



Site Evaluation & Wetland Delineation

**Lots 1, 2, & 3 Spring Street
Franklin, Massachusetts**

July 28, 2023

Prepared by

Applied Ecological Sciences

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Table of Contents

Introduction	1.
General Site Description	1.
Forested Upland Description	1.
Soils	1.
Wetland Delineation Methodology	2.
Wetland Resource Description	2.
Bordering Vegetated Wetland (BVW)	2.
Inland Bank	2
FEMA Flood Zone Designation	2.
NHESP Estimated & Priority Habitat	2.
Water Supply Protection Areas	2.
Buffer Zone to BVW	3.
References	5.
Appendix A: MA DEP BVW Field Delineation Forms	6.
Appendix B: U.S.G.S. Map, FEMA Map,	7.

**Site Evaluation and Wetland Delineation
Lots 1, 2, & 3, Spring Street
Franklin, Massachusetts**

Introduction

A site evaluation was conducted at the above referenced property on June 28, 2023. The upland/wetland boundary to Bordering Vegetated Wetland (BVW) was delineated in the field with red flagging tape. Resulting data describing the floristic, edaphic, and topographic characteristics of the property has been utilized in the preparation of this *Site Evaluation Report*. The following narrative provides a general site description, resource area delineation methodology, and wetland resource descriptions.

General Site Description

The subject property encompasses undeveloped land located westerly of Spring Street in Franklin, Massachusetts. Topography of the site is generally flat. A gravel parking area occupies the southeastern corner of the property. The remainder of the site is forested. A solar farm abuts the site to the west. Forested land lies to the north, south, and east.

Forested Upland Description

A moderately dense canopy of Northern Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Eastern White Pine (*Pinus strobus*), Red Maple (*Acer rubrum*), Sassafras (*Sassafras albidum*), Shagbark Hickory (*Carya ovata*), and Black Gum (*Nyssa sylvatica*) dominates vegetation in the forested upland. The woody understory is comprised of saplings from the canopy, Witch-Hazel (*Hamamelis virginiana*), Sweet Pepperbush (*Clethra alnifolia*), Black Huckleberry (*Gaylussacia baccata*), Poison Ivy (*Toxicodendron radicans*), Common Greenbrier (*Smilax rotundifolia*), and Early Lowbush Blueberry (*Vaccinium angustifolium*). Ground cover species include seedlings from the canopy and understory, Tree Clubmoss (*Lycopodium obscurum*), Canada Mayflower (*Maianthemum canadense*), Cinnamon Fern (*Osmunda cinnamomea*), Star Flower (*Trientalis borealis*), Hay-Scented Fern (*Dennstaedtia punctilobula*), Sessile-leaved Bellwort (*Uvularia sessilifolia*), and Pennsylvania Sedge (*Carex pensylvanica*).

Soils

Soils underlying the site consist of well-drained, extremely stony Montauk (302B) fine sandy loam, 0% to 8% slopes, well-drained Montauk (MoB, 300B) fine sandy loam, 3% to 8% slopes, and poorly drained, extremely stony Ridgebury (RgB, 71B) fine sandy loam, 3% to 8% slopes (USDA SCS 1989, Map #36).

Wetland Delineation Methodology

The extent of vegetated wetland was determined through observations of the existing plant communities while verifying wetland hydrology through interpretation of soil characteristics and other indications of surface hydrology. Soils were analyzed for texture and color to determine soil morphology in accordance with the most up to date standards. Evidence of surface hydrology was determined through visual inspection of existing site conditions, including typical indicators such as water marks, drift-lines, water-stained leaves, sediment deposits, and drainage patterns.

Wetland Resource Description

Wetland resources associated with the site include Bordering Vegetated Wetland (BVW) Seasonally saturated to seasonally flooded Forest Swamp is located within or adjacent to the western portion of the site. Topography within the BVW is generally flat with distinct pit and mound micro-topography and leaf staining evident throughout. A moderately dense canopy of Red Maple and Black Gum dominates vegetation within the wetland. The woody understory is comprised of saplings from the canopy, Sweet Pepperbush, Highbush Blueberry, Winterberry (*Ilex verticillata*), Poison Ivy, and Common Greenbrier. Ground cover species include seedlings from the canopy and understory, Cinnamon Fern, Sensitive Fern (*Onoclea sensibilis*), Royal Fern (*Osmunda regalis*), Skunk Cabbage (*Symplocarpus foetidus*), and Sphagnum Moss (*Sphagnum* sp.).

The upland/wetland boundary to BVW located on or adjacent to the site is delineated in the field with AES flagging stations #1 through #40.

