

FEMA Region 1 Environmental Assessment – DRAFT

**ROXBURY FISH CULTURE STATION,
ROXBURY, WASHINGTON COUNTY, VT**

DR 4022 VT, Public Assistance Grant Program
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U.S. Department of Homeland Security (D.H.S.)
Federal Emergency Management Agency (F.E.M.A.)
Region I, Environmental & Historic Preservation Office (R.1.E.H.P.)
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ROXBURY FISH CULTURE STATION
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Acronyms and Abbreviations

A.C.S.	United States Census American Community Survey
B.F.E.	Base Flood Elevation
B.G.S.	Vermont Department of Buildings and General Services
B.M.P.	Best Management Practice
C.A.A.	Clean Air Act
C.E.Q.	Council on Environmental Quality
C.E.R.C.L.A.	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
C.V.R.P.C.	Central Vermont Regional Planning Commission
C.W.A.	Clean Water Act
D.E.M.H.S.	Vermont Division of Emergency Management and Homeland Security
D.H.P.	Vermont Division for Historic Preservation
E.A.	Environmental Assessment
E.I.S.	Environmental Impact Statement
E.O.	Executive Order
E.S.A.	Endangered Species Act
F.E.M.A.	Federal Emergency Management Agency
F.I.R.M.	Flood Insurance Rate Map
F.O.N.S.I.	Finding of No Significant Impact
G.I.S.	Geographic Information System
N.A.A.Q.S	National Ambient Air Quality Standards
N.E.C.R.	New England Central Railroad
N.E.P.A.	National Environmental Policy Act
N.F.I.P.	National Flood Insurance Program
N.H.P.A.	National Historic Preservation Act
N.P.D.E.S.	National Pollutant Discharge Elimination System
N.P.L.	National Priority List
N.R.A.	Natural Resources Atlas
N.R.C.S.	Natural Resources Conservation Service
P.A.	Public Assistance
P.N.P.	Private Non-Profit
R.C.R.A.	Resource Conservation and Recovery Act
S.M.A.C.	Site Management Activity Completed
U.S.A.C.E.	United States Army Corps of Engineers
U.S.E.P.A.	United States Environmental Protection Agency
U.S.D.A.	United States Department of Agriculture
U.S.F.W.S.	United States Fish and Wildlife Service
U.S.G.S.	United States Geological Survey
U.S.T.	Underground Storage Tank
V.A.N.R.	Vermont Agency of Natural Resources
V.A.Q.C.	Vermont Air Quality and Climate Division
V.D.E.C.	Vermont Department of Environmental Conservation
V.D.F.S.	Vermont Division of Fire Safety
V.D.G.P.D.	Vermont Drinking and Groundwater Protection Division

V.F.W.D. Vermont Fish and Wildlife Department
V.S.W.I. Vermont Significant Wetlands Inventory
V.W.M.D. Vermont Waste Management Division

1.0 INTRODUCTION

As a result of damages caused by Tropical Storm Irene (Irene) between August 27 and September 2, 2011, President Obama declared a major disaster for the State of Vermont under the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1973 (Stafford Act). This major disaster declaration, referenced as FEMA-4022-DR-VT, authorizes the Federal Emergency Management Agency (F.E.M.A.) to provide Public Assistance (P.A.) through the Vermont Division of Emergency Management and Homeland Security (D.E.M.H.S./Grantee) to local governments, state agencies and eligible Private Non-Profit (P.N.P.) organizations in all Vermont counties.

Flooding during Irene severely damaged the Roxbury Fish Culture Station (R.F.C.S.); the oldest fish culture station in the State of Vermont. The State of Vermont Fish and Wildlife Department (V.F.W.D./Sub-Grantee) has applied for assistance under the P.A. Program to rebuild the R.F.C.S. to modern standards of operation and with increased flood resiliency.

This Environmental Assessment (E.A.) has been prepared in accordance with F.E.M.A. Directive 108-1 and F.E.M.A. Instruction 108-1-1, and pursuant to Section 102 of the National Environmental Policy Act (N.E.P.A.) of 1969, as implemented by the regulations promulgated by the President's Council on Environmental Quality (C.E.Q.); 40 C.F.R. Parts 1500-1508. The purpose of this E.A. is to analyze the potential environmental effects of proposed alternatives to this project to determine whether to prepare an Environmental Impact Statement (E.I.S.) or a Finding of No Significant Impact (F.O.N.S.I.).

F.E.M.A. is also using this E.A. to document compliance with other applicable federal laws and Executive Orders (E.O.) including: the Clean Air Act (C.A.A.), the E.O. 13693: Planning for Federal Sustainability, the Clean Water Act (C.W.A.), the E.O. 11988: Floodplain Management, the E.O. 11990: Protection of Wetlands, the Endangered Species Act (E.S.A.), the National Historic Preservation Act (N.H.P.A.), and the E.O. 12898: Environmental Justice.

1.1 Disaster Background and Overview

Tropical Storm Irene struck on August 27, 2011, and caused the most severe flooding since the record flood of November 1927. Flint Brook, located approximately 1,200 feet north of the R.F.C.S. Site, overtopped a retaining wall and, following a ridge created by VT Route 12A, swept through the 1,100 foot long R.F.C.S. before entering the Third Branch of the White River to the south (Appendix A-1). The floodwaters carried a portion of a nearby residence into the Springhouse, destroying both structures. Tropical Storm Irene functionally destroyed the R.F.C.S. by filling in the fish rearing ponds with sediment. Flood waters reached an estimated height of 3 feet above the ground surface at the R.F.C.S. The ponds and raceways were damaged to an extent that the R.F.C.S. was rendered inoperable for an extended period of time, and incapable of rearing production trout. The R.F.C.S. rears production trout for recreational purposes within the local watershed. The R.F.C.S. is also critical to supporting the children's fishing programs run by V.F.W.D., brings over 2,000 annual visitors to the small community of Roxbury, and is the only facility that raises the "Trophy" Brook Trout that bring anglers to the State of Vermont, supporting

conservation efforts through fishing license and area-use fees. The significantly reduced capacity of the R.F.C.S. in its current state has compromised the ability of V.F.W.D. to support these efforts.

The property on which the R.F.C.S. sits is approximately 8.3 acres (Appendix A-2). Approximately 4.0 acres of this property will be disturbed by the proposed project, which involves the reconstruction of the R.F.C.S. with substantial upgrades to meet C.W.A. requirements and increase flood resiliency. The remaining portion of the property is occupied by buildings used by V.F.W.D. for operations not related to fish culture.

1.2 Purpose and Need

F.E.M.A.'s P.A. program fosters the protection of health, safety and welfare of citizens, assists communities in recovering from damages caused by disasters and reduces future losses resulting from natural disasters. The purpose of the project is to return the capacity and function of the R.F.C.S services to pre-disaster levels and to mitigate against damage from future storm and flood related disasters. The project is needed because the R.F.C.S. is currently not fully operational and continues to be susceptible to future storm and flood losses.

Prior to August 2011, the R.F.C.S. produced about 85,000 catchable trout per year, which were stocked in area waterways and water bodies. Due to its historically high level of production prior to Irene and relatively low operating costs, attributed to a readily-available supply of clean and cold groundwater, the R.F.C.S. is considered critical to achieve the fish production goals of the V.F.W.D. fish hatchery system. Prior to the storm, the in-ground ponds were incapable of achieving the C.W.A. requirements for nutrient (phosphorus and nitrogen) and chemical (formalin, chloramine-T) discharge under a National Pollutant Discharge Elimination System (N.P.D.E.S.) permit. The proposed project will result in an R.F.C.S. that is returned to its former function as the primary fish culture station in Vermont, while achieving compliance with the C.W.A. and supporting public outreach and interest in natural resources conservation.

