



Appendix B
Wetland Information

Wetland Border Report

Site Locus: 100 Populatic Street, Franklin MA

Prepared for: Richard and Alicia Karas

Prepared by: Goddard Consulting LLC, 291 Main St, Suite 8, Northborough MA 01532

Date: 7/10/2023

INTRODUCTION

On July 7, 2023, wetland resources were delineated for Richard and Alicia Karas on land located on or near 100 Populatic Street, Franklin MA (refer to enclosed locus maps). The wetland border was flagged using the criteria in the most recent edition of MA Wetland Protection Act (WPA) and Regulations 310 CMR 10.00 et al. Hydric soil indicators, vegetation changes, hydrological indicators, and topography were all considered for delineation purposes.

The titles of attached documents are as follows:

- DEP Bordering Vegetated Wetland Determination Forms
- Orthophoto of Locus Site, Goddard Consulting LLC, 7/7/2023
- Orthophoto with NRCS Soils, Goddard Consulting LLC, 7/7/2023
- Orthophoto with FEMA Flood Zones, Goddard Consulting LLC, 7/7/2023
- Orthophoto with DEP Mapped Wetlands, Goddard Consulting LLC, 7/7/2023
- USGS of Site, Goddard Consulting LLC, 7/7/2023
- Delineation Sketch, Goddard Consulting LLC, 7/7/2023

SUMMARY OF FINDINGS

The boundary of the Bordering Vegetated Wetland (BVW) associated with Populatic Pond was delineated with flag series GCA1-GCA10 and GCB1-GCB5. The sampling point for the BVW determination took place near flag GCA9. Additionally, the boundary of BVW across Populatic Street from the property was flagged with series GCC1-10.

Vegetation upgradient of the BVW is dominated by black cherry, red oak, sweet pepperbush, sassafras, and Asiatic bittersweet. Vegetation downgradient of the BVW consists of red maple, American elm, sweet pepperbush, and royal fern. Invasive species present on the site include Japanese knotweed, Asiatic bittersweet, purple loosestrife, and glossy buckthorn. Aggressive native species present on the site include fox grape, greenbriar and Virginia creeper.

Soils identified on the property consist of sand and sandy loams. In the wetland soil sample, sand (10YR6/1) was found from 0-3" and sandy loam (10YR3/2) was found from 3-4". Sandy loam (10YR6/3) was also found from 4-6", and fine sandy loam (10YR7/2) was found from 6-24". In the upland soil sample, fine sandy loam (10YR3/2) was found from 0-1", fine sandy loam (10YR5/2) was found from 1-14", and fine sandy loam (10YR5/6) was found from 14-24". More detailed information about soils is included in the attached NRCS Soil Map and the DEP Bordering Vegetated Wetland Determination Forms.

According to the MassGIS data layers for the Natural Heritage & Endangered Species Program (NHESP), the locus site is not located within Estimated and/or Priority Habitat of Rare Wildlife or an Area of Critical Environmental Concern (ACEC). There are no mapped certified or potential vernal pools on site. The site is not located in an Outstanding Resource Waters Area (ORW). The site partially falls within a jurisdictional FEMA Flood Zone, Flood Zone AE (1% annual chance of flooding with BFE), which constitutes Bordering Land Subject to Flooding (BLSF).

The MA Wetlands Protection Act and the Town of Franklin take jurisdiction over Bordering Vegetated Wetlands (BVW) and Bordering Land Subject to Flooding (BLSF). The BVW systems on and off-site have a jurisdictional 100-foot Buffer Zone that casts partially onto the locus site, and a 25-foot No Disturb Zone under the Franklin Conservation Commission Regulations. Any work within these resource areas, including the 100-foot Buffer Zones, requires a Request for Determination (RDA) or Notice of Intent (NOI) to be filed with the Franklin Conservation Commission.

DESCRIPTION OF REGULATED INLAND RESOURCE AREA

The table below provides the regulatory jurisdiction, flag numbers/colors, and wetland types and locations for the resource areas delineated.

