TMDL) Requirements

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Applicable TMDL	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
None	Adhere to requirements in part A.II of Appendix F	

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. In addition, if you are subject to additional requirements due to a downstream nutrient impairment (see Part 2.2.2 of the permit) select the pollutant of concern and indicate applicable waterbody IDs or write "all waterbodies" if applicable. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Pathogens	Merrimack River	Adhere to requirements in part III of Appendix H	Environmental Health & Safety

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.1and 2.2.2 that you have identified as not applicable to your MS4 because you do not discharge to the impaired water body or a tributary to an impaired water body due to nitrogen or phosphorus. Provide all supporting documentation below or attach additional documents if necessary.
Also, provide any additional information about your MS4 program below.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part V: Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:	Thomas Miliano	Title:	Senior Director of Administrative Services
Signature:		Date:	09/26/18

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Note: When prompted during signing, save the document under a new file name

Memo

To: University of Massachusetts at Lowell

From: Rich Niles, Amec Foster Wheeler
Jean Haggerty, Amec Foster Wheeler

Date: September 17, 2018

Re. Municipal Separate Storm Sewer System (MS4) Endangered Species and Cultural Review

AMEC Massachusetts, Inc. (AMEC) understands that the University of Massachusetts at Lowell (UMass Lowell) is preparing to seek coverage under the April 4, 2016 National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) General Permit (GP) administered by the U.S. Environmental Protection Agency (USEPA), and is seeking assistance to evaluate the GP eligibility criteria related to the Endangered Species Act (ESA) and National Historic Preservation Act (NHPA) in support of filing a Notice of Intent (NOI) for the GP. These requirements are outlined in Part 1.9 of the MS4 GP and the results of the special eligibility determinations must be documented in Part I of the NOI that needs to be submitted to the USEPA by September 28, 2018 to obtain permit coverage.

As you are aware, owners and operators of MS4s are required to develop, implement, and enforce a stormwater management program (SWMP) per the NPDES MS4 GP requirements. Applicants applying for permit coverage must assess the impacts of their stormwater discharges and discharge-related activities on federally listed threatened and endangered (T&E) species and designated critical habitat under the ESA, as well as the effect on historic properties that are either listed on, or are eligible for listing on, the National Register of Historic Places (NRHP) under the NHPA. The following provides information related to T&E species, critical habitat, and historic properties at UMass Lowell and the procedures required to ensure compliance with the ESA and NRHP, as specified in Appendices C and D in the MS4 GP. A series of three figures identifying UMass Lowell properties and stormwater infrastructure, known T&E species habitat, and historic properties at and within 100 feet of UMass Lowell properties are provided in **Attachment A**. Note all of UMass Lowell is located within the 2010 Urbanized Area[1] and as such it is not specifically identified on the figures.

[1] As outlined in Part 1.2.1 of the MS4 GP: "If the small MS4 is not located entirely within an urbanized area, only the portion of the MS4 that is located within the urbanized area is regulated under 40 CFR §122.32(a) (1)". The special eligibility determinations of the MS4 GP, therefore, only apply to activities within the Urbanized Area of UMass Lowell. It is important to note that the Urbanized Area will likely expand following the next US Census. UMass Lowell may wish to establish a policy for MS4 project reviews that applies UMass Lowell-wide to ensure consistency with the ESA and NHPA requirements.

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Chelmsford, MA 01824
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amecfw.com

This information contained in this memorandum must be incorporated into the UMass Lowell SWMP (once developed) to document the special eligibility determinations.

1. Endangered Species Act Compliance

The only federally-listed T&E species at UMass Lowell is the threatened Northern long-eared bat (NLEB; *Myotis septentrionalis*), which was listed on April 2, 2015 and is listed statewide in Massachusetts (see **Attachment B**). There is no critical habitat designated for the NLEB. The U.S. Fish and Wildlife Service (USFWS) developed a final 4(d) rule, which was published in the *Federal Register* on January 14, 2016, and specifically defines the NLEB "take" prohibitions. The term "take" is defined in the ESA to include harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.

Incidental take of the NLEB or its habitat that is not prohibited under the 4(d) rule may still affect individual NLEBs. The USFWS has provided a framework to streamline Section 7 ESA consultations when actions may affect the NLEB but not cause prohibited take. However, the streamlined consultation does not necessarily solicit a response from the USFWS, which is required for eligibility certification under the MS4 GP, as discussed below. The USFWS key to determining whether federally regulated actions may cause incidental or prohibited take of the NLEB is provided as **Attachment C.**

Evaluation of USFWS Criteria for MS4 GP Eligibility

Criterion A cannot be used to certify eligibility consistent with Appendix C of the MS4 GP because the NLEB is listed statewide and therefore throughout the action area at UMass Lowell. For projects that are deemed to have "no effect" on the NLEB or its habitat (e.g., if suitable habitat is not present in the action area and the project does not otherwise present a risk to the species), typically no further consultation is required. Since the only federally listed species present at UMass Lowell is the NLEB, Criterion B does not apply.