2.0 ALTERNATIVES CONSIDERED

C.E.Q. regulations (40 CFR 1502.14) require federal agencies to consider a reasonable range of alternatives that meet the purpose and need of proposed actions in their N.E.P.A. review. Reasonable alternatives include other possible means to meet project needs, but with varying degrees of environmental impact. Under N.E.P.A. guidelines, a No Action alternative is also required, in large measure to set a baseline by which to judge the other practicable alternatives.

The following section describes various alternatives analyzed and considered in rebuilding the R.F.C.S.

V.F.W.D. considered rebuilding the R.F.C.S. to its pre-disaster configuration, relocating the R.F.C.S. to another site, and building an upgraded fish culture station at the existing Site. Relocating the R.F.C.S. and repairing the facility with mitigation were analyzed and dismissed, and was not considered further within this document when comparing the impacts to resources on the selected alternatives.

2.1 Alternative 1 – The No Action Alternative

Under the No Action Alternative, V.F.W.D. would continue to operate the R.F.C.S. in a reduced capacity, as it has since Irene flooding event in 2011. However, the R.F.C.S. facility was effectively destroyed by flooding during Irene, and under the present operating conditions the R.F.C.S is unable to fulfill its primary purpose of producing yearling Brook Trout and Rainbow Trout for stocking the waters of the State. Since 2011 V.F.W.D. has been unable to meet its fish culture goals due to the loss of R.F.C.S., with trout production shortfalls of at least 30% per year since 2011, based on V.F.W.D. data.

2.2 Alternative 2 - Proposed Alternative – Rebuild of R.F.C.S. on Existing Site with Upgrades

Under the Proposed Alternative, V.F.W.D. would rebuild the R.F.C.S. as an aboveground, tank-based fish rearing facility (Appendix A-3). Existing historic buildings would remain; the ponds, aside from Pond #1 and #2, will not. The state would restore Ponds #1 and #2 to pre-disaster (though not functional) condition, and stock it with fish so that visitors can learn and understand the Hatchery's historic use.

Two enclosed pavilions with raised tanks would replace the function of the ponds, which offers better flood protection and will also allow the complex to meet permit requirements under the C.W.A. An Upper Tank Pavilion and Lower Tank Pavilion would be built on the former locations of Ponds #3, #4 and #5. Each pavilion would consist of six 20-foot diameter tanks with concrete bottoms, and stainless steel walls. Each of these pavilions measuring approximately 25 feet high, 75 feet wide, and 80 feet long. To match the existing structures, the new Pavilions would be clad in white siding panels and have green roofs, trim, doors and wire mesh windows to promote viewing by the general public.

Other changes to the Site under the Proposed Alternative include:

- Almost the entire Site would be re-graded to improve stormwater management and flood resiliency.
- Stormwater B.M.P.s, including a drainage ditch with check dams and a detention pond with sediment forebays, would be constructed to manage stormwater in accordance with the Vermont Stormwater Manual.
- The installation of a new system of mostly underground pipes and pumps to bring water to the tanks, which requires that the water be better screened of leaves and debris.
- Water exiting the R.F.C.S. would be chemically-treated to meet discharge permit limits under the C.W.A. This objective will be achieved by construction of:
 - A new Influent Treatment Building with filtration and ultraviolet disinfection to eliminate harmful hatchery diseases and decrease the need for fishery chemicals;
 - A new Effluent Treatment Building with clarifiers to remove phosphorous, nitrogen, and settleable solids; and
 - A new plastic-lined Chemical Treatment Pond to allow for the biological and photo-degradation of fishery chemicals (primarily formalin and chloramine-T).

In addition, the state would bring the property into compliance with the Americans with Disabilities Act (A.D.A.), which would include installation of handrails, guardrails, walkways, ramps, signage, and automatic doors. A concrete walkway along the pond with railings to accommodate visitors would be installed. This walkway would allow visitors to approach the ponds at a distance from which they can visualize and learn about the hatchery's historical function. A new Visitor Parking lot and Restroom Building would be constructed in front of the Hatchery Building, an area that currently serves as an unpaved parking area for hatchery staff. A significant amount of re-grading of the existing topography would be completed in order to accommodate the new modifications.

2.3 Other Alternatives Considered and Eliminated

2.3.1 Repairing Facility In-Kind

The floodwaters from Irene reached an estimated height of 3 feet above the ground surface at the R.F.C.S., inundating the R.F.C.S. buildings and destroying the in-ground fish rearing ponds. In addition to Irene, the in-ground ponds were damaged to a lesser extent during flooding events in 1998 and 2006. Replacing the in-ground fish rearing ponds to the pre-2011 configuration would therefore result in a facility that remains vulnerable to future flooding events. The in-ground ponds were also incapable of achieving the C.W.A. requirements for nutrient (phosphorus and nitrogen) and chemical (formalin, chloramine-T) discharge under a National Pollutant Discharge Elimination System (N.P.D.E.S.)

permit. The ponds that comprised the pre-2011 R.F.C.S. were laid out in the 1930s and 1940s, at a time when waste removal and effluent water quality were not considered.

2.3.2 Relocation of the Facility

Since the loss of the R.F.C.S. in 2011, the remaining six fish culture stations have increased production to partially compensate for the loss in fish production. However, increasing production at the remaining facilities has placed a strain on limited groundwater resources and is therefore not a long-term solution to the loss of the R.F.C.S. Increasing fish production at the federal fish culture facilities has also partially compensated for the loss to full functionality of the R.F.C.S., under a cooperative agreement between V.F.W.D. and U.S.F.W.S. Compared to the operating costs of the federal facilities, the R.F.C.S. is less expensive to operate due to specific advantages of its hydrology, specifically the gravity flow water source that does not require pumping, and a favorable water temperature that does not require heating or chilling.

In addition to low operating costs and the unique advantages of the existing location of the R.F.C.S., prior to Irene the R.F.C.S. was the only fish culture station producing “Trophy” Brook Trout. These fish are prized by anglers and thus contribute to the overall economic impact of the fish culture program.

Beyond the advantages of the existing R.F.C.S. location, including outstanding fish quality and quantity production for comparatively low operating costs, there are non-production reasons to maintain the R.F.C.S. in its present location. Chief among these non-production reasons is the fact that, according to the original deed which conveyed the R.F.C.S. property to the State of Vermont, if the State were to cease raising fish at the R.F.C.S. property, the land would revert back to the original heirs of the estate. As the R.F.C.S. property also hosts the V.F.W.D District Office and laboratory facilities, moving the R.F.C.S. to another location would result in substantial relocation effort and cost to the State. Furthermore, at 125 years old, the R.F.C.S. is the oldest fish hatchery in the State of Vermont, and is listed on the National Register of Historic Places (N.R.H.P.).

3.0 AFFECTED ENVIRONMENTS AND POTENTIAL EFFECTS OF THE ALTERNATIVES CONSIDERED

C.E.Q. regulations at 40 C.F.R. 1508.9 require federal agencies to evaluate potential effects on the environment from the implementation of the considered alternatives, including the proposed alternative. In the following section, the *No Action Alternative* consists of the continuation of the existing operations at the R.F.C.S. in a severely limited capacity. The *Proposed Alternative* may have direct effects on the R.F.C.S. Site. These potential effects are addressed where appropriate.

Environmental reviews typically conducted for FEMA-funded projects consider a variety of federal environmental laws to determine if they are triggered by a proposed action. The following laws were considered, but were determined not to apply to actions related to any of the alternatives: Coastal Barrier Resources Act; Coastal Zone Management Act; Fish and Wildlife Coordination Act; Migratory Bird Treaty Act; and the Wild and Scenic Rivers Act.

Under FEMA's Public Assistance Program, all sub-grantees are required to comply with all federal, state and local environmental laws and regulations.