Resource Area	Regulatory Jurisdiction	Flag Numbers and Color	Wetland Types and Locations
Bordering Vegetated Wetland (BVW)	BVW & 100-foot Buffer Zone (WPA) 25-foot No Disturb Zone (bylaw)	GCA1-GCA10 and GCB1-GCB5 (Blue flags)	The boundary of BVW located at the east of the locus site.
Bordering Vegetated Wetland (BVW)	BVW & 100-foot Buffer Zone (WPA) 25-foot No Disturb Zone (bylaw)	GCC1-GCC10 (Blue flags)	The boundary of BVW located west of the locus site, across Populatic Street.
Bordering Land Subject to Flooding (BLSF)	BLSF (no buffer zone)	Not flagged in field	The boundary of the 100-year floodplain, to be determined by base flood elevation and field survey measurements.

SITE PHOTOS

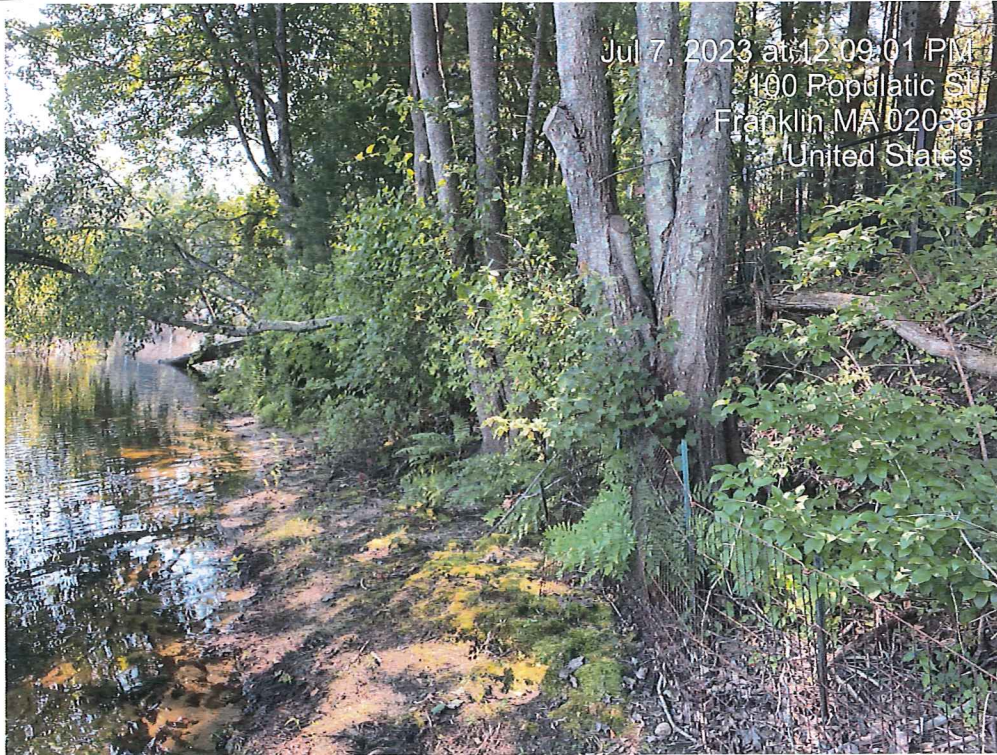


Photo 1. View of BVW at edge of Populatic Pond.



Photo 2. Upland soil sample pulled upgradient of flag GCA9.



Photo 3. Wetland soil sample pulled downgradient of flag GCA9.

Sincerely,
Goddard Consulting, LLC



Chris Frattaroli
Wetland Scientist

BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: 100 Populatic Street City/Town: Franklin Sampling Date: 7/7/23
 Applicant/Owner: Richard and Alicia Karas Sampling Point or Zone: GCA9
 Investigator(s): Chris Frattaroli Latitude/Longitude: 42.12812829320563, -71.3809049858
 Soil Map Unit Name: Hinckley Loamy Sand NWI or DEP Classification: Open Water, Bog

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? (If yes, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If yes, explain in Remarks)

SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc

Wetland vegetation criterion met?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soils criterion met?	Yes _____	No <u>X</u>			
Wetlands hydrology present?	Yes _____	No <u>X</u>			

Remarks, Photo Details, Flagging, etc.:

HYDROLOGY

Field Observations:			
Surface Water Present?	Yes _____	No <u>X</u>	Depth (in) _____
Water Table Present?	Yes _____	No <u>X</u>	Depth (in) _____
Saturation Present (including capillary fringe)?	Yes _____	No <u>X</u>	Depth (in) _____
Wetland Hydrology Indicators			
Reliable Indicators of Wetlands Hydrology	Indicators that can be Reliable with Proper Interpretation	Indicators of the Influence of Water	
<input type="checkbox"/> Water-stained leaves	<input type="checkbox"/> Hydrological records	<input type="checkbox"/> Direct observation of inundation	
<input type="checkbox"/> Evidence of aquatic fauna	<input type="checkbox"/> Free water in a soil test hole	<input type="checkbox"/> Drainage patterns	
<input type="checkbox"/> Iron deposits	<input type="checkbox"/> Saturated soil	<input type="checkbox"/> Drift lines	
<input type="checkbox"/> Algal mats or crusts	<input type="checkbox"/> Water marks	<input type="checkbox"/> Scoured areas	
<input type="checkbox"/> Oxidized rhizospheres/pore linings	<input type="checkbox"/> Moss trim lines	<input type="checkbox"/> Sediment deposits	
<input type="checkbox"/> Thin muck surfaces	<input type="checkbox"/> Presence of reduced iron	<input type="checkbox"/> Surface soil cracks	
<input type="checkbox"/> Plants with air-filled tissue (aerenchyma)	<input type="checkbox"/> Woody plants with adventitious roots	<input type="checkbox"/> Sparsely vegetated concave surface	
<input type="checkbox"/> Plants with polymorphic leaves	<input type="checkbox"/> Trees with shallow root systems	<input type="checkbox"/> Microtopographic relief	
<input type="checkbox"/> Plants with floating leaves	<input type="checkbox"/> Woody plants with enlarged lenticels	<input type="checkbox"/> Geographic position (depression, toe of slope, fringing lowland)	
<input type="checkbox"/> Hydrogen sulfide odor			
Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):			

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size 30'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Red oak	Quercus rubra	FACU	38.0%	X		64.96%
2	Black cherry	Prunus serotina	FACU	20.5%	X		35.04%
3							
4							
5							
6							
7							
8							
9							

58.5% =Total Cover

Shrub/Sapling Stratum Plot size 15'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Sassafras	Sassafras albidum	FACU	20.5%	X		87.23%
2	Sweet pepperbush	Clethra alnifolia	FAC	3.0%		X	12.77%
3							
4							
5							
6							
7							
8							
9							

23.5% =Total Cover

Herb Stratum Plot size 5'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Creeping buttercup	Ranunculus repens	FAC	10.5%	X	X	31.82%
2	Common chickweed	Stellaria media	FACU	10.5%	X		31.82%
3	Oriental bittersweet	Celastrus orbiculatus	FACU	3.0%			9.09%
4	Garden smartweed	Persicaria wallichii	FAC	3.0%		X	9.09%
5	Lily-of-the-valley	Convallaria majalis	UPL	3.0%			9.09%
6	Upright Yellow Wood-Sorrel	Oxalis stricta	FACU	3.0%			9.09%
7							
8							
9							
10							
11							
12							

33.0% =Total Cover

VEGETATION – continued.

<u>Woody Vine Stratum</u>		Plot size <u>30'</u>					
	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Oriental bittersweet	Celastrus orbiculatus	FACU	20.5%	X		46.07%
2	Green brier	Smilax rotundifolia	FAC	10.5%	X	X	23.60%
3	Virginia creeper	Parthenocissus quinquefolia	FACU	10.5%	X		23.60%
4	Fox grape	Vitis labrusca	FACU	3.0%			6.74%
				44.5%	=Total Cover		

<u>Rapid Test:</u>	Do all dominant species have an indicator status of OBL or FACW?		Yes	No	X
<u>Dominance Test:</u>	Number of dominant species	Number of dominant species that are wetland indicator plants	Do wetland indicator plants make up \geq 50% of dominant plant species?		
	8	2	Yes	No	X
<u>Prevalence Index:</u>		Total % Cover (all strata)	Multiply by:	Result	
	OBL species	0%	x1	=	0%
	FACW species	0%	x2	=	0%
	FAC species	27%	x3	=	81%
	FACU species	130%	x4	=	518%
	UPL species	3%	x5	=	15%
	Column Totals (A)	160%		(B)	614%
	Prevalence Index	B/A=	3.85	Is the Prevalence Index \leq 3.0?	
				Yes	No X
<u>Wetland vegetation criterion met?</u>	Yes	No	X		