Criterion C can be met if during the course of the permit term, installation of any structural Best Management Practices (BMPs) within the Urbanized Area that are not identified in the NOI are screened for impacts to federal T&E species and the USFWS is consulted if activities "may affect" or are "not likely to adversely affect" T&E species. For instance, if tree removal was required for construction of a stormwater basin or to gain access to an existing outfall, consultation with the USFWS would be required (see consultation options below). However, activities which would not impact the NLEB or its habitat such as maintenance (with no tree clearing) of an existing outfall would not require consultation with the USFWS. **Criterion C, therefore, is the appropriate criterion for UMass Lowell to cite for ESA compliance in the NOI for the MS4 GP.**

USFWS Consultation Guidance for the NLEB (for future reference)

In general, the following activities that may affect the NLEB or its habitat are not eligible for the streamlined Section 7 ESA consultation and are typically deemed as having the potential to affect the NLEB:

- Purposeful take (non-incidental take);
- Direct impact to caves or hibernaculum, or their entrance, where NLEBs are known to hibernate;
- Removal of a NLEB known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31; and

- Removal of any trees within 0.25 miles of NLEB hibernaculum at any time of year.

The USFWS has relied on state agencies to identify the locations of known NLEB hibernacula and maternity roost trees for compliance with these requirements. The USFWS does not require surveys for NLEB maternity roost trees or hibernacula, but recommend they be conducted, if possible. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has mapped all known hibernacula and maternity roost trees in the state, which is available online at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-mammals/northern-long-eared-bat.html.

There are no known NLEB maternity roost trees mapped outside of Cape Cod and the islands and there are no known NLEB hibernacula at or within 0.25 miles of UMass Lowell. The USFWS 4(d) Rule Streamlined Consultation Form is included as **Attachment D** as it identifies the type of information the USFWS will require for consultation for activities that qualify for streamlined consultation within the Urbanized Area. This will be relevant for any future stormwater projects that involve construction of new stormwater infrastructure or substantial maintenance or rehabilitation of existing stormwater infrastructure within the Urbanized Area and where the limit of work extends beyond the existing footprint and involves tree clearing.

2. National Historic Preservation Act Compliance

Section 106 of the NHPA requires projects with a federal action to take into account the effects of "undertakings" on historic properties that are either listed on, or eligible for listing on, the NRHP. Historic properties are defined in the NHPA regulations to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the NRHP. Coordination with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officers (THPOs) and others may be required to determine effects of discharges on historic properties.

Evaluation of NHPA Criteria for MS4 GP Eligibility

The USEPA has stated in Appendix D of the MS4 GP that authorized discharges confined to existing channels, outfalls, or natural drainage areas are deemed to not have the potential to cause effects on historical properties. These activities meet Criteria A in Appendix D of the MS4 GP, as they do not have the potential to cause effects on historic properties. MS4 GP eligibility under Criterion A is discussed further below. Existing information regarding historic properties provided by the Massachusetts Historical Commission (MHC) and the NRHP will be utilized to determine the presence and extent of historic properties. Historic surveys will not be conducted; therefore, Criterion B in Appendix D of the MS4 GP does not apply.

Certain activities such as the construction and/or installation of stormwater control measures that involve subsurface disturbance of less than one acre of land may have the potential to have an effect on historic properties. For these activities within the Urbanized Area, UMass Lowell will need to ensure that historic properties will not be impacted or that they are in compliance with a written agreement with the SHPO, THPO, or other tribal representative that outlines all measures UMass Lowell will carry out to mitigate or prevent any adverse effects on historic properties. Note that ground disturbance greater than one acre would require coverage under the USEPA NPDES Construction General Permit (CGP), which contains the same permit eligibility requirements with respect to the NHPA.

Lowell National Historical Park (NHP), which is listed on the NRHP, contains numerous historic properties as shown on the figures in Attachment A and identified in the list of historic properties at and within 100 feet of UMass Lowell provided in **Attachment E**. Additional NRHP and state-listed properties are also present near UMass Lowell facilities. Several stormwater outfalls are located along the Merrimack River in the NHP as well as numerous other manholes and catch basins/inlets. Additional historic or potentially historic properties in the state inventory are also shown on the figures in Attachment A and listed in Attachment E. **AMEC understands that UMass Lowell is not undertaking any activity involving subsurface land disturbance less than one acre (associated with the storm drain system); therefore, UMass Lowell meets Criterion A in Appendix D of the MS4 GP.**

SHPO and THPO Consultation Guidance (for future reference)

Future activities within Lowell NHP or proximate to other identified historic resources, all of which are in the Urbanized Area, that involve subsurface disturbance in areas that have not already been disturbed (so as to preclude the possibility of containing historic properties) will need to be reviewed to determine if consultation with the SHPO and THPOs are required. If consultation with the SHPO and THPOs is necessary, a Project Notification Form (PNF) must be submitted and a copy is provided as **Attachment F** for reference.

List of Attachments

Attachment A:	Figures (Sheets 1-3)
Attachment B:	Federally Listed Endangered and Threatened Species in Massachusetts
Attachment C:	Key to the Northern Long-Eared Bat 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats
Attachment D:	USFWS 4(d) Rule Streamlined Consultation Form (blank)
Attachment E:	List of Properties at and within 100 Feet of UMass Lowell on the National Register of Historic Places and Massachusetts State Inventory
Attachment F:	Massachusetts Historical Commission Project Notification Form (blank)

Attachment A:

Figures (Sheets 1-3)

Storm Sewer Map

North Campus

UMASS LOWELL

Lowell, MA

Legend

- UML Owned Properties
- Stormwater Outfall
- Stormceptor
- Catchbasin
- Leaching Catchbasin
- Manholes
- Unable to access
- Unable to locate
- Key Juntion Structure
- Interconnection with Lowell MS4
- Roof Drain
- Oil/Water Separator
- Overflow Drain

Pipe Type

- Storm Drain
- Sanitary Sewer
- Combined Sewer
- Assumed Continuation of Pipe
- Pipes Operated by City of Lowell
- Pipes Operated by UMass Lowell
- Grates

MHC Historic Inventory

- NRDIS
- All Other Designations
- Historic District (Other Designation)
- NRDIS Historic District

Notes and Sources

FIGURE 1

Aerial Photo: MassGIS 2015.
Note: UML Campus is entirely within the 2010 Urban Area boundary.