Table 3-1 summarizes the effects described and analyzed in this chapter. Levels of potential effect are defined as follows:

- * Negligible: The resource area would not be affected, or changes would be non-detectable or if detected, effects would be slight and local. Effects would be well below regulatory limits.
- * Minor: Changes to the resource would be measurable, although the changes would be small and localized. Effects would be within or below regulatory limits. Mitigation measures may be necessary to reduce potential effects.
- * Moderate: Changes to the resource would be measurable and have localized and potentially regional scale effects. Effects would be within or below regulatory limits, but historical conditions would be altered on a short-term basis. Mitigation measures may be necessary to reduce potential effects.
- * Major: Changes would be readily measurable and would have substantial consequences on a local and potentially regional level. Effects would exceed regulatory limits. Mitigation measures to offset the effects would be required to reduce effects, although long-term changes to the resource would be possible.

Table 3-1.
ALTERNATIVES ANALYSIS: SUMMARY OF POTENTIAL EFFECT
AND MITIGATION APPLIED

Affected Environment/Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Geology	Negligible	Negligible	None
Soils	Minor	Minor	Erosion Prevention and Sediment Control Plan submitted to V.D.E.C. Stormwater Plan BMPs include check dams to promote infiltration and a detention pond with sediment forebay and outlet to a stabilized drainage outfall.
Vegetation	Negligible	Negligible	None
Wildlife	Negligible	Negligible	None
Threatened and Endangered Species	Negligible	Negligible	V.F.W.D. may voluntarily restrict tree cutting during the period from June 1 to July 31. This is a voluntary measure and is not a required mitigation measure in order to ensure compliance with the U.S. Fish and Wildlife Service's (U.S.F.W.S.) January 5, 2016, intra-Service Programmatic Biological Opinion (B.O.) on the final 4(d) rule for the Northern Long Eared Bat for section 7(a)(2) compliance.

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Floodplains	Moderate	Minor	Floor slabs of Tank Pavilions will be 3-5 feet above existing grade. Aboveground tanks are less likely to be damaged by flooding.
Wetlands	Negligible	Minor	<p>On-Site Class II wetlands have been reclassified to Class III by V.A.N.R.</p> <p>Design changes to minimize wetland impacts were developed and agreed to by V.F.W.D., U.S.A.C.E., and U.S.E.P.A., and have been incorporated into the Proposed Project design. An approval letter is under preparation by U.S.A.C.E. to authorize the project under Category 2 Vermont General Permit. The work will comply with all terms of the Vermont General Permit. These conditions are summarized in Section 3.2.2.</p>

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Groundwater	Minor: Effluent from fish culture operations will not meet C.W.A. requirements for nutrient pollution.	Minor	<p>Nutrients (primarily phosphorus and nitrogen) and fishery chemicals will be reduced in waters leaving the Site.</p> <p>Thermal pollution (increase in water temperature leaving the Site) will be reduced under the Proposed Action by removing open water in favor of covered fish-rearing tanks and underground piping.</p> <p>Fish wastes to be separated for off-Site beneficial use.</p> <p>Existing septic systems to remain in place.</p> <p>See Section 3.2.3 for more details.</p>
Archaeological Resources	Negligible	Minor	Inadvertent discovery conditions to apply to all construction activities. See Section 3.3.1 for more detail.

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Historic Buildings	Negligible	Moderate	<p>Finding of Adverse Effect as determined, by F.E.M.A. Treatment Proposal prepared by F.E.M.A. in lieu of formal Memorandum of Agreement was submitted to S.H.P.O., D.E.M.H.S., and V.F.W.D. Concurrences from all parties were received by December 16, 2016. Treatment measures include:</p> <ul style="list-style-type: none"> • Design Review by S.H.P.O. • Public Interpretation • National Register nomination amendment. <p>See Section 3.3.2 and attached supporting docs for more details</p>
Land Use and Zoning	Negligible	Negligible	None
Utilities	Negligible	Minor	<p>Stormwater Plan B.M.P.s include check dams to promote infiltration and a detention pond with sediment forebay outleting to a stabilized drainage outfall.</p> <p>Waters leaving the R.F.C.S. will be treated to meet C.W.A. discharge requirements.</p>
Traffic and Parking	Negligible	Minor: Construction-related only. No increase in visitation over pre-2011 operations.	Limited parking for general public and planned visitation by appointment only.

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
<p>Potable Water, Wastewater, Stormwater</p>	<p>Moderate: Stormwater management not addressed; effluent from fish culture operations will not meet C.W.A. requirements</p>	<p>Minor</p>	<p>Modification to Wastewater and Potable Water Supply Permit #WW-5-6093 will be sought for addition of an outdoor A.D.A.-compliant restroom.</p> <p>Erosion Prevention and Sediment Control Plan submitted to V.D.E.C. Stormwater Plan B.M.P.s include check dams to promote infiltration and a detention pond with sediment forebay outleting to a stabilized drainage outfall. Stormwater discharge post-construction will be managed under the Stormwater Discharge General Permit issued by V.D.E.C.</p> <p>Discharge limits established by V.D.E.C.; a N.P.D.E.S. permit for discharge to a receiving water (Third Branch White River) will be obtained under the C.W.A. as a mitigation measure.</p>

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Air Quality	Negligible	Minor: Temporary during construction	<p>Standard dust control measures to be implemented during construction in accordance with Vermont Stormwater Construction General Permit, and under an Erosion Prevention and Sediment Control Plan which was submitted to V.D.E.C.</p> <p>Dust control will also be included in the construction bid specification by V.B.G.S.</p>
Noise	Negligible	Minor: Temporary increase in noise during construction.	<p>Construction equipment will meet local, state and federal noise regulations. Construction equipment will be fitted with mufflers.</p> <p>HVAC and water pump noise levels expected to be within typical noise levels for such systems.</p> <p>Minimal increase in noise levels at neighbor property lines.</p>
Asbestos, Structural Debris, and Fuel Tanks	Negligible	Minor	<p>Electrical generator diesel-fuel aboveground storage tank (belly tank) will conform to V.D.F.S. and V.W.M.D. regulations. A diesel-fuel storage and use plan will be filed with and approved by V.D.F.S.</p>

Affected Environment/ Resource Area	Alternative 1: No Action	Alternative 2: Rebuild on Existing Site with Upgrades (Proposed Alternative)	B.M.P.s/Mitigation Measures to Be Applied
Hazardous Waste	Negligible	Minor	Oil and hazardous materials to be stored within secondary containment. Low volumes of fishery chemicals (Formalin and Chloramine-T) to be used on-Site and will be removed from waters leaving the Site.
Seismic Safety	Negligible	Negligible	None
Environmental Justice	Negligible	Negligible	None
Climate Change	Negligible	Minor	Under the Proposed Action energy use at the Site will increase. The proposed design is undergoing review by Efficiency Vermont, with the goal of achieving efficiency targets under the 2016 Vermont State Agency Energy Plan. Salisbury Fish Culture Station will receive solar photovoltaic panels. Energy from these solar panels will be used to partially offset additional carbon emissions generated by increased energy use at the R.F.C.S.

3.1 Terrestrial and Biological Resources

Terrestrial resources combine to form a mosaic landscape. Factors related to geology, soils, vegetation, and wildlife are considered during project development to determine if one or more actions could adversely affect one or multiple resources or upset the balance among them.

3.1.1 Geology

3.1.1.1 Affected Environment

Underlying bedrock geologic features can significantly affect regional and local topographic variability, vegetative cover types, wildlife habitat and weather.

The Vermont Agency of Natural Resources (V.A.N.R.) maintains a Geographic Information System (G.I.S.) database for data of environmental interest and makes this data available through environmental interest mapping tools, such as the Natural Resource Atlas (N.R.A.).