Definitions of Vegetation Strata

- Tree Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height
- Shrub/Sapling Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall
- Herb All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall
- Woody vines All woody vines greater than 3.3 ft. (1 m) in height

Cover Ranges	
Range	Midpoint
1-5 %	3.00%
6-15 %	10.50%
15-25 %	20.50%
26-50 %	38.00%
51-75 %	63.00%
76-95 %	85.50%
96-100 %	98.00%

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-1	10YR3/2					FSL	
1-14	10YR5/2					FSL	
14-24	10YR5/6					FSL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains ² Location: PL=Pore Lining, M=Matrix							
Hydric Soil Indicators (Check all that apply)				Indicators for Problematic Hydric Soils			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Polyvalue Below Surface (S8)			<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Thin Dark Surface (S9)			<input type="checkbox"/> Polyvalue Below Surface (S8)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Thin Dark Surface (S9)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Mesic Spodic (A17)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Dark Surface (F7)			<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Depleted Dark Surface (F8)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Dark Surface (S7)						<input type="checkbox"/> Other (Include Explanation in Remarks)	
Restrictive Layer (if observed)		Type:	Depth (inches):				
Remarks							
Hydric Soils criterion met? Yes No X							

BORDERING VEGETATED WETLAND DETERMINATION FORM

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 Applicant/Owner: Richard and Alicia Karas Sampling Point or Zone: GCA9
 Investigator(s): Chris Frattaroli Latitude/Longitude: 42.12811436844563, -71.380894257C
 Soil Map Unit Name: Hinckley Loamy Sand NWI or DEP Classification: Open Water, Bog

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? (If yes, explain in Remarks)
 Are Vegetation , Soil , or Hydrology naturally problematic? (If yes, explain in Remarks)

SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc

Wetland vegetation criterion met?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soils criterion met?	Yes <u>X</u>	No <u> </u>			
Wetlands hydrology present?	Yes <u>X</u>	No <u> </u>			

Remarks, Photo Details, Flagging, etc.:

HYDROLOGY

Field Observations:					
Surface Water Present?	Yes	<u>X</u>	No	Depth (in)	<u>0</u>
Water Table Present?	Yes		No	<u>X</u>	Depth (in)
Saturation Present (including capillary fringe)?	Yes	<u>X</u>	No	Depth (in)	<u>0</u>

Wetland Hydrology Indicators		
Reliable Indicators of Wetlands Hydrology	Indicators that can be Reliable with Proper Interpretation	Indicators of the Influence of Water
<u> </u> Water-stained leaves	<u> </u> Hydrological records	<u>X</u> Direct observation of inundation
<u> </u> Evidence of aquatic fauna	<u> </u> Free water in a soil test hole	<u>X</u> Drainage patterns
<u> </u> Iron deposits	<u>X</u> Saturated soil	<u> </u> Drift lines
<u> </u> Algal mats or crusts	<u> </u> Water marks	<u>X</u> Scoured areas
<u> </u> Oxidized rhizospheres/pore linings	<u> </u> Moss trim lines	<u> </u> Sediment deposits
<u> </u> Thin muck surfaces	<u> </u> Presence of reduced iron	<u> </u> Surface soil cracks
<u> </u> Plants with air-filled tissue (aerenchyma)	<u> </u> Woody plants with adventitious roots	<u>X</u> Sparsely vegetated concave surface
<u> </u> Plants with polymorphic leaves	<u> </u> Trees with shallow root systems	<u> </u> Microtopographic relief
<u> </u> Plants with floating leaves	<u> </u> Woody plants with enlarged lenticels	<u>X</u> Geographic position (depression, toe of slope, fringing lowland)
<u> </u> Hydrogen sulfide odor		

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

Sampling Point GCA9

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size 30'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Red maple	<i>Acer rubrum</i>	FAC	20.5%	X	X	66.13%
2	American elm	<i>Ulmus americana</i>	FACW	10.5%	X	X	33.87%
3							
4							
5							
6							
7							
8							
9							