FEMA Floodplain Designation

Based on the *Federal Emergency Management Agency Flood Insurance Rate Map* for the Town of Franklin, Massachusetts, (Map No. 25021C0304E), the site is located within Zone X (non-shaded), *Areas determined to be outside the 0.2% annual chance floodplain.*

NHESP Estimated & Priority Habitat

According to the *Massachusetts Natural Heritage and Endangered Species Program* habitat map, the site is not located within an Estimated Habitat of Rare Wildlife or a Priority Habitat of Rare Species.

Water Supply Protection Areas

According to the Massachusetts Geographic Information Systems (MA GIS) *Water Supply Protection Areas Map*, the site is not located within a Zone II groundwater recharge area or an Interim Wellhead Protection Area (IWPA).

Buffer Zone to BVW

Buffer Zone, as defined at 310 CMR 10.04, means:

The area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a).

Under Section XVI of the Town of Franklin *Conservation Rules and Regulations*, **Buffer Zone Protections**:

Currently as established by precedent, the Franklin Conservation Commission (Commission) has instituted a 25-Foot no disturb buffer zone from the defined/delineated resource area.

Under Section XVI A: **0 to 25-Foot Buffer Zone Resource Area**:

1. *An applicant shall demonstrate that no work/disturbance including grading activities is proposed within the 25-foot buffer zone resource area.*

Under Section XVI B: **25 to 50-Foot Buffer Zone Resource Area**:

1. *Any applicant proposing a project within the 25 to 50-foot buffer zone resource area shall indicate that there are no structures including, but not limited to, concrete, stone, or other impervious foundations and/or slabs for construction purposes that for all intents and purposes would significantly increase runoff. Alteration within the 25 to 50-foot buffer zone resource area is limited to grading, tree clearing, storm water management components, lawns, gardens, and other low impact uses as determined by the Commission or as otherwise approved by the Commission by the variance procedures set forth under Section XVII of these regulations.*
2. *Areas disturbed prior to June 29, 2006: When there is a pre-existing disturbance (disturbed as part of a previously record Certificate of Compliance or was disturbed prior to the enactment of the Wetlands Protection Act and the Franklin Wetlands Protection Bylaw), and the work proposed is entirely within the previously disturbed area, the applicant may propose impervious surfaces such as pools, buildings, porches, and sheds within the 25 to 50-foot buffer zone resource area. The Commission shall evaluate the proposed uses based upon the demonstration by the applicant that the functions and characteristics of the resource area will not be adversely affected.*

Under Section XVI C: **50 to 100-Foot Buffer Zone Resource Area**:

Alterations including structures are allowed in the 50-100-foot buffer zone resource area. The Commission may require additional mitigation offsets when the slope within the buffer zone is steeper than 10%. Additionally, mitigation offsets may be required by the Commission when the applicant proposes that more than 30% of the 50-100-foot buffer zone resource area is proposed to be

impervious surface. Mitigation offsets may include, but is not limited to, plantings, conversion of impervious to pervious surfaces, and other practices consistent with the Town of Franklin Best Development Practice Handbook.

The westerly portions of the property are contained within the regulatory Buffer Zones.

References

Federal Emergency Management Agency, FEMA Map Service Center, www.fema.gov.

Massachusetts Geographic Information Systems, www.massgis.ma.state.us.

Natural Resources Conservation Service, www.nesoil.com, websoilsurvey.nrcs.usda.gov.

United States Department of Agriculture, Soil Conservation Service, 1989. *Soil Survey of Norfolk and Suffolk Counties, Massachusetts*.

Appendix A
DEP Bordering Vegetated Wetland (310 CMR 10.55)
Delineation Field Data Forms

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant:

Prepared by: Applied Ecological Sciences (AES)

Project location:

Lots 1, 2, 3 Spring St DEP File #: Franklin, MA

Check all that apply:

☐

Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒

Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐

Method other than dominance test used (attach additional information)

DP-1 @ AES #11

Section I. Vegetation Observation Plot Number: DP-1 UPL Transect Number: 1 Date of Delineation: 6/28/2023

A. Sample Layer and Plant Species
(by common/scientific name)

D. Dominant Plant
(yes or no)

E. Wetland
Indicator
Category

Trees

Red Maple (*Acer rubrum*)

Eastern White Pine (*Pinus strobus*)

Black Gum (*Nyssa sylvatica*)

B. Percent Cover
(or dominance ratio)

C. Percent
Dominance

yes

yes

yes

FAC*

FACU

FAC*

TOTAL COVER = 164.0

Woody Vines:

Absent

TOTAL COVER = 0.0

Saplings

Absent

TOTAL COVER = 0.0

Shrubs

Sweet Pepperbush (*Clethra alnifolia*)

Highbush Blueberry (*Vaccinium corymbosum*)

Witch-Hazel (*Hamamelis virginiana*)

63.0

10.5

38.0

57%

9%

34%

yes

no

yes

FAC+*

FACW+*

FAC-

TOTAL COVER = 111.5

Ground Cover

Cinnamon Fern (*Osmunda cinnamomea*)