According to the N.R.A. database Geology Layer bedrock at the Site is mapped as metamorphosed volcanic rocks of the Moretown Formation (Appendix A-4). The primary rock type is amphibolite, and the secondary rock type is greenstone. The surficial geology is predominantly fluvial gravel of the valley bottom, with glacial till mapped on the valley slope along the west side of the Site. Glacial till at the Site mantles shallow bedrock, which is exposed in outcrops on the slope leading to the abutting N.E.C.R. tracks. There are no unique or protected geologic resources or geologic hazards in the project vicinity.

3.1.1.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effects on Site geology.

ALTERNATIVE 2: PROPOSED ACTION – Despite the grading for stormwater runoff and construction no environmental consequences related to geology have been identified and therefore the project will result in negligible effects to geology.

3.1.2 Soils

3.1.2.1 Affected Environment

Because high-quality farmland is limited, the U.S. Department of Agriculture (U.S.D.A.) recognizes that responsible governing bodies, as well as individuals, should encourage and facilitate the wise use of our nation's prime farmland. The Farmland Protection Policy Act (7 USC 4201) states, "the purpose of the Act is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses."

N.R.A. mapping of National Resource Conservation Service (N.R.C.S.) soils units in the vicinity of the project is provided as Appendix A-5. The soils classifications at the site according to the N.R.C.S. on-line soil database include:

- Rumney fine sandy loam, 0-3% slope, frequently flooded; and
- Tunbridge-Lyman complex, 35-65% slope, very rocky.

The parent material of the Rumney soil is alluvium (fluvial sands and gravels). The parent soil of Tunbridge-Lyman soil is glacial till. Rumney fine sandy loam is classified as agricultural soil of statewide (b) agricultural soil importance, limited by wetness (N.R.C.S., 2016). Approximately 5.3 acres of soils of “Statewide” agricultural importance as classified by N.R.C.S., specifically the Rumney fine sandy loam, are located within the Site property boundary (Appendix A-6). In addition, there are 0.2 acres of “Prime” agricultural soil mapped at the extreme northwest corner of the Site.

3.1.2.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Under the No Action alternative, storm and flooding events are anticipated to continue to erode soils at the Site. Based on this potential for further soil erosion, minor effects can be expected under the No Action Alternative.

ALTERNATIVE 2: PROPOSED ACTION – Site soils have been thoroughly disturbed by the use of the Site as a fish culture station over the past 125 years. The Proposed Action will therefore not result in the disturbance of soils that might otherwise have the potential for agricultural use.

Clearing, grading and construction at the Site will create a potential for soil erosion and transport. To mitigate soil erosion and transport, the project will apply for coverage as a “moderate risk project” under the Vermont Stormwater Construction General Permit (3-9020) in compliance with state law and the C.W.A. During construction soil disturbance at any one time will be minimized in accordance with the Erosion Prevention and Sediment Control Plan (E.P.S.C.) submitted to V.D.E.C. as part of the Stormwater Construction Permit Application for coverage under Permit 3-9020. During and post-construction, best management practices (B.M.P.s) will be implemented in accordance with the project’s E.P.S.C. Such B.M.P.s to be implemented include a new drainage ditch with check dams to promote stormwater ponding and infiltration, and a new stormwater detention basin with an overflow to a new stabilized drainage outfall in the south end of the project area.

Post construction, there will be minimal impacts to soils from natural erosion, drainage, and human interaction. Because of the permanent B.M.P.s incorporated in the project design the impact to erosion will be reduced. Based on all the factors considered, through coordination with regulatory agencies and compliance with required permits, minor effects to soil are anticipated as part of the Proposed Action.

3.1.3 Vegetation

3.1.3.1 Affected Environment

The Site comprises the R.F.C.S. and associated buildings, with an unpaved driveway and parking lot at the north end of the Site. The adjacent property to the north is occupied by a single family home at the intersection of Thurston Hill road and VT Route 12A. The nearest homes beyond this residence are approximately 600 feet north of the Site. The Site is bordered by a State highway (VT Route 12A) and the Third Branch of the White River to the east, and active N.E.C.R. tracks to the west. Beyond the railroad tracks are a forested slope, along with residential and agricultural properties (fields) along Thurston Hill Road. The adjacent property to the south, beyond the office and lab facilities of V.F.W.D., is undeveloped wooded land. The Third Branch of the White River crosses VT Route 12A approximately 500 feet south of the project area, or about 50 feet south of the Site property boundary. The nearest residences to the south of the Site are located greater than ½ mile from the Site property boundary.

As shown on N.R.A. mapping, the Site does not support any natural communities of concern or rare, threatened or endangered plant species (Appendix A-7). The N.R.A. mapping includes both state and federally listed threatened and endangered plant species, as well as state rare and uncommon plant species. The Site is surrounded by a mixed coniferous and deciduous forest with the Site itself being cleared for the use as a Hatchery.

3.1.3.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effects on vegetation.

ALTERNATIVE 2: PROPOSED ACTION – An estimated 40 trees will be removed as part of the Project. This estimate is expected to be high because most of the trees located within the defined cut area on the proposed Site plan coincide with areas of exposed or shallow bedrock. Due to the presence shallow bedrock these areas are unlikely to be cleared or re-graded. Furthermore, V.F.W.D. has stated that trees will be kept unless extraordinary measures are needed to avoid their removal during construction. Therefore, the Proposed Action will have a negligible effect on vegetation.

3.1.4 Wildlife

3.1.4.1 Affected Environment

The Site consists primarily of the buildings, unpaved driveways, and man-made waterways associated with the R.F.C.S. and other V.F.W.D. operations, and does not provide significant wildlife habitat. N.R.A. mapping shows no significant natural communities, deer winter range, vernal pools, state rare, threatened or endangered animal species or federal threatened or endangered species in the vicinity of the project (Appendix A-8). A wooded slope provides a buffer between the Site and the deer wintering range such that Site construction is not expected to have an effect on the deer wintering range. No lakes or

natural fish-bearing streams are located on the property. Small mammals may live on this developed property and game animals may pass through it.

No genetically-modified fish have been, or are planned to be raised by the R.F.C.S., in compliance with State law banning the culture of genetically modified fish. Both native Brook Trout and non-native Rainbow Trout produced at the R.F.C.S. are used to stock various State waters, including the Third Branch of the White River. As the Third Branch of the White River is also the receiving waterbody for waters discharged from the R.F.C.S., escape of fish from the R.F.C.S. is therefore not considered a problem. Nevertheless, the new R.F.C.S. design using enclosed, raised tanks will lessen the chance that fish will escape the facility.

As documented in Section 3.2.2, Class II wetlands were mapped at the R.F.C.S. by V.D.E.C. Class II wetlands require a permit from V.D.E.C. to disturb. On November 1, 2016, V.D.E.C. formally reclassified on-Site wetlands as Class III wetlands, which will not require a permit from V.D.E.C. to disturb. In addition to addressing state-jurisdictional wetlands, V.F.W.D. applied for a permit from the United States Army Corps of Engineers (U.S.A.C.E.) for the placement of fill in Waters of the U.S. under Section 404 of the C.W.A.

3.1.4.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have a negligible effect on wildlife.

ALTERNATIVE 2: PROPOSED ACTION – Based on references cited, the project will have a negligible effect on wildlife.

3.1.5 Threatened and Endangered Species

3.1.5.1 Affected Environment

The U.S. Fish and Wildlife Service (U.S.F.W.S.) maintains a list of federally listed threatened and endangered species. A list of potentially affected resources, including threatened and endangered species, was produced for the R.F.C.S. project area using the U.S.F.W.S. Information, Planning and Conservation System (IPaC) on June 19, 2016. The IPaC Report indicates the Proposed Action is located within the known range of the federally listed Northern Long-Eared Bat (Appendix A-9). The U.S.F.W.S. Northern Long-Eared Bat Final 4(d) Rule (U.S.F.W.S., 2016) regulates activities which might harm this species, including any activities within winter refuges (hibernacula) and tree cutting within one-quarter mile of hibernacula or within 150 feet of a known, occupied roost tree. Known hibernacula and roost trees are mapped by the Vermont N.R.A. The N.R.A. database shows no significant natural communities or state or federal rare, threatened or endangered species in the vicinity of the project; this includes hibernacula and roost trees for the Northern Long-Eared Bat.