31.0% =Total Cover

Shrub/Sapling Stratum Plot size 15'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Sweet pepperbush	<i>Clethra alnifolia</i>	FAC	10.5%	X	X	100.00%
2							
3							
4							
5							
6							
7							
8							
9							

10.5% =Total Cover

Herb Stratum Plot size 5'

	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Royal fern	<i>Osmunda spectabilis</i>	OBL	38.0%	X	X	71.70%
2	Beggar Ticks	<i>Bidens frondosa</i>	FACW	3.0%		X	5.66%
3	False nettle	<i>Boehmeria cylindrica</i>	OBL	3.0%		X	5.66%
4	Purple loosestrife	<i>Lythrum salicaria</i>	OBL	3.0%		X	5.66%
5	Cardinal-flower	<i>Lobelia cardinalis</i>	OBL	3.0%		X	5.66%
6	Jewelweed	<i>Impatiens capensis</i>	FACW	3.0%		X	5.66%
7							
8							
9							
10							
11							
12							

53.0% =Total Cover

VEGETATION – continued.

Woody Vine Stratum		Plot size <u>30'</u>					
	Common Name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indicator? (yes/no)	% Dominant
1	Fox grape	Vitis labrusca	FACU	10.5%	X		100.00%
2							
3							
4							
				10.5%	=Total Cover		

Rapid Test:		Do all dominant species have an indicator status of OBL or FACW?		Yes	No	X
Dominance Test:	Number of dominant species	Number of dominant species that are wetland indicator plants		Do wetland indicator plants make up $\geq 50\%$ of dominant plant species?		
	5	4		Yes	X	No
Prevalence Index:		Total % Cover (all strata)	Multiply by:	Result		
	OBL species	47%	x1	=	47%	
	FACW species	17%	x2	=	33%	
	FAC species	31%	x3	=	93%	
	FACU species	11%	x4	=	42%	
	UPL species	0%	x5	=	0%	
	Column Totals (A)	105%		(B)	2.15%	
	Prevalence Index	B/A=	2.05	Is the Prevalence Index ≤ 3.0 ?		
				Yes	X	No
Wetland vegetation criterion met? Yes X No						

Definitions of Vegetation Strata

- Tree Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height
- Shrub/Sapling Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall
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- Woody vines All woody vines greater than 3.3 ft. (1 m) in height

Cover Ranges	
Range	Midpoint
1-5 %	3.00%
6-15 %	10.50%
15-25 %	20.50%
26-50 %	38.00%
51-75 %	63.00%
76-95 %	85.50%
96-100 %	98.00%



Legend

 Property Boundary

Date: 7/7/2023

GC Job Number:
101-085

**Wetland Border Report
Orthophoto of Locus Site**

0 30 60
Feet



1 in = 60 ft



100 Populatic Street
Franklin, MA

Map: 216, Lot: 22



Legend

- Property Boundary
- Soils (Polygon Outlines)

Hinckley loamy sand, 15 to 35 percent slopes

Water

Freetown muck, 0 to 1 percent slopes

Date: 7/7/2023

GC Job Number:
101-085

**Wetland Border Report
Orthophoto with NRCS Soils**

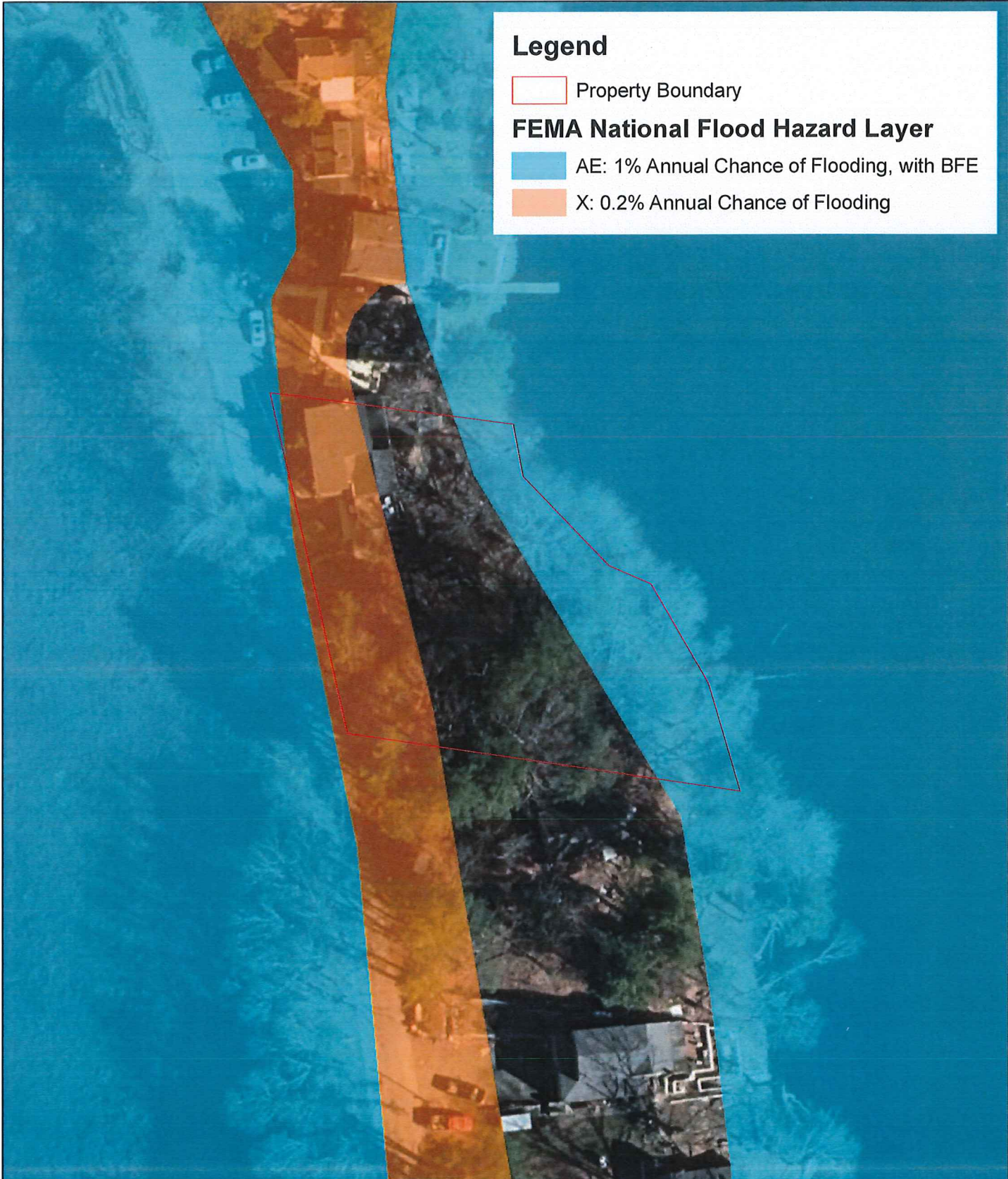


100 Populatic Street
Franklin, MA

1 in = 60 ft

Map: 216, Lot: 22





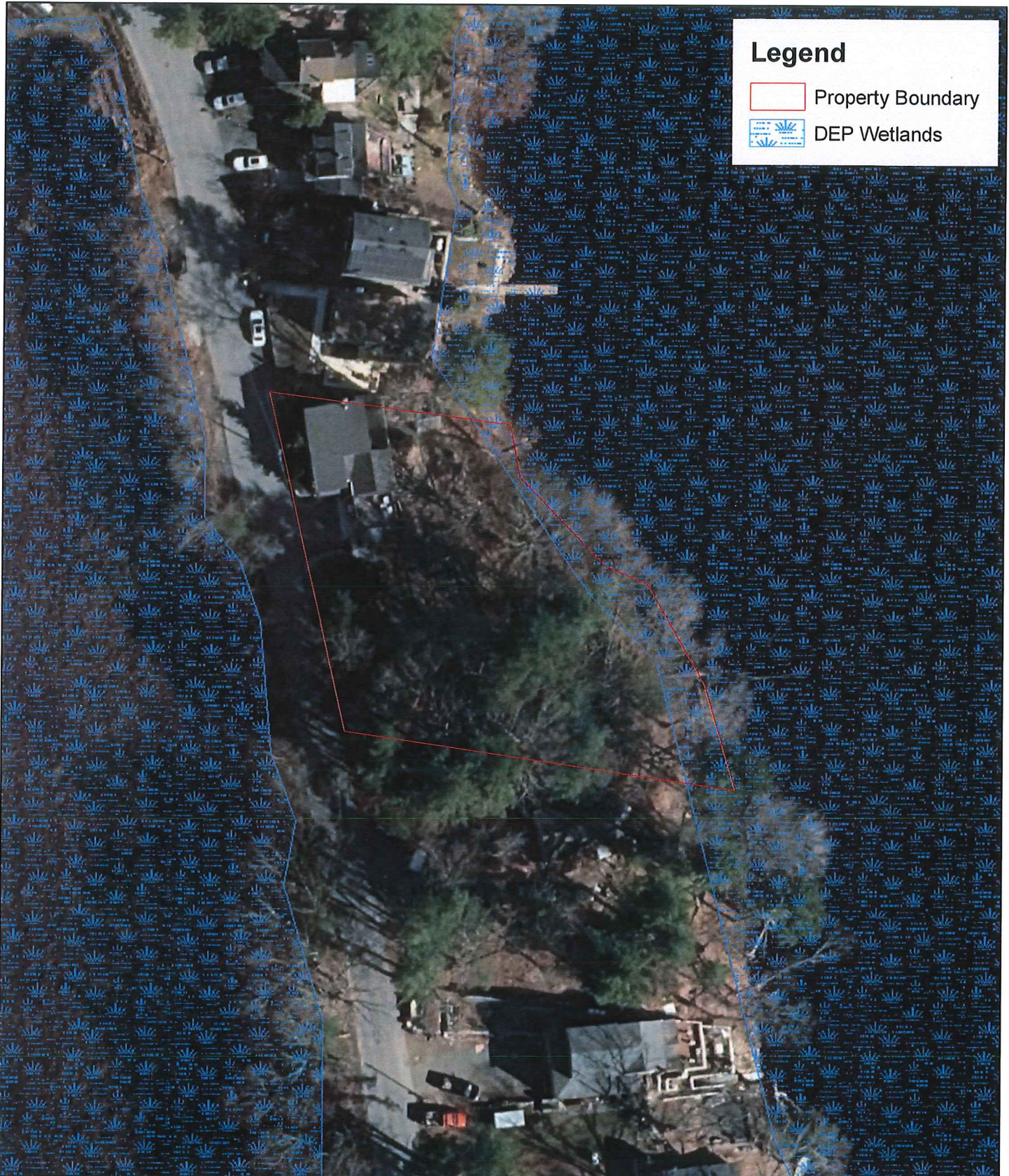
Legend

- Property Boundary



FEMA National Flood Hazard Layer

- AE: 1% Annual Chance of Flooding, with BFE
- X: 0.2% Annual Chance of Flooding

Date: 7/7/2023	GC Job Number: 101-085	Wetland Border Report Orthophoto with FEMA Flood Zones 100 Populatic Street Franklin, MA	0 30 60 Feet
GODDARD CONSULTING Strategic Ecological Consulting		1 in = 60 ft Map: 216, Lot: 22	



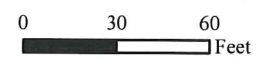
Legend

-  Property Boundary
-  DEP Wetlands

Date: 7/7/2023

GC Job Number:
101-085

Wetland Border Report
Orthophoto with DEP
Mapped Wetlands



100 Populatic Street
Franklin, MA

1 in = 60 ft

Map: 216, Lot: 22





Legend

Property Boundary

Date: 7/7/2023

GC Job Number:
101-085

**Wetland Border Report
USGS of Site**

0 100 200
Feet



1 in = 200 ft



100 Populatic Street
Franklin, MA

Map: 216, Lot: 22

NOTE: This sketch is intended for survey purposes only.
All locations sketched are approximate.

Legend

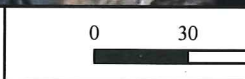
Property Boundary



Date: 7/7/2023

GC Job Number:
101-085

Wetland Border Report Delineation Sketch



100 Populatic Street
Franklin, MA

1 in = 60 ft

Map: 216, Lot: 22



Appendix C

Site Plans & Additional Materials