0 200 Feet

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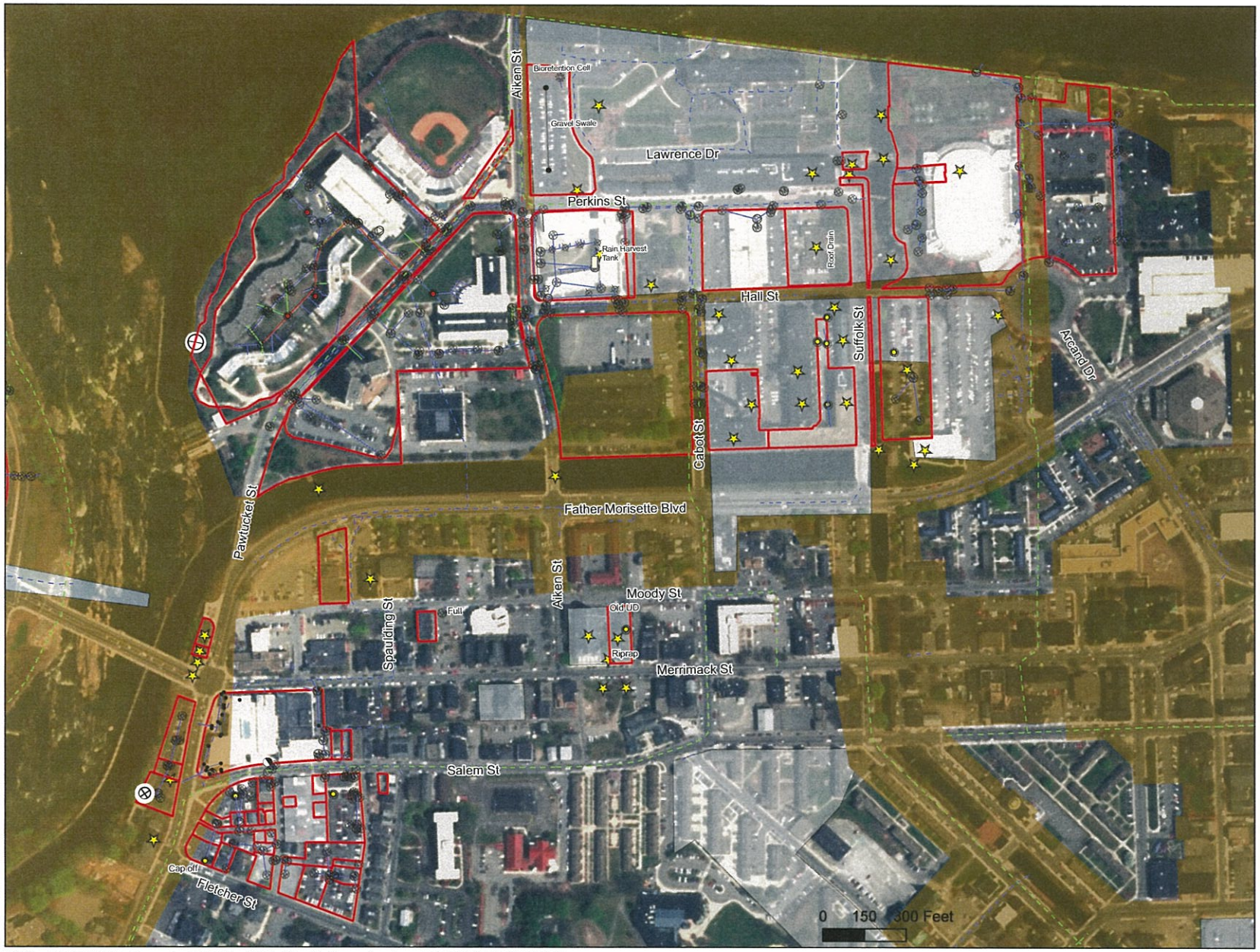
Document Path: H:\UMASS\Lowell_MA\Task2_Stormwater\MXD\MS4_NOI2018\NorthCampus_Stormwater2_wHistoric.mxd



Storm Sewer & Historical Sites Map
East Campus

UMASS LOWELL

Lowell, MA

Legend

- UML Owned Properties
- UML Properties under construction
- Stormwater Outfall
- Stormceptor
- Catchbasin
- Leaching Catchbasin
- Manholes
- Unable to access
- Unable to locate
- Key Juntion Structure
- Interconnection with Lowell MS4
- Roof Drain
- Oil/Water Separator
- Overflow Drain

Pipe Type

- Storm Drain
- Sanitary Sewer
- Combined Sewer
- Assumed Continuation of Pipe
- Pipes Operated by City of Lowell
- Pipes Operated by UMass Lowell
- Grates

MHC Historic Inventory

- NRDIS
- All Other Designations
- Historic District (Other Designation)
- NRDIS Historic District

Notes and Sources

FIGURE 2

Aerial Photo: MassGIS 2015.
Note: UML Campus is entirely within the 2010 Urban Area boundary.