3.1.5.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effects on threatened or endangered species.

ALTERNATIVE 2: PROPOSED ACTION – The Northern Long-Eared Bat is considered to exist statewide in Vermont, although its numbers have been drastically reduced in recent years by the disease, white-nose syndrome. The habitat for this species includes caves and mines for winter hibernacula and forested habitat for summer foraging and roost trees. The Site is devoid of caves and mines that could provide critical habitat for the species. Due to the tree clearing activity included in the proposed action, consultation with U.S.F.W.S. is required.

A May 5, 2016 V.F.W.D. review found that there are “no known occupied Northern Long-Eared Bat occurrences near the [Site],” and that the small amount of tree clearing proposed as part of the project is “far below [the V.F.W.D.] threshold of concern for take” of Northern Long-Eared Bat (Appendix A-10). A review by the U.S.F.W.S. on May 10, 2016, pursuant to Section 4(d) of the Endangered Species Act (E.S.A.) determined that the project will not result in a prohibited take of Northern Long-Eared Bat (Appendix A-11).

F.E.M.A. finds that the effects of the proposed tree removal are consistent with U.S.F.W.S.’s January 5, 2016, intra-Service Programmatic Biological Opinion on the Final 4(d) Rule for the Northern Long-Eared Bat for Section 7(a)(2) compliance. FEMA used the Final 4(d) Rule’s optional streamlined consultation framework for our Northern Long-Eared Bat Section 7 consultation and received concurrence on May 10, 2016.

V.F.W.D. may voluntarily restrict tree cutting from June 1 to July 31; a period which coincides with the Northern Long Eared Bat pup-rearing season. However, based on the references cited, compliance with the Final 4(d) Rule is not contingent upon the application of Time-of-Year restrictions on tree clearing.

Based on the references cited, the project will have a negligible effect on threatened and endangered species. FEMA has made a finding of Not Likely to Adversely Affect (NLAA) with regards to the Northern Long-Eared Bat.

3.2 Aquatic Resources

The Site is located in an alluvial plain between Flint Brook and the Third Branch of the White River. The Site is located approximately 120 feet west of and 10 feet higher in elevation than the Third Branch of the White River, and approximate 1,100 feet southeast and 40 feet lower in elevation than Flint Brook. Flint Brook flows northwest to a confluence with the Third Branch of the White River approximately 1,500 feet (1/4 mile) north of the Site. Both Flint Brook and the Third Branch of the White River have steep, narrow channels that are prone to rapid increases in flow during extreme rainfall event (U.S.G.S, 2014). During Tropical Storm Irene in 2011, Flint Brook breeched a retaining wall and flowed east and south over the Site. The Third Branch of the White River crosses Route 12 A (east-

west) approximately 150 feet south of the Site and flows southward approximately 20 miles to its junction with the main stem of the White River at Bethel, Vermont.

3.2.1 Floodplains

3.2.1.1 Affected Environment

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and the modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. F.E.M.A.'s National Flood Insurance Program (N.F.I.P.) publishes maps that identify areas at risk from flooding based on a 100-year and 500-year storm event.

The project area is located within F.E.M.A. Floodplain Map, Panel Number 50023C0555E and Panel Number 50023C0565E, effective date March 19, 2013 (Appendix A-12). This Flood Map does not show either a 100 or 500 year floodplain at the location of the R.F.C.S. Since the site has been routinely flooded F.E.M.A. considered the Site to be located within the floodplain based on this historical flood data, at the time, this was considered the best available data.

In 2014, at the request of the State of Vermont after flooding during Tropical Storm Irene, U.S.G.S. performed a Hydrologic and Hydraulic Study (H.H.S.) of the reaches of Flint Brook and the Third Branch White River in the vicinity of the R.F.C.S. The H.H.S. included a map of the 500-year floodplain (0.2% annual chance flood) under existing conditions (Appendix A-13). Overall, the H.H.S. determined that the RFCS is within the modeled 500-year floodplain.

Floodplain impacts are regulated under 44 C.F.R. Part 9 and the Vermont Flood Hazard Area and River Corridor Rule (10 V.S.A. Chapter 29). As a State-led project, the Proposed Action is exempt from municipal review as determined in the July 21, 2016 email correspondence from V.D.E.C. (Appendix A-14).

3.2.1.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Under the No Action Alternative, and as evidenced by the flood events of 1998 and 2006, periodic flooding events have the potential to significantly damage built structures and the environment of the Site under its current configuration. For these reasons, under the No Action Alternative, moderate effects to the Site from flooding events are anticipated.

ALTERNATIVE 2: PROPOSED ACTION – The project will not encroach on any F.E.M.A. or State-mapped 100-year floodplain. Under the Proposed Action, the floor slabs of the Upper and Lower Tank Pavilions will be raised about 3-5 feet above the existing ground surface, placing them above the estimated maximum level of floodwaters experienced during Irene.

At the request of V.F.W.D., the V.D.E.C. River Corridor and Floodplain Protection Program reviewed the Proposed Action design plans to determine if a State of Vermont Stream Alteration Permit was required and to identify potential impacts to the V.D.E.C.-mapped river corridor. V.D.E.C. staff also visited the Site to evaluate whether or not topographic drainage features indicated in the plans could be classified as perennial streams. V.D.E.C. issued two letters that together constitute a formal jurisdictional determination that absolves the R.F.C.S. from acquiring state-level permits regarding floodplains and work in water. (Appendix A-14).

In the first letter, issued on July 21, 2016, Ned Swanberg, Central Vermont Floodplain Manager for V.D.E.C., stated, in part, that the Proposed Action will be “completely outside of the area of concern,” and that the Proposed Action “does not require further review or permitting with regards to Special Flood Hazard Areas or River Corridor encroachment.”

In the second letter to V.F.W.D., dated December 30, 2016, Jaron Borg, River Management Engineer for V.D.E.C., identified two “drainageways of interest” at the Site, as follows:

1. Existing raceway system, including water sourced from the Flint Brook diversion tunnel and several springs along the northern Site property boundary; and
2. A small drainage entering the raceway system below the “lower concrete dam” at the outlet of Pond #5, as depicted on the Existing Conditions Plan.

In his letter Mr. Borg stated, in part, that the Proposed Action does not require a State of Vermont Stream Alteration Permit because neither of the identified drainages is considered by V.D.E.C. to be a perennial stream.

Based on references cited, flood and runoff waters will still enter the site, however, the project will increase the overall flood resiliency of the Site and will have a minor effect on the existing floodplain.

3.2.2 Wetlands

3.2.2.1 Affected Environment

E.O. 11990 requires federal agencies to avoid adverse effects to wetlands to the extent possible. Section 404 of the C.W.A. establishes a wetland permit program administered by the U.S.A.C.E. The Vermont Wetland Rules identify significant wetlands and regulate activities in and near these wetlands. F.E.M.A.’s implementing regulations are at 44 C.F.R. Part 9, which includes an eight step decision-making process for compliance with this part. The 8-Step review is incorporated here as part of the Environmental Assessment (Appendix A-15).

The Vermont Wetland Rules identify three classes of wetland. Class I wetlands have been determined to be exceptional or irreplaceable and therefore merits the highest level of protection. Class III wetlands are not mapped or protected under the Vermont Wetland Rules, and do not require a permit to disturb. Class II wetlands fall in between Class I and Class III wetlands, and require a permit issued by V.D.E.C. to disturb.

Vermont Significant Wetlands Inventory (V.S.W.I.) mapping indicates the presence of a Class II wetland across the center of the Site (Appendix A-16). U.S.F.W.S. National Wetland Inventory mapping depicts a linear feature identified as “freshwater ponds,” which roughly correspond to the man-made ponds and raceways located at the R.F.C.S. (Appendix A-17). Class II wetlands were largely mapped from aerial surveys and as such may include man-made structures. Based on the V.S.W.I. mapping, V.F.W.D. contracted with a wetlands specialist, Mark Bannon of Bannon Engineering, to perform on-Site wetlands delineation on June 6, 2016. The delineation confirmed the presence of wetlands at the Site. Boundaries of the delineated wetlands were added to the proposed construction plan for the Site. Mr. Bannon mapped the boundaries of the man-made ponds and raceways at the R.F.C.S. using visible surface water boundaries and the presence of saturated soils. Additional wetland areas, including groundwater seeps that have “naturalized,” were delineated by observing the presence of wetland vegetation, surface water, saturated soils, and/or evidence indicating the area was topographically below the seasonal high water table, such as the presence of hydric soils or oxidation-reduction (redox) features. The on-Site wetlands delineation identified the following open water areas and wetlands at the Site:

- Waterways below the ordinary high water mark; 9,080 square feet (0.21 acres) total area; located within concrete-walled basins and fed by pipes installed when the R.F.C.S. was constructed.
- Wetlands located against the toe of the hillside, along the western edge of the Site; 27,110 square feet (0.62 acres) total area; formed in four distinct areas by groundwater seeping out from below mounded areas of the abutting railroad track.

The total area of both open water, as calculated from the ordinary high water mark, and wetland to be affected by the Proposed Action is 36,190 square feet (0.83 acres).

3.2.2.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effect on wetlands.

ALTERNATIVE 2: PROPOSED ACTION – Shannon Morrison, Wetlands Biologist with the V.D.E.C. Watershed Management Division, visited the Site on May 25, 2016. Following her Site visit, and after receiving the on-Site wetlands delineation report, Ms. Morrison stated in email correspondence on June 13, 2016 that all constructed features (man-made waterways) on the Site are exempt from the Vermont Wetland Regulations, and that the natural wetland features should be reclassified as Class III wetlands. Class III Wetlands are not protected under the Vermont Wetland Rules and therefore do not require

a permit to disturb. Based on this correspondence, V.F.W.D. submitted a petition for wetlands reclassification to V.D.E.C. Watershed Management Division on July 16, 2016. In response to this petition, and following a 15-day public comment period, V.D.E.C. issued a final Wetland Determination on November 1, 2016 formally reclassifying the on-Site wetlands from Class II to Class III (Appendix A-18).

On August 15, 2016, representatives of U.S.A.C.E (Angela Repella), U.S.E.P.A., (Beth Alafat), and V.F.W.D. (Jeremy Whalen and Adam Miller) met at the Site to discuss potential measures to mitigate impacts to jurisdictional wetlands and waters. During this Site visit the following mitigation measures were identified:

- Move the proposed parking lot from the Pond #1 area to the area directly north of the existing Hatchery Building, to avoid removing Pond #1.
- Remove the proposed drainage ditch to the northwest of the Hatchery Building.

Following the August 15 Site visit, V.F.W.D. consulted with S.H.P.O. (Jamie Duggan) concerning the relocation of the proposed parking lot and with the V.D.E.C. (Kevin Burke) concerning the removal of the proposed drainage ditch. The above-listed mitigation measures were subsequently incorporated into the proposed alternative design. V.F.W.D. prepared and submitted a memorandum summarizing the consultations and design changes to U.S.A.C.E. on October 7, 2016 (Appendix A-19). Taken together, the above-listed mitigation measures agreed to in the memorandum resulted in a net decrease of 7,247 square feet (0.17 acres) of proposed impact to wetlands and waters. A third mitigation measure, moving the proposed stormwater detention and effluent treatment ponds, was analyzed further by V.F.W.D. and found not to be feasible. A summary of this feasibility evaluation is contained in the October 7, 2016 memorandum.

As the total impacted area is less than 1 acre (0.83 acres), the Proposed Action qualifies for the U.S.A.C.E. Regional General Permit for Vermont under Category 2 issued pursuant to Section 404 of the C.W.A. (U.S.A.C.E., 2012). A Category 2 General Permit requires an application and written verification from U.S.A.C.E. prior to implementing a project. On December 2, 2016, V.F.W.D. formally submitted an application to U.S.A.C.E. for a Vermont General Category 2 Permit. On January 19, 2017 U.S.A.C.E. issued a Determination of Eligibility (D.O.E). The D.O.E. is the U.S.A.C.E. notice to the resource agencies. A formal authorization letter is then issued following the comment period (after all comments are addressed). For this project the resource agencies had until February 1, 2017 to provide comments. No comments were received from the resource agencies. U.S.A.C.E. is in the process of issuing the formal authorization letter which will reference the general conditions of the Vermont General Permit, as stated in the D.O.E. The V.F.W.D. will abide by all requirements under Category 2 of the U.S.A.C.E. Vermont General Permit, which include, but are not limited to the following:

- Avoidance and minimization of discharges of dredged or fill material into jurisdictional waters.
- No storage, maintenance, or repair of heavy equipment in wetlands.

- Use low ground-pressure heavy equipment, construction mats or corduroy roads when working in wetlands.
- Placement of temporary fill shall be authorized in writing by U.S.A.C.E. under a Category 2 General Permit.
- Upon completion of construction all disturbed wetlands areas shall be properly stabilized. Any seed mix applied shall contain only plant species native to New England and acceptable under the Vermont General Permit. Introduction of invasive species is prohibited.
- Trees to be cut in authorized disturbance areas shall be cut at ground level and not uprooted.
- Sedimentation and erosion control is a requirement under the Vermont General Permit. To meet this requirement all construction will be performed in accordance with the Stormwater Construction General Permit 3-9020 issued by V.D.E.C.
- Waterway and wetland work and crossings shall conform to the detailed requirements contained in the Vermont General Permit.
- Construction activities involving discharge into jurisdiction waters shall be consistent with the C.W.A. Compliance will be achieved through adherence to the Stormwater Construction General Permit 3-9020 issued by V.D.E.C.
- The Vermont Rivers Program should be consulted to determine any mitigation measures needed for work impacting a river channel. V.F.W.D. obtained written confirmation that a Stream Alteration Permit is not required for the proposed project on July 21, 2016 and December 30, 2016 (see Section 3.2.1).

Based on the references cited, coordination with V.D.E.C. and U.S.A.C.E., and the resulting mitigation measures to be implemented under a C.W.A. Section 404 Vermont General Permit, the project will have a minor effect on wetlands.

3.2.3 Groundwater

3.2.3.1 Affected Environment

V.D.E.C. has adopted a Groundwater Protection Rule and Strategy to protect Vermont's groundwater resource (V.D.E.C., 2005). This rule provides for the establishment of Groundwater Source Protection Areas to protect public water supplies obtained from groundwater. The Vermont Drinking and Groundwater Protection Division (V.D.G.P.D.) identifies no Groundwater Source Protection Areas within 1.0 mile of the Site.

The R.F.C.S. Site was originally chosen in part for the abundance of groundwater. Groundwater is combined with surface water from Flint Brook to support fish hatchery operations, and then directly discharged to the Third Branch of the White River with

minimal or no treatment. Potable water for the R.F.C.S. is provided by a drilled bedrock well located near the northeast corner of the Site.

3.2.3.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Under the No Action Alternative, the facility would continue to function at a level incapable of meeting N.P.D.E.S. requirements. Therefore, minor effects on groundwater quality are anticipated to continue. Specifically, water leaving the Site will continue to exceed nutrient limits under the C.W.A. in the absence of treatment measures, as included in the correspondence from V.D.E.C. regarding effluent limits in June 12, 2012. (Appendix A-20).

ALTERNATIVE 2: PROPOSED ACTION – Water for the proposed project will continue to be sourced primarily from two natural groundwater springs (combined flow of 95 gallons per minute [G.P.M.]) and surface water diverted from Flint Brook through a supply line (flow rate 350 G.P.M.).

The following mitigation measures to maintain the groundwater resource are part of the Proposed Action:

- All water entering the Site for fish-rearing operations will be filtered to remove debris and disinfected using an ultraviolet treatment system. Disinfection will reduce the volume of fishery chemicals needed to control disease.
- Check dams will be installed in a stormwater diversion ditch to promote stormwater infiltration, providing both stormwater treatment and recharge of the local groundwater aquifer.
- Process water will be partially captured, disinfected, and recycled through the fish rearing pavilions to minimize the use of groundwater (150 G.P.M. under normal conditions; up to 510 G.P.M. during storm events).
- A water treatment system will remove fish waste and the associated nutrient load (primarily phosphorous and nitrogen), settle out suspended solids, and allow time for fishery chemical (formalin, chloramine-T) to degrade through biological activity and through exposure to light.

Based on the above-listed mitigation measures, the project will have a minor effect on groundwater.

3.3 Cultural Resources

The National Historic Preservation Act (N.H.P.A.) of 1966 defines a historic property as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register". Criteria for listing a property on the National Register of Historic Places can be found in 36 C.F.R. Part 60. Cultural properties include a broader category of physical assets, such as archaeological, architectural, and historical properties, that do not meet National Register criteria, but which may have cultural value.

3.3.1 Archaeological Resources

3.3.1.1 Affected Environment

Native American populations have been present in the geographic area currently defined as Vermont for approximately 11,000 years, and archaeological sites have been identified in many areas of the state. The N.H.P.A. requires proper treatment of inadvertently discovered archeological materials and/or human remains.

Most of the Site has been in use for fish production since 1891, and the remainder of the Site has been developed for use by fisheries and other groups within V.F.W.D. Site preparation for the facility will include grading, installation of utilities, construction of buildings and parking areas and other activities that will modify the top few feet of soil within much of the Site.

3.3.1.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effects on potential archaeological resources at the Site.

ALTERNATIVE 2: PROPOSED ACTION – Since the Proposed Alternative involves a moderate amount of ground disturbance from the grading, archaeological sensitivity needs to be addressed. During a previous consultation for the septic system and leach fields at the R.F.C.S., Jen Russell, an Archaeology Officer for the Vermont Agency of Transportation, indicated were no archaeological concerns regarding the replacement of the septic system and leach fields due to the historical disturbance of the ground by 125 year of R.F.C.S. operation and by a multiple flooding events. Through consultation with the S.H.P.O. it has been determined that the ground disturbance is minor and the potential for finding intact Pre-Contact cultural material is low.

Based on references cited and coordination, the project will have potential minor effects on archaeological resources. To address this effect and the ground disturbance through building construction and grading, the following conditions will be placed on this project:

- In the event of the discovery of archaeological deposits (e.g. Indian pottery, stone tools, old house foundations, old bottles) the State of Vermont Fish and Wildlife Department and their contractor shall immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The State of Vermont Fish and Wildlife Department and their contractor shall secure all archaeological discoveries and restrict access to discovery sites. The State of Vermont Fish and Wildlife Department shall immediately report the discovery to the Vermont Division of Emergency Management & Homeland Security (D.E.M.H.S.) (Mary Andes, 802- 585-4720) and the F.E.M.A. Deputy Regional Environmental Officer (Lydia Kachadoorian, 857-205-2860); F.E.M.A. will determine the next steps.

- In the event of the discovery of human remains, the State of Vermont Fish and Wildlife Department and their contractor shall immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The State of Vermont Fish and Wildlife Department and their contractor shall secure all human remains discoveries and restrict access to discovery sites. The State of Vermont Fish and Wildlife Department and their contractor shall follow the provisions of applicable state laws, including 13 V.S.A. 3761 (Unauthorized Removal of Human Remains), 13 V.S.A. 3764 (Cemeteries and Monuments – Grave markers and historic tablets) and 18 V.S.A. 5212 (Permit to Remove Dead Bodies) or any amendments or supplanting laws and regulations. Violation of state law will jeopardize F.E.M.A. funding for this project. The State of Vermont Fish and Wildlife Department will inform the Office of the Chief Medical Examiner (802-863-7320), the State Archaeologist (Jess Robinson, 802 - 272-2509), Vermont Division of Emergency Management & Homeland Security (D.E.M.H.S.) (Mary Andes, 802- 585-4720) and the F.E.M.A. Deputy Regional Environmental Officer (Lydia Kachadoorian, 857-205-2860). F.E.M.A. will consult with the S.H.P.O. and Tribes, if remains are of tribal origin. Work in sensitive areas may not resume until consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the National Historic Preservation Act.

3.3.2 Historic Buildings

3.3.2.1 Affected Environment

As defined in the Advisory Council on Historic Preservation's (A.C.H.P.) regulations, the Area of Potential Effect (A.P.E.) for a project is defined as, the "geographic area or area within which an undertaking may directly or indirectly cause changes in the character of or use of historical properties, if any such properties exist" (36 CFR 800.16[d]). The A.P.E. is based upon the "potential" for effect, which may differ for aboveground resources (historic structures and landscapes) and subsurface resources (archaeological sites). Factors with potential to cause effects include but are not limited to; noise, vibration, visual (setting), traffic, atmosphere, construction, indirect and cumulative.

The R.F.C.S. is listed on the National Register of Historic Places (N.R.H.P.). The APE for this undertaking is the entire R.F.C.S. property. The State of Vermont established the R.F.C.S. in 1891, following the lead of nearby states and the federal government at a time when fish conservation and recreational fishing were rising in popularity. At the time, it was the first state-operated fish culture station in Vermont. Prior to 1890, Vermont State Fish Commissioners purchased or obtained fish eggs from private or federal hatcheries, incubated the eggs, and reared the resultant fry for planting in Vermont lakes, streams, and ponds. This process was becoming costly as result of the increase in fishing and conservation, so the Vermont Legislature appropriated funding for the R.F.C.S. The state chose the Roxbury location for three main reasons: a local man donated the land, fish could easily be transported via the adjacent rail line, and Flint Brook (then Burnham Brook) provided a source of fresh water. The first items built at the site were the Hatchery Building (Hatch House) in 1891 and four ponds.

By 1894, the Hatchery had eight ponds and an Ice House Building (for cold storage and transport uses). A Superintendent's House followed in 1897 (demolished in 1970 and replaced with a temporary mobile home), with a Carriage Barn following in 1897. The modern configuration of the five ponds likely appeared after 1912. In the 1930s the Civilian Conservation Corp (C.C.C.) built a number of structures at the Hatchery: the Storage Barn (1935), new raceways (1937), and two stone barbecues (1937). They also renovated the Hatch House in 1938. The exterior of the Hatchery Building has been relatively unchanged in its construction.

The Pond system was continuously upgraded over the years, until its destruction during Irene in 2011. Ten reinforced concrete raceways were constructed in 1912 on the west side of the hatchery near the railroad tracks. None of these are evident at the hatchery today. In 1931-1932 the five main ponds were rebuilt with new concrete headers and were spillways installed. In 1937 the C.C.C. constructed a linear series of six raceways with a diversion channel at the southern end of the ponds which replaced the earthen raceways.

Two additional structures on the property-- the Biology Lab (1960) and Springhouse (1960, rebuilt 2012) -- were non-contributing elements on the 1993 N.R.H.P. nomination form on account of age. The Springhouse is located within the proposed project area; the Biology Lab is not. The Biology Lab is now over fifty years old and can be considered contributing. There are no other historic resources located near the Hatchery that could be affected.

3.3.2.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The effect to historic structures is negligible under the No Action Alternative.

ALTERNATIVE 2: PROPOSED ACTION – In a letter to S.H.P.O. dated May 9, 2014, F.E.M.A. determined that an “Adverse Effect” existed for the Proposed Action. In lieu of a Memorandum of Agreement F.E.M.A. developed a proposal for Standard Treatment Measures based on Appendix E of the 2011 Programmatic Agreement between F.E.M.A. and the following signatories: S.H.P.O., D.E.M.H.S., and V.F.W.D. The Treatment Measures Proposal was submitted to the S.H.P.O, D.E.M.H.S, and V.F.W.D on December 15, 2016. All parties provided formal concurrence of the Treatment Measure Proposal on December 15 and 16, 2016 (Appendix A-21).

The Treatment Measures are categorized as Design Review by S.H.P.O., Public Interpretation and National Register Nomination Amendment. The specific items within these categories include:

Design Review:

- New structures will be designed to match existing conditions to avoid stark contrast with historic structures. For example, new construction will include white buildings with green trim.
- The landscape will aesthetically improve in appearance (akin to the original landscape) when power lines to existing buildings and new buildings are installed underground, with just two exceptions:

- Two overhead transmission lines, owned by the power company, that cross the property will remain above ground. The first comes across the north part and runs west to service residents on the east side of 12A. The second runs south along the railroad and supplies power to the lab building south of the hatchery.
- Cedar trees along the west side of pond 1 will remain as a “living outline” of the old pond; no cedar trees around pond 2 will be removed as they will perform a critical function for preserving the setting of pond 2 which will be restored for interpretative purposes.

Public Interpretation:

- Bringing pond 1 back as a viewing pond
- Bringing pond 2 back to operational status and have a concrete sidewalk with railings on the east side for viewing. There will not be any new platforms overhanging the pond (that would historically be inaccurate), see
- Adding signage in the walkway area and next to the stone barbeques that would contain photos and explanations of “Roxbury of the past”.
- Install feed dispensing machines for additional public outreach.
- Roadside Historic Marker has been ordered through the Division for Historic Preservation and has already been installed.

National Register Nomination Amendment:

- Working with the S.H.P.O. to select the appropriate qualified consultant/contractor to update the existing National Register nomination to include the post-project changes to the historic property. This updated nomination will be approved, as appropriate, by the S.H.P.O. and submitted to the National Park Service as an update to the original nomination form.
 - The amendment should outline the changes to the property because of new technologies in fish hatchery and the impacts flooding has had on the site since its founding. The amendment should identify a more appropriate period of significance that includes the changes to the property for these reasons, review the contributing and non-contributing status of the resources including the site itself, and address the applicable criteria. Because of the alterations to the property over the years, Criterion C may not be appropriate.

One of the Treatment Measures described in Appendix A-21, the installation of a roadside historical marker, was completed in September 2016. Therefore, by following all Treatment Measures in Appendix A-21, the Proposed Action will have a moderate effect on Historic Buildings.

3.4 Land Use and Zoning

3.4.1 Affected Environment

The Proposed Alternative involves continuing the existing land use by V.F.W.D. for fish culture operations. The Town of Roxbury is a rural community with a total population of

691 (2010) and a population density of 17 persons per square mile. Land use in the vicinity of the R.F.C.S. is residential and agricultural. The Town of Roxbury has no zoning ordinance; and there is no requirement for project review by the Town. However, as noted in the 2014 Roxbury Town Plan, the R.F.C.S. is considered a resource for the Town residents and a driver of visitation.

In Vermont, land development is subject to Act 250 (10 VSA Chapter 151) – Vermont’s Development and Control Law. Act 250 is administered by the District Environmental Commissions of the Natural Resources Board and is the state’s principle framework to ensure that the requirements of state and local laws and ordinances are met. The Act 250 program provides a public, quasi-judicial process for reviewing and managing the environmental, social and fiscal consequences of major subdivisions and developments in Vermont.

3.4.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have negligible effects on land use and zoning.

ALTERNATIVE 2: PROPOSED ACTION – In an email correspondence between the V.F.W.D. and Susan Baird, Coordinator for the District 5 Environmental Commission, the District Commission confirmed that the project does not constitute a “development” pursuant to 10 V.S.A. 6001(3)(A)(v), and thus does not require an Act 250 Land Use Permit (Appendix A-22).

Based on the references cited and coordination with the District 5 Environmental Commission, the Proposed Action will have a negligible effect on land use and zoning.

3.5 Infrastructure

3.5.1 Utilities

3.5.1.1 Affected Environment

The Site will continue to be serviced by an existing potable water well septic system, which have adequate capacity for the proposed facility. Water for the fish culture operations will continue to be provided by groundwater springs and surface water redirected from Flint Brook, but will now be filtered and disinfected to decrease the overall use of fishery chemicals and help achieve compliance under the C.W.A.

Effluent from the fish culture operations will be treated prior to being discharged to the Third Branch of the White River.

Electricity will continue to be provided through overhead power lines along Vermont Route 12A, maintained by the Central Vermont Public Service Corporation. All new electrical lines installed at the Site as part of the Proposed Alternative will be underground, with the exception one new feeder line to the existing Hatchery Building. This will leave

electrical utilities to exist in a combination of the remaining overhead utilities as well as the new buried electrical lines that will be installed.

Solid waste (trash) removal will continue to be provided by Casella Resource Solutions, a private company.

Fire protection and emergency rescue is provided by the Roxbury Volunteer Fire Department. The Town of Roxbury maintains an automatic response agreement with the larger, neighboring Town of Northfield, and is part of the Capitol Fire Municipal Aid System, comprised of 27 towns in the central Vermont region.

3.5.1.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The effects to utilities will be negligible under the No Action Alternative.

ALTERNATIVE 2: PROPOSED ACTION – All electrical, potable water, solid waste, and septic utilities are readily accessible. The Proposed Action will have a minor effect on wastewater from fish culture operations through the addition of systems to treat waters leaving the R.F.C.S. before they are discharged to the Third Branch of the White River. Minor effects on stormwater discharge from the R.F.C.S. will be mitigated through the addition of stormwater B.M.P.s.

3.5.2 Traffic and Parking

3.5.2.1 Affected Environment

As part of the Proposed Alternative, parking at the Site will be formalized through the construction of five visitor parking spaces, including one A.D.A. accessible parking space, in a lot situated near the rebuilt Pond #2. Additional space for event parking is available on a proposed paved driveway leading from the gravel entrance drive to the existing Hatchery Building and proposed Upper and Lower Tank Pavilions. In general, however, visitation by the public will be limited to several yearly events, and by appointment during other times. Annual visitation is not anticipated to exceed the historical average of 2,500 visitors.

The R.F.C.S. is located off of Route 12A (or Main St. at this location). Route 12A connects Roxbury (through Northfield and Berlin) to Montpelier to the north and Randolph (through Granville and Braintree) to the south. The highway also allows for easy access to U.S. Route 89.

3.5.2.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have a negligible effect on traffic and parking at the Site or its vicinity.

ALTERNATIVE 2: PROPOSED ACTION – Based on references cited, the project will have a minor effect on traffic and parking. Traffic during construction will be temporary. Limited parking will be provided for the general public under the Proposed Action. Post-construction visitation levels are not expected to exceed pre-2011 levels.

3.5.3 Potable Water, Wastewater, Stormwater

3.5.3.1 Affected Environment

The Site will continue to be serviced by the existing on-Site drinking water well and septic system. Sanitary wastewater treated through soil-based systems, such as the existing septic system at the Site, are subject to a Wastewater and Potable Water Supply Permit issued by V.D.G.P.D. Under Permit WW-5-6093, R.F.C.S. is permitted to discharge up to 120 gallons per