Tree Clubmoss (*Lycopodium obscurum*)

Sweet Pepperbush (*Clethra alnifolia*)

63.0

20.5

63.0

43%

14%

43%

yes

no

yes

FACW*

FACU

FAC+*

TOTAL COVER = 146.5

Vegetation conclusion:

Number of dominant wetland indicator plants: **6**

Number of dominant non-wetland indicator plants: **3**

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? **Yes**

Section II. Indicators of Hydrology

Hydric Soil Interpretation

DP-2 WET

1. Soil Survey (www.nesoil.com)

Is there a published soil survey for this site? Yes

title/date: Soil Survey of Norfolk & Suffolk Counties, Massachusetts, 1989.

map number: 36

soil type mapped: Ridgebury (RgB, 71B), PD, fsl, 3% to 8% slopes, extremely stony.

hydric soil inclusions: Whitman

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth	Matrix color	Redoximorphic features
A	0"- 12"	10YR 2/1 fsl	
Bw1	12"- 18"	2.5Y 7/2 sl	10YR 5/6 m/2/d (>20%)

Remarks:

3. Other: Cloudy, damp

Conclusion: Is soil hydric? Yes

Other indicators of Hydrology: (check all that apply)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☒ Depth to soil saturation in observation hole: **Surface**
- ☐ Water marks:
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other)
- ☐ Other:

Vegetation and Hydrology Conclusion:

Number of wetland indicator plants greater than or equal to non-wetland indicator plants?

yes ☒ no ☐

Wetland hydrology present?

hydric soil present? ☒

other indicators of hydrology present? ☒

Sample location is in a BVW

☒ ☐

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant:

Prepared by: Applied Ecological Sciences (AES)

Project location:

Lots 1, 2, 3 Spring St DEP File #: Franklin, MA

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

DP-2 @ AES #11

Section I. Vegetation	Observation Plot Number:	DP-2 WET	Transect Number:	1	Date of Delineation:	6/28/2023
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A. Sample Layer and Plant Species (by common/scientific name)	B. Percent Cover (or dominance ratio)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category
Trees				
Red Maple (<i>Acer rubrum</i>)	63.0	45%	yes	FAC*
Eastern White Pine (<i>Pinus strobus</i>)	38.0	27%	yes	FACU
Black Gum (<i>Nyssa sylvatica</i>)	38.0	27%	yes	FAC*

TOTAL COVER = 139.0

Woody Vines:

Absent

TOTAL COVER = 0.0

Saplings

Absent

TOTAL COVER = 0.0

Shrubs

Sweet Pepperbush (*Clethra alnifolia*)

Black Gum (*Nyssa sylvatica*)

63.0

50%

yes

FAC+*

63.0

50%

yes

FAC+*

TOTAL COVER = 126.0

Ground Cover

Cinnamon Fern (*Osmunda cinnamomea*)

Sweet Pepperbush (*Clethra alnifolia*)

63.0

50%

yes

FACW*

63.0

50%

yes

FAC+*

TOTAL COVER = 126.0

Vegetation conclusion:

Number of dominant wetland indicator plants: 6

Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes

Section II. Indicators of Hydrology
Hydric Soil Interpretation
DP-2 WET

Other indicators of Hydrology: (check all that apply)

☐ Site inundated:

1. Soil Survey (www.nesoil.com)

Is there a published soil survey for this site? Yes

title/date: Soil Survey of Norfolk & Suffolk Counties, Massachusetts, 1989.

map number: 36

soil type mapped: Ridgebury (RgB, 71B), PD, fsl, 3% to 8% slopes, extremely stony.

hydric soil inclusions: Whitman

Are field observations consistent with soil survey? Yes

Remarks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other)

2. Soil Description

Horizon	Depth	Matrix color	Redoximorphic features
A	0"- 12"	10YR 2/1 fsl	
Bw1	12"- 18"	2.5Y 7/2 sl	10YR 5/6 m/2/d (>20%)

☐ Other:

Remarks:

3. Other: Cloudy, damp

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion:

Number of wetland indicator plants
greater than or equal to non-wetland
indicator plants?

yes no

☒ ☐

Wetland hydrology present?

hydric soil present?

other indicators of hydrology present?

☒ ☐

☒ ☐

Sample location is in a BVW

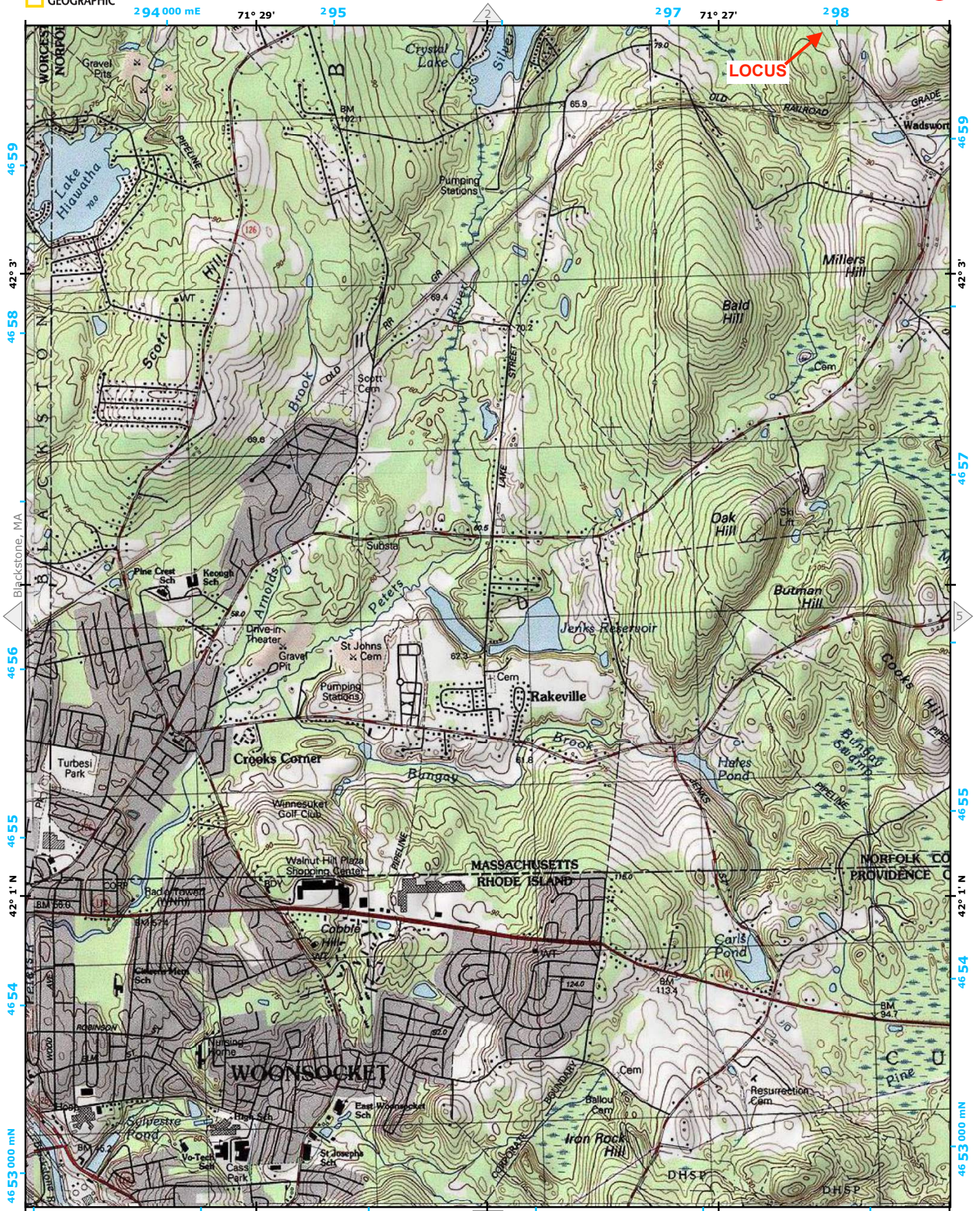
☒ ☐

Appendix B

U.S.G.S. Topographic Map

FEMA Map

N.H.E.S.P. Habitat Map



National Flood Hazard Layer FIRMette



71°26'55"W 42°4'N

Legend

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

Without Base Flood Elevation (BFE)
Zone A, V, AE

With BFE or Depth
Zone AE, AO, AH, VE, AR

Regulatory Floodway

SPECIAL FLOOD HAZARD AREAS

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Zone X

Future Conditions 1% Annual Chance Flood Hazard
Zone X

Area with Reduced Flood Risk due to Levee. See Notes.
Zone X

Area with Flood Risk due to Levee
Zone D

OTHER AREAS OF FLOOD HAZARD

NO SCREEN

Area of Minimal Flood Hazard
Zone X

Effective LOMRs

Area of Undetermined Flood Hazard
Zone D

OTHER AREAS

GENERAL STRUCTURES

Channel, Culvert, or Storm Sewer

Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation

Coastal Transect

Base Flood Elevation Line (BFE)

Limit of Study

Jurisdiction Boundary

Coastal Transect Baseline

Profile Baseline

Hydrographic Feature

OTHER FEATURES

Digital Data Available

No Digital Data Available

Unmapped

MAP PANELS

N

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 **6/13/2023 at 9:30 AM** 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.

0 250 500 1,000 1,500 2,000 1:6,000 Feet

Basemap Imagery Source: USGS National Map 2023