0 300 Feet

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Storm Sewer Map

South Campus

UMASS LOWELL

Lowell, MA

Legend

- UML Owned Properties
- UML Properties under construction
- Stormwater Outfall
- Stormceptor
- Catchbasin
- Leaching Catchbasin
- Manholes
- Unable to access
- Unable to locate
- Key Juntion Structure
- Interconnection with Lowell MS4
- Roof Drain
- Oil/Water Separator
- Overflow Drain

Pipe Type

- Storm Drain
- Sanitary Sewer
- Combined Sewer
- Assumed Continuation of Pipe
- Pipes Operated by City of Lowell
- Pipes Operated by UMass Lowell
- Grates

MHC Historic Inventory

- NRDIS
- All Other Designations
- Historic District (Other Designation)
- NRDIS Historic District

Notes and Sources

FIGURE 3

Aerial Photo: MassGIS 2015.
Note: UML Campus is entirely within the 2010 Urban Area boundary.

0 200 Feet

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Attachment B:

Federally Listed Endangered and Threatened Species in Massachusetts

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Updated 02/05/2016

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Middlesex County, Massachusetts

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NOT FOR CONSULTATION

Northern Long-eared Bat Myotis septentrionalis Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

NOT FOR CONSULTATION

Attachment C:

Key to the Northern Long-Eared Bat 4(d)
Rule for Federal Actions that May Affect Northern Long-Eared Bats

U.S. Fish & Wildlife Service

Key to the Northern Long-Eared Bat 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats

A separate key is available for non-federal activities

Federal agency actions that involve incidental take not prohibited under the final 4(d) rule may result in effects to individual northern long-eared bats. Per section 7 of the Act, if a federal agency's action may affect a listed species, consultation with the Service is required. This requirement does not change when a 4(d) rule is implemented. However, for this 4(d) rule, the Service proposed a framework to streamline section 7 consultations when federal actions may affect the northern long-eared bat but will not cause prohibited take. Federal agencies have the option to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework. This key will help federal agencies determine if their actions may cause prohibited incidental take of northern long-eared bats as defined in the 4(d) rule under the Endangered Species Act and if separate section 7 consultation may be necessary. Also, the framework for streamlining northern long-eared bat section 7 consultation is provided.

1. **Have you determined that the proposed action will have "no effect" on the northern long-eared bat?**

   Yes, the proposed action will have "no effect" on the northern long-eared bat. When the action agency determines its proposed action will not affect a listed species, there is no need to coordinate further with the Service. If the northern long-eared bat will not be exposed directly or indirectly to the proposed action or any resulting environmental changes, an agency should conclude "no effect" and document the finding and this completes the section 7 process. For example, if suitable habitat is not present in the action area and the project does not otherwise present a risk to the species, conclude "species not present" and document your finding.

   No, the proposed action "may affect" the northern long-eared bat or individual northern long-eared bats.
   Continue to #2

2. **Will your activity purposefully take (see Definitions below) northern long-eared bats? For example, are you removing bats from a human structure or capturing bats for research?**

   Yes, my activity includes purposefully taking northern long-eared bats.

   - Removing bats from human structures is not prohibited and take of northern long-eared bats as required for public health monitoring (disease testing) is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is

optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

- Research that involves handling bats does require a permit after May 4, 2016; if you are conducting research that includes capturing and handling northern long-eared bats, you should contact the U.S. Fish and Wildlife Service to apply for a permit. www.fws.gov/endangered/regions

- Other purposeful take (see Definitions below) of northern long-eared bats is prohibited. You should contact the U.S. Fish and Wildlife Service as the standard section 7 consultation procedures apply.

No, my activity does not include purposefully taking northern long-eared bats.
Continue to #3.

3. Is the action area (i.e., the area affected by all direct and indirect project effects) located wholly outside the White-nose Syndrome Zone? For the most current version of the White-nose Syndrome Zone map, please see www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf

Yes, the action area is located wholly outside the white-nose syndrome zone.
Incidental take (see Definitions below) of northern long-eared bats is not prohibited in areas outside the White-nose Syndrome Zone. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

No, the action area is located partially or wholly inside the white-nose syndrome zone.
Continue to #4

4. Will the action take affect caves or mines where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

Yes, the action will affect a northern long-eared bat hibernaculum or it could alter the entrance or the environment (physical or other alteration) of a hibernaculum.
Take (see Definitions below) of northern long-eared bats within hibernacula is prohibited, including actions that may change the nature of the hibernaculum's environment or entrance to it, even when the bats are not present. If your activity includes work in a hibernaculum or it could alter its entrance or environment, please contact the Service's Ecological Services Field Office located nearest to the project area. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices.

No, the action will not take place within a northern long-eared bat hibernaculum or alter its entrance or environment.
Continue to #5

5. **Will the action involve tree removal (see definition below)?**

No, the action does not include tree removal.
Incidental take (see Definitions below) from activities that do not involve tree removal and do not take place within hibernacula or would not alter the hibernaculum's entrance or environment (see Question #4), is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

Yes, the action involves tree removal.
Continue to #6

6. **Is the action the removal of hazardous trees for protection of human life or property?**

Yes, the action is removing hazardous trees.
Incidental take (see Definitions below) of northern long-eared bats as a result of hazardous tree removal is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

No, the action is not removing hazardous trees.
Continue to #7

7. **Will the action include one or both of the following: 1) removing a northern long-eared bat known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31; or 2) removing any trees within 0.25 miles of a northern long-eared bat hibernaculum at any time of year?**

No
Incidental take (see Definitions below) from tree removal activities is not prohibited unless it results from removing a known occupied maternity roost tree or from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31 or results from tree removal activities within 0.25 mile of a hibernaculum at any time. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

Yes
Incidental take (see Definitions below) of northern long-eared bats is prohibited if it occurs as a result of removing a known occupied maternity roost tree or removing trees within 150 feet of a known occupied maternity roost tree during the pup season from June 1 through July 31 or as a result of removing trees from within 0.25 mile of a hibernaculum at any time of year. This does not mean that you cannot conduct your action; however, standard section 7 consultation procedures apply. Please contact your nearest Ecological Services Field Office. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices

How do I know if there is a maternity roost tree or hibernacula in the action area?
We acknowledge that it can be difficult to determine if a maternity roost tree or a hibernaculum is in your project area. Location information for both resources is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

When looking for information on the presence of maternity roost trees or hibernacula within your project area, our expectation is that the federal action agency will complete due diligence to determine if date is available. If information is not available, document your attempt to find the information and send it with your determination under step 1 of the framework (see below).

We do not require federal agencies to conduct surveys; however, we recommend that surveys be conducted whenever possible. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat. In addition, should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could have greater flexibility under section 7(a)(2) of the Act. Recommended survey methods are available at www.fws.gov/midwest/endangered/mammals/nleb.

Definitions

"Incidental take" is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

"Known hibernacula" are defined as locations where one or more northern long-eared bats have been detected during hibernation or at the entrance during fall swarming or spring emergence. Given the challenges of surveying for northern long-eared bats in the winter, any hibernacula with northern long-eared bats observed at least once, will continue to be considered "known hibernacula" as long as the hibernacula remains suitable for northern long-eared bat.

"Known occupied maternity roost trees" is defined in the 4(d) rule as trees that have had female northern long-eared bats or juvenile bats tracked to them or the presence of female or juvenile bats is known as a result of other methods. Once documented, northern-long eared bats are known to continue to use the same roosting areas. Therefore, a tree will be considered to be a "known occupied maternity roost" as long as the tree and surrounding habitat remain suitable for northern long-eared bat. The incidental take prohibition for known occupied maternity roosts trees applies only during the during the pup season (June 1 through July 31).

"Purposeful take" is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and putting bands on bats is a form of purposeful take. Intentionally killing or harming bats is also purposeful take and is prohibited.

"Take" is defined by the ESA as 'to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any endangered species. Purposeful take is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and putting bands on bats is a form of purposeful take.

"Tree removal" is defined in the 4(d) rule as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.

Optional Framework to Streamline Section 7 Consultation for the Northern Long-Eared Bat

The primary objective of the framework is to provide an efficient means for U.S. Fish and Wildlife Service verification of federal agency determinations that their proposed actions are consistent with those evaluated in the programmatic intra-Service consultation for the final 4(d) rule and do not require separate consultation. Such verification is necessary because incidental take is prohibited in the vicinity of known hibernacula and known roosts, and these locations are continuously updated. Federal agencies may rely on this Biological Opinion to fulfill their project-specific section 7(a)(2) responsibilities under the following framework:

1. For all federal activities that may affect the northern long-eared bat, the action agency will provide project-level documentation describing the activities that are excepted from incidental take prohibitions and addressed in this consultation. The federal agency must provide written documentation to the appropriate Service Field Office when it is determined their action may affect (i.e., not likely to adversely affect or likely to adversely affect) the northern long-eared bat, but would not cause prohibited incidental take. This documentation must follow these procedures:

    a. In coordination with the appropriate Service Field Office, each action agency must make a determination as to whether their activity is excepted from incidental taking prohibitions in the final 4(d) rule. Activities that will occur within 0.25 mile of a known hibernacula or within 150 feet of known, occupied maternity roost trees during the pup season (June 1 to July 31) are not excepted pursuant to the final 4(d) rule. This determination must be updated annually for multi-year activities.
    b. At least 30 days in advance of funding, authorizing, or carrying out an action, the federal agency must provide written notification of their determination to the appropriate Service Field Office.
    c. For this determination, the action agency will rely on the definitions of prohibited activities provided in the final 4(d) rule and the activities considered in this consultation.
    d. The determination must include a description of the proposed project and the action area (the area affected by all direct and indirect project effects) with sufficient detail to support the determination.
    e. The action agency must provide its determination as part of a request for coordination or consultation for other listed species or separately if no other species may be affected.
    f. Service concurrence with the action agency determination is not required, but the Service may advise the action agency whether additional information indicates consultation for the northern long-eared bat is required; i.e., where the proposed project includes an activity not covered by the 4(d) rule and thus not addressed in the Biological Opinion and is subject to additional consultation.

g. If the Service does not respond within 30 days under (f) above, the action agency may presume its determination is informed by best available information and consider its project responsibilities under section 7(a)(2) with respect to the northern long-eared bat fulfilled through this programmatic Biological Opinion.

2. Reporting

   a. For monitoring purposes, the Service will assume all activities are conducted as described. If an agency does not conduct an activity as described, it must promptly report and describe such departures to the appropriate Service Field Office.
   b. The action agency must provide the results of any surveys for the northern long-eared bat to the appropriate Service Field Office within their jurisdiction.
   c. Parties finding a dead, injured, or sick northern long-eared bat must promptly notify the appropriate Service Field Office.

If a Federal action agency chooses not to follow this framework, standard section 7 consultation procedures will apply.

Section 7(a)(1) of the Act directs Federal agencies, in consultation with and with the assistance of the Secretary (a function delegated to the Service), to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Service Headquarters provides to federal action agencies who choose to implement the framework described above several conservation recommendations for exercising their 7(a)(1) responsibility in this context. Conservation recommendations are discretionary federal agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. Service Headquarters recommends that the following conservation measures to all Federal agencies whose actions may affect the northern long-eared bat:

1. Perform northern long-eared bat surveys according to the most recent Range-wide Indiana Bat/ northern long-eared bat Summer Survey Guidelines. Benefits from agencies voluntarily performing northern long-eared bat surveys include:

   a. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. The Service and partners will use the survey data to better understand habitat use and distribution of northern long-eared bats, track the status of the species, evaluate threats and impacts, and develop effective conservation and recovery actions. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat.
   b. Should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could inform greater flexibility under section 7(a)(2) of the Act. Such information could facilitate an expedited consultation and incidental take statement that may, for example, exempt taking associated with tree removal during the active season, but outside of the pup season, in known occupied habitat.

2. Apply additional voluntary conservation measures, where appropriate, to reduce the impacts of activities on northern long-eared bats. Conservation measures include:

    a. Conduct tree removal activities outside of the northern long-eared bat pup season (June 1 to July 31) and/or the active season (April 1 to October 31). This will minimize impacts to pups at roosts not yet identified.
    b. Avoid clearing suitable spring staging and fall swarming habitat within a 5-mile radius of known or assumed northern long-eared bat hibernacula during the staging and swarming seasons (April 1 to May 15 and August 15 to November 14, respectively).
    c. Manage forests to ensure a continual supply of snags and other suitable maternity roost trees.
    d. Conduct prescribed burns outside of the pup season (June 1 to July 31) and/or the active season (April 1 to October 31). Avoid high-intensity burns (causing tree scorch higher than northern long-eared bat roosting heights) during the summer maternity season to minimize direct impacts to northern long-eared bat.
    e. Perform any bridge repair, retrofit, maintenance, and/or rehabilitation work outside of the northern long-eared bat active season (April 1 to October 31) in areas where northern long-eared bats are known to roost on bridges or where such use is likely.
    f. Do not use military smoke and obscurants within forested suitable northern long-eared bat habitat during the pup season (June 1 to July 31) and/or the active season (April 1 to October 31).
    g. Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.
    h. Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution by angling lights downward or via other light minimization measures.
    i. Participate in actions to manage and reduce the impacts of white-nose syndrome on northern long-eared bat. Actions needed to investigate and manage white-nose syndrome are described in a national plan the Service developed in coordination with other state and federal agencies.

Attachment D:

USFWS 4(d) Rule Streamlined Consultation Form (blank)

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☐
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☐	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☐
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☐
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☐
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☐

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3] (Name, Email, Phone No.):

Project Name:

Project Location (include coordinates if known):

Basic Project Description (provide narrative below or attach additional information):

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☐
Does the project occur within 150 feet of a known maternity roost tree?	☐	☐
Does the project include forest conversion[4]? (if yes, report acreage below)	☐	☐
Estimated total acres of forest conversion		
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☐
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☐
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☐
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: _____ Date Submitted: _____

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Attachment E:

List of Properties at and Within 100 Feet of UMass Lowell on the National Register of Historic Places and Massachusetts State Inventory

List of Properties on the National Register of Historic Places and Massachusetts Historical Commission State Inventory at and within 100 feet of UMass Lowell Properties

MHC ID	Type	Designation*	Historic Name	Common Name	Address	Constructed
LOW.306	Building	ST	International Cotton Company	N/A	117 Marginal St	1920
LOW.339	Building	NR	Allen House	Terrace, The - White - Allen House	57 Rolfe St	1854
LOW.947	Structure	ST	Wilder Street Bridge over B&M Railroad	N/A	Wilder St	1924
LOW.351	Building	ST	Guiney, William House	N/A	156 Wilder St	1896
LOW.277	Building	ST	Coburn Hall - Lowell Normal School	University of Lowell - South Campus	Broadway	1897
LOW.9117	Object	ST	Debussy, Claude Statue	N/A	Wilder St	1987
LOW.283	Building	ST	McDonald, Thomas J. House	N/A	820 Broadway	1895
LOW.4005	Building	ST	Lowell Textile Institute - Alumni Memorial Library	University of Massachusetts Lowell - Alumni Lib.	84 University Ave	1949
LOW.3735	Building	ST	N/A	N/A	23 Sarah Ave	1920
LOW.3737	Building	ST	N/A	N/A	27 Sarah Ave	1901
LOW.3706	Building	ST	Turcotte, L. P. Three Decker	N/A	170 Riverside St	1909
LOW.3695	Building	ST	N/A	N/A	39 Plymouth St	N/A
LOW.4003	Building	ST	Lowell Textile Institute - Colonial Avenue Bldg	University of Massachusetts Lowell - Pasteur Hall	1 University Ave	1910
LOW.4038	Building	ST	Lowell Textile Institute - Engineering Building	University of Massachusetts Lowell - Engineering	197 Riverside St	1952
LOW.4006	Building	ST	Lowell Textile Institute - Smith Hall	University of Massachusetts Lowell - Smith Hall	15 Standish Ave	1948
LOW.3783	Building	ST	N/A	N/A	107 University Ave	1907
LOW.3693	Building	ST	Delisle, Xavier A. House	N/A	30 Plymouth St	1930
LOW.3244	Building	ST	N/A	N/A	22 Colonial Ave	N/A
LOW.3707	Building	ST	Dozois, H. Apartment House	N/A	182 Riverside St	1903

MHC ID	Type	Designation*	Historic Name	Common Name	Address	Constructed
LOW.3598	Building	ST	Barker, Edgar A. House	N/A	9 Mount Hope St	1912
LOW.3599	Building	ST	Poirier, Ovila House	N/A	15 Mount Hope St	1922
LOW.1731	Building	NR	Delaney House	N/A	82 Colonial Ave	1920
LOW.1730	Building	NR	O'Plahavan, M House	N/A	62 Colonial Ave	1906
LOW.3738	Building	ST	N/A	N/A	28 Sarah Ave	1909
LOW.4001	Building	ST	Lowell Textile Institute - Kitson Hall	University of Massachusetts Lowell - Kitson Hall	21 University Ave	1902
LOW.3696	Building	ST	Safford, Arthur House	N/A	101 Riverside St	1904
LOW.3692	Building	ST	Gearin, Henry House	N/A	16 Plymouth St	1924
LOW.3248	Building	ST	N/A	N/A	92 Colonial Ave	N/A
LOW.4037	Building	ST	Lowell Textile Institute - Ball Hall	University of Massachusetts Lowell - Ball Hall	185 Riverside St	1958
LOW.4039	Building	ST	Lowell Textile Institute - North Power Plant	University of Massachusetts Lowell - Power Plant	203 Riverside St	1913
LOW.3781	Building	ST	Desrosiers, Fred Three Decker	N/A	103 University Ave	1915
LOW.3739	Building	ST	N/A	N/A	31 Sarah Ave	1920
LOW.3462	Building	ST	N/A	N/A	85 Gershom Ave	N/A
LOW.1732	Building	NR	Desrosiers, C. B. House	N/A	92 Colonial Ave	1920
LOW.3461	Building	ST	N/A	N/A	81 Gershom Ave	1940
LOW.4002	Building	ST	Lowell Textile Institute - Falmouth Hall	University of Massachusetts Lowell - Falmouth Hall	201 Riverside St	1902
LOW.4004	Building	ST	Lowell Textile Institute - Cumnock Hall	University of Massachusetts Lowell - Cumnock Hall	31 University Ave	1953
LOW.4008	Building	ST	Lowell Textile Institute - Eames Hall	University of Massachusetts Lowell - Eames Hall	35 Standish St	1948

MHC ID	Type	Designation*	Historic Name	Common Name	Address	Constructed
LOW.3736	Building	ST	N/A	N/A	24 Sarah Ave	1909
LOW.9018	Structure	NR	Northern Canal - Little Canada Reach	N/A	Northern Canal	1846
LOW.1971	Building	NR	Barker, E. H. House	Delta Kappa Phi Fraternity House	9 Mount Hope St	1915
LOW.1978	Building	NR	Deziel, O. Building	N/A	199 Pawtucket St	1910
LOW.4007	Building	ST	Lowell Textile Institute - Lyndon Library	University of Massachusetts Lowell - Lyndon Lib.	25 Standish Ave	1968
LOW.3600	Building	ST	Saint Hilaire, Anne House	N/A	19 Mount Hope St	1922
LOW.1728	Building	NR	Lamontagne House	N/A	22 Colonial Ave	1910
LOW.3702	Building	ST	Worden, Jane House	N/A	137 Riverside St	1912
LOW.797	Building	ST	Lowell Textile Institute - Southwick Hall	University of Massachusetts Lowell - Southwick Hal	11 University Ave	1901
LOW.1977	Building	NR	Deziel, O. Building	N/A	193 Pawtucket St	1910
LOW.3691	Building	ST	Achin, Henry Jr. House	N/A	10 Plymouth St	1916
LOW.324	Building	ST	Roy, J. H. House	N/A	730-732 Merrimack St	1890
LOW.1592	Building	NR	Tremont and Suffolk Company - Mill #8	Wannalancit Textile Company - Lowell Museum	562 Suffolk St	1880
LOW.9090	Object	ST	Garin, Father Andre Statue	N/A	Merrimack St	1896
LOW.1597	Building	NR	Tremont Mills - Mill #2	N/A	Tremont St	1862
LOW.1981	Building	NR	N/A	Medical Building	241 Pawtucket St	1970
LOW.276	Building	NR	Saint George Antiochian Orthodox Church	French Congregational Church	61 Bowers St	1881
LOW.1591	Building	NR	Tremont and Suffolk Company - Mill #6	Wannalancit Textile Company - Lowell Museum	562 Suffolk St	1865
LOW.1593	Building	NR	Tremont and Suffolk Company - Mill #10	Tremont and Suffolk Company - Mill #10 Annex	201 Cabot St	1900
LOW.1585	Building	NR	Lowell Dress Manufacturing Company	Lawrence Manufacturing Company Storage Yard Site	141 Hall St	1970

MHC ID	Type	Designation*	Historic Name	Common Name	Address	Constructed
LOW.323	Building	ST	Middlesex Company Agent's House	Saint Jean Baptiste Roman Catholic Church Rectory	725 Merrimack St	1835
LOW.988	Structure	NR	Lawrence Canal	N/A	Lawrence Canal	1831
LOW.1151	Building	NR	Tremont Yard	N/A	Hall St	1830
LOW.1595	Building	NR	Suffolk Manufacturing Company - Boiler House #2	N/A	201 Cabot St	1879
LOW.314	Building	ST	Saint Jean Baptiste Roman Catholic Church	Nuestra Senora del Carmen Church	741 Merrimack St	1888
LOW.1562	Building	NR	Lawrence Manufacturing Company Office	N/A	Suffolk St	1877
LOW.1586	Building	NR	Ames Textile Corporation Business Office	Lawrence Manufacturing Company Boarding House Site	270 Suffolk St	1970
LOW.1587	Building	NR	Lawrence Manufacturing Company - Storehouse D	Lawrence Manufacturing Company - Second Millyard	Tremont St	1882
LOW.1588	Building	NR	Suffolk Manufacturing Company - Counting House	Wannalacit Textile Company - Office Building	562 Suffolk St	1831
LOW.1598	Building	NR	Suffolk and Tremont Company - Weave Shed	Merrimack Manufacturing Company - Weave Shed	Tilden St	1910
LOW.1980	Building	NR	Catholic Association Building	Bienvenue	211 Pawtucket St	1900
LOW.9109	Object	NR	Stele for the Merrimack Sculpture	N/A	Suffolk St	1995
LOW.960	Structure	NR	Frechette, Jean Paul Bridge - Blonde Tiger Bridge	Aiken Street Bridge over Northern Canal	Aiken St	1897
LOW.1581	Building	NR	Lawrence Manufacturing Company - Locomotive House	D. J. Second Hand Shop	Perkins St	1900
LOW.1979	Building	NR	Catholic Association Building	N/A	203 Pawtucket St	1910
LOW.304	Building	NR	Saint Joseph's Roman Catholic Church Convent	Saint Joseph's Parochial School for Girls	511 Moody St	1911
LOW.1590	Building	NR	Suffolk Manufacturing Company - Mill #5	Wannalancit Textile Company	562 Suffolk St	1862
LOW.1594	Building	NR	Suffolk Manufacturing Company - Boarding House	Tremont and Suffolk Company - Building #12	199 Cabot St	1831
LOW.979	Structure	NR	Lawrence Dam	Lawrence Canal Waste Dam	Western Canal	1840

MHC ID	Type	Designation*	Historic Name	Common Name	Address	Constructed
LOW.9018	Structure	NR	Northern Canal - Little Canada Reach	N/A	Northern Canal	1846
LOW.1978	Building	NR	Deziel, O. Building	N/A	199 Pawtucket St	1910
LOW.9016	Structure	NR	Lower Western Canal - Lawrence Wasteway	N/A	Western Canal	1830
LOW.1589	Building	NR	Tremont and Suffolk Company - Machine Shop	N/A	572 Suffolk St	1900
LOW.11	Building	NR	Stone House, The - Ayer Home, The	Bachand Hall - Saint Joseph's Hospital Dormitory	267 Pawtucket St	1824
LOW.12	Building	NR	Lawrence Manufacturing Company Agent's House	Lowell Day Nursery	119-121 Hall St	1833
LOW.322	Building	ST	Wheeler, Albert - Converse, Joshua House	N/A	722-724 Merrimack St	1845
LOW.1599	Building	NR	N/A	N/A	98 Hall St	1940
LOW.980	Structure	NR	Hickey Hall Dam and Locks	Hall Street Dam - Tremont Dam	Western Canal	1845
LOW.1571	Building	NR	Lawrence Manufacturing Company - Storehouse #10	Merrimack Warehouse	Perkins St	1868
LOW.1977	Building	NR	Deziel, O. Building	N/A	193 Pawtucket St	1910
LOW.14	Building	NR	Tremont Gate House	N/A	Western Canal	1855
LOW.1573	Building	NR	Lawrence Manufacturing Company - Storehouse #14	Lawrence Manufacturing Company - Cloth Building	Perkins St	1876

* NR = National Register of Historic Places; ST = Massachusetts Historical Commission State Inventory

Attachment F:

Massachusetts Historical Commission Project Notification Form (blank)

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: _____

Location / Address: _____

City / Town: _____

Project Proponent

Name: _____

Address: _____

City/Town/Zip/Telephone: _____

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)

Project Description (narrative):

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

What is the total acreage of the project area?

Woodland	_____ acres	Productive Resources:	
Wetland	_____ acres	Agriculture	_____ acres
Floodplain	_____ acres	Forestry	_____ acres
Open space	_____ acres	Mining/Extraction	_____ acres
Developed	_____ acres	Total Project Acreage	_____ acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area?

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: _____

Address: _____

City/Town/Zip: _____

Telephone: _____

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbodies to which your MS4 discharges. For each waterbody, please report the number of outfalls discharging into it and, if applicable, the segment ID and any impairments.

Massachusetts list of impaired waters: Massachusetts 2014 List of Impaired Waters- http://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf

Waterbody that receives flow from the MS4 and segment ID if applicable	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Merrimack River (MA84A-01)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	Fecal Coliform, Mercury in Fish Tissue
Merrimack River (MA84A-02)	2	☐	☐	☐	☐	☐	☒	☐	☒	☐	Mercury in Fish Tissue
Merrimack River - Lowell Canals (MA84A-29)	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	DDT, Lead, Mercury in Fish Tissue, PCB in Fish Tissue
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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Click to lengthen table

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. In addition, if you are subject to additional requirements due to a downstream nutrient impairment (see Part 2.2.2 of the permit) select the pollutant of concern and indicate applicable waterbody IDs or write "all waterbodies" if applicable. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Fecal Coliform	Merrimack River (MA84A-01)	Adhere to requirements in part III of Appendix H	Environmental Health & Safety
E. Coli	Merrimack River (MA84A-02)	Adhere to requirements in part III of Appendix H	Environmental Health & Safety
Phosphorus	Merrimack River (MA84A-02)	Adhere to requirements in part II of Appendix H	Environmental Health & Safety
Lead	Merrimack River - Lowell Canals (MA84A-29)	Adhere to requirements in part V of Appendix H	Environmental Health & Safety