

Appendix F

Wetland Delineation Report

October 2018

ARLINGTON RESERVOIR
ARLINGTON / LEXINGTON, MA



WETLAND DELINEATION REPORT

ARLINGTON RESERVOIR

ARLINGTON / LEXINGTON, MA

Prepared for
TOWN OF ARLINGTON RECREATION DEPARTMENT

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TABLE OF CONTENTS

Page

1.0	SITE DESCRIPTION.....	1-1
2.0	DELINEATION OF WETLAND RESOURCES.....	2-1
2.1	Site Observations.....	2-1
2.2	Wetland Delineation Methodology	2-1
2.3	Bordering Vegetated Wetlands (BVW)	2-1
2.4	Bank.....	2-1
2.5	Other Protected Areas.....	2-3
3.0	SUMMARY	3-1
4.0	REFERENCES	4-1

APPENDICES

Appendix A.....	Site Photographs
Appendix B.....	Figures
Figure 1.....	Wetlands Field Map
Figure 2.....	USGS Topographic Map
Figure 3.....	Environmental Resources Map
Figure 4.....	FEMA FIRM Map

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1.0 SITE DESCRIPTION

On October 3, 2018, the presence of wetland resources was investigated the area of the bathing beach and one short (50 linear feet) walking path at Arlington Reservoir. The bathing beach is on the eastern edge of that reservoir, with the northern portion of the beach in Lexington and the southern portion in Arlington. The delineated area along the short walking footpath is located along the northern edge of the reservoir, in Arlington.

The reservoir offers both passive and active recreational opportunities for both informal and formal use. It is used by community members and others year-round for walking, jogging, cross-country running and skiing, bird-watching, fishing, non-motorized boating, skating, dog walking and gardening. During the months of June, July and August, the Town operates a gated, chlorinated and filtered sandy bathing beach for resident and non-resident tag holders. The bathing beach area includes a bathhouse, concession stand, pump house with water filtration systems, picnic tables, benches and playground. Beyond the bathing beach area, there is a packed-dirt parking lot, forested area, a habitat garden, a reinforced dam with two outlets for flood mitigation, and a nearly one-mile trail path that encircles the water. Please see Figure 1 (Wetlands Field Map) and Figure 2 (USGS Topographic Map) in Appendix B of this report for the investigation area.

Wetland resource areas, including top of bank of inland waters, were identified and flagged in the field using pink flagging by a Weston & Sampson employee who is trained in the wetland delineation process using the Massachusetts Department of Environmental Protection (MassDEP) and the US Army Corps of Engineers methodology. A further description of these wetland resource areas is presented, below.

2.0 DELINEATION OF WETLAND RESOURCES

2.1 Site Observations

The Weston & Sampson wetland scientist observed the following protected wetland resources at the site:

- Top of bank of inland waters

See Appendix A for site photographs.

According to the site's FEMA Flood Insurance Rate map (FIRM) indicates that there is a 100-year flood zone in the area at EL 160. See Appendix B for FIRM map.

2.2 Wetland Delineation Methodology

Wetland delineation assessment was conducted in accordance to the Massachusetts Wetland Protection Act Regulations (310 CMR 10.55(2)(c)), Massachusetts Department of Environmental Protection (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Protection Act (March 1995), and ACOE Wetland Manual (Technical Report Y-87-1).

The methodology included the characterization of vegetation, soil any hydrologic conditions in both wetland and upland areas to identify the transitional area, which was used as the BVW limit. Pink flags with distinct flag numbers were left in the field to show wetland resource area limits.

2.3 Bordering Vegetated Wetlands (BVW)

No bordering vegetated wetlands were notes in the investigation area on the day of the investigation.

2.4 Bank

Inland Waters Bank

There were three different top of bank resource areas associated with Arlington Reservoir that were identified in the investigation area, including the inner bank along the berm that contains the bathing beach water, the outer bank along the berm that creates the bathing beach, and the section of bank

along the northern part of the reservoir. These three resource areas are described in further detail, below.

Inner Bank – Bathing Beach

The south, west, and north bank of the inner bank of the berm that contains water in the bathing beach area is lined with flat rock set in concrete (see photographs in Appendix A). Above the flat rock is soil and vegetation. The top of bank was determined based on the undercutting of the soil just above the flat rock.

The eastern shore is a manmade area consisting of a sandy beach which has a gentle slope as it transitions from the upland down into the water. On the day of the investigation, that was approximately 3 – 4 feet below normal pool elevations. The top of bank on the beach area was determined based on the limit of vegetation on both the northern and southern ends of the eastern bank. This vegetation was a manicured grass area that extends upgradient into the upland area. The downgradient most point of this vegetation was considered the top of bank. See Appendix A for photographs of this area/bank limit.

Wetland flags were left on the southern, western and northern banks, including flags TOB-A1 through TOB-A15. While flags were not left on the eastern bank (the beach), a high accuracy GPS unit was used to record points at the top of bank at the beach. These points were labeled TOB-A16 through TOB-A22. See Appendix B, Figure 1 for a map of wetland flag locations.

Outer Bank – Bathing Beach

The outer bank of the berm that creates the bathing beach area was considered a bank which contains the Arlington Reservoir and consists of soil and vegetation. As noted above, water levels were approximately 3 – 4 feet below normal elevations. The top of bank was determined using the undercut area of the bank. Wetland flags TOB-B1 through TOB-B23 were left in the field to show the top of the outer berm bank.

Northern Bank of Reservoir

A small (approximately 50 linear feet) project will be proposed to improve a walking path, improve soil erosion conditions and conduct invasive species management. Because the walking path is near the bank of the reservoir, approximately 120 feet of the top of bank was delineated. The top of bank was determined using the undercut area of the bank. Wetland flags TOB-C1 through TOB-C5 were left in the field to show the top of the bank.

2.5 Other Protected Areas

Besides what was noted above, Weston & Sampson created an environmental receptors map of the site to determine the presence of other protected areas (Appendix B, Figure 3). The data source of these map layers was the Massachusetts Geographic Information System (MassGIS). These areas included:

- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Certified and Estimated Vernal Pools
- Areas of Critical Environmental Concern

None of the above mentioned resource areas were located in the inspections area.

Additionally, a FEMA Flood Insurance Rate Map (FIRM) was created online from the FEMA website to determine if there is a 100-year flood zone at the site. See Appendix B for FIRM map. As shown on the map, there is a 100-year flood zone in the investigation area.

3.0 SUMMARY

On October 3, 2018, the presence of wetland resources was investigated at Arlington Reservoir in both Arlington and Lexington, Massachusetts. Wetland resource areas including top of bank were identified and flagged in the field. Additional MassGIS and FEMA FIRM mapping indicated that the only other environmental resources mapped for the area that was present at the site was the 100-year flood zone.

4.0 REFERENCES

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APPENDIX A

Site Photographs



Photograph 1. Inner bank of berm, southern edge, looking back towards bathing beach.



Photograph #2. Inner bank of berm, western and northern edge, looking north.



Photograph #3. Eastern bank of bathing beach based on downgradient most limit of vegetation.



Photograph #4. Outer bank of berm. Note low water elevation.



Photograph #5. Walking path project area. Reservoir and bank to the left of path.

APPENDIX B

Figures

FIGURE 1

Wetlands Field Map

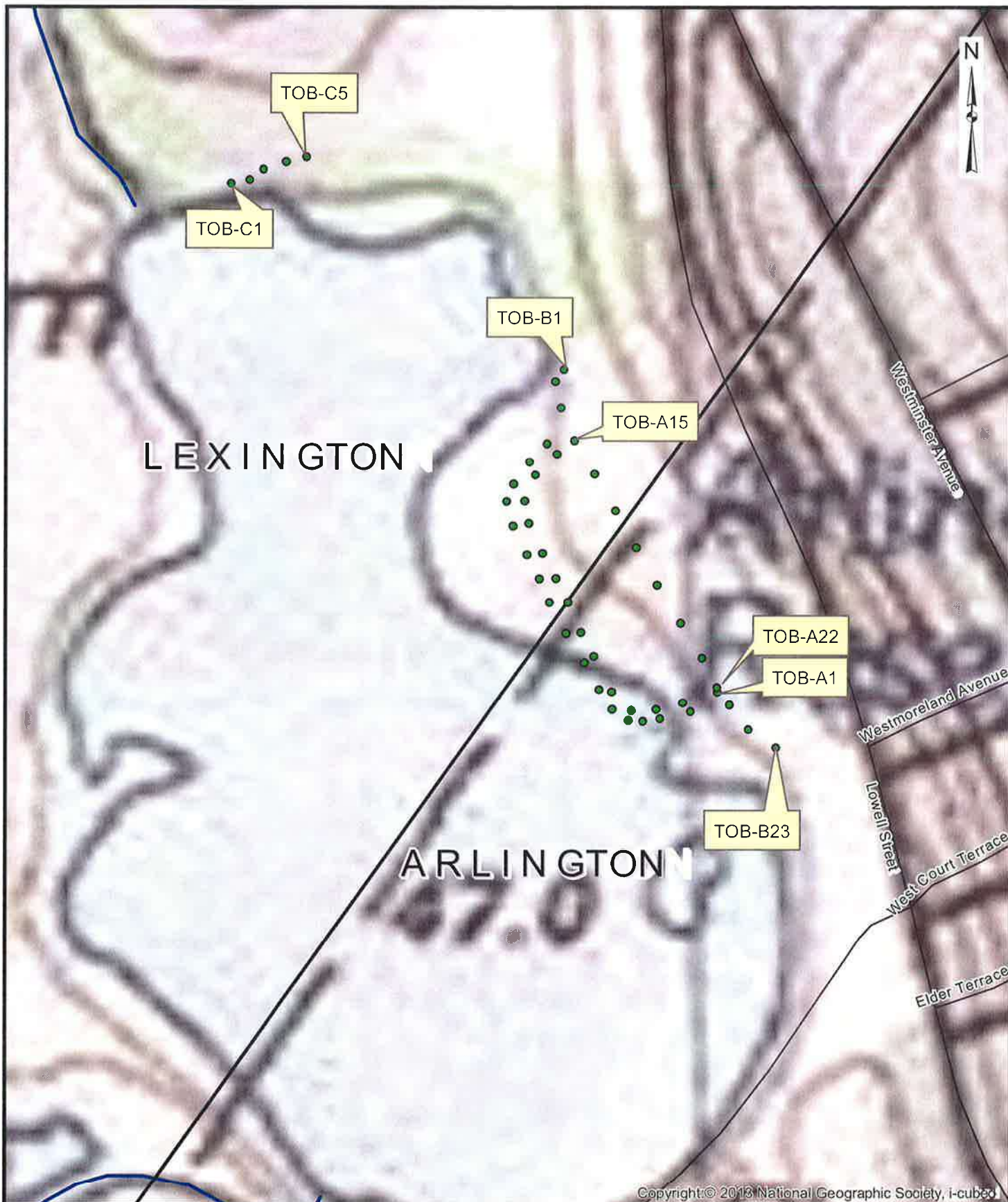


FIGURE 1
Arlington Reservoir
Arlington/Lexington, Massachusetts
WETLANDS FIELD MAP

200 0 200
Scale In Feet

Wetland Flags
MA Towns

FIGURE 2

USGS Topographic Map

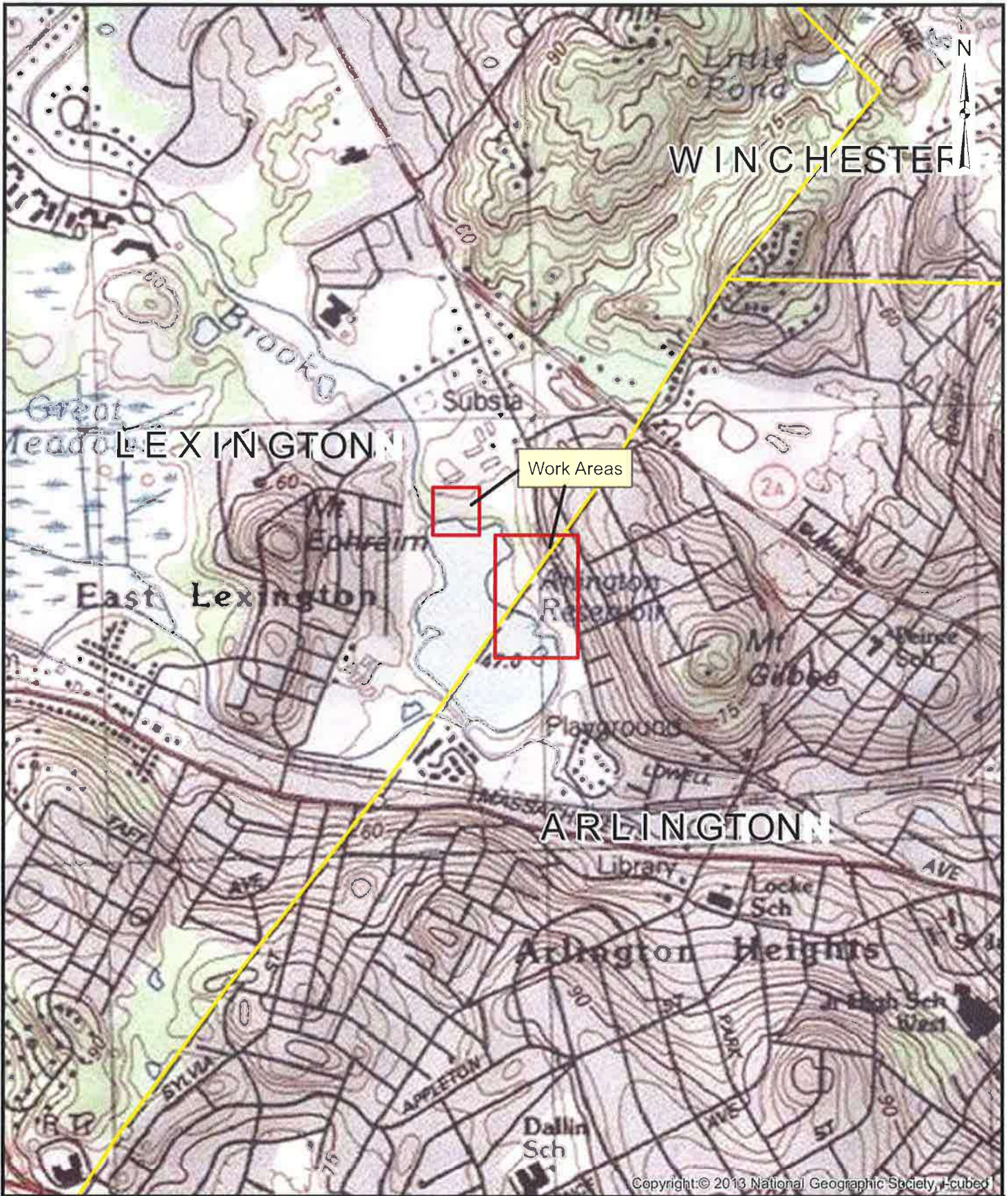


FIGURE 2
Arlington Reservoir
Arlington/Lexington, Massachusetts
LOCUS MAP

1,000 0 1,000
Scale In Feet

FIGURE 3

Environmental Resources Map

Path: I:\wse03\local\WSE\Projects\MA\Arlington, MA\Arlington Reservoir Master Plan Phase 1\GIS\mapserver resources.mxd User: higgishm Saved: 10/9/2018 9:27:31 AM Opened: 10/9/2018 9:27:46 AM

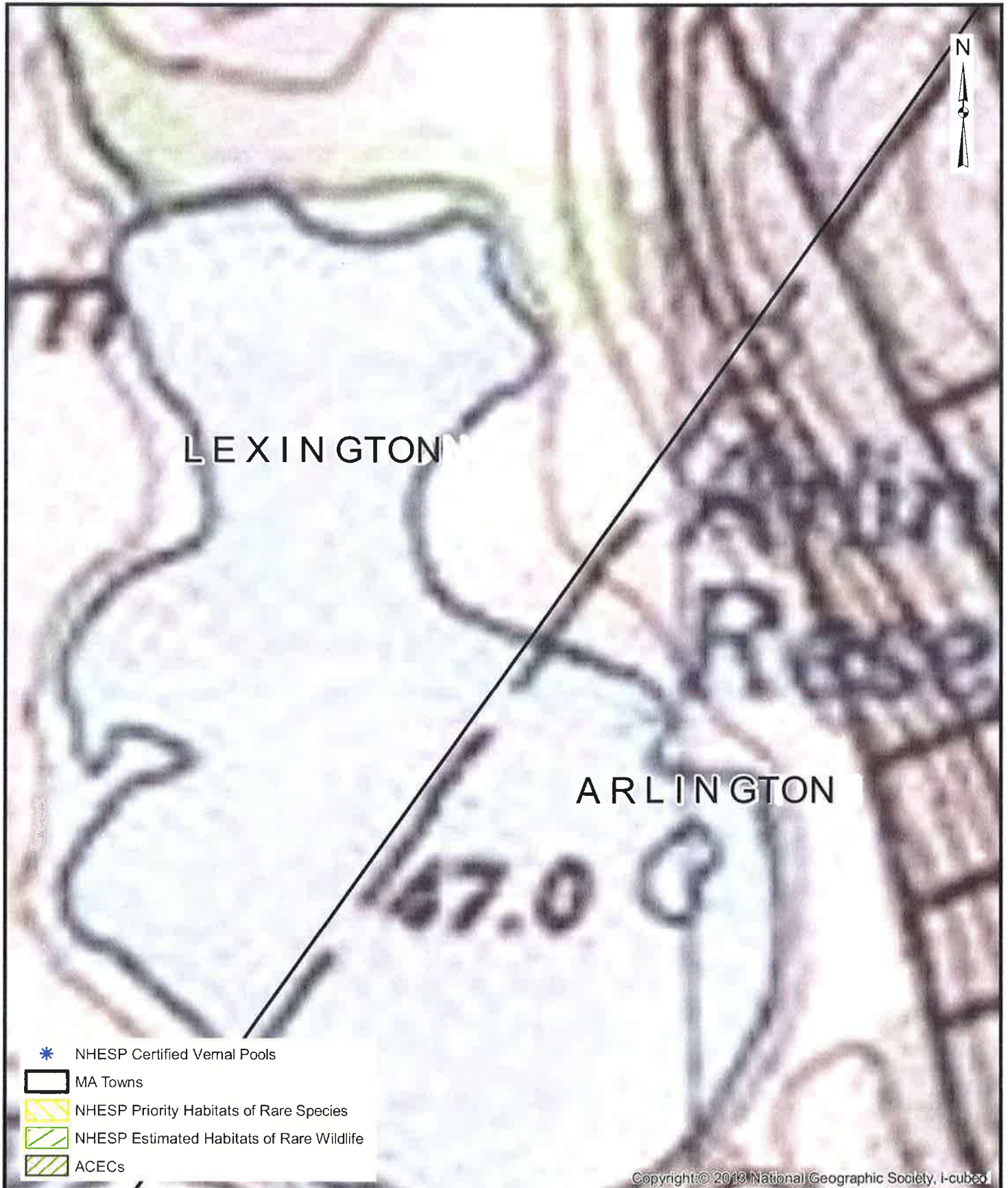


FIGURE 3
Arlington Reservoir
Arlington/Lexington, Massachusetts
ENVIRONMENTAL RESOURCES



FIGURE 4
FEMA FIRM Map

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/8/2018 at 5:11:19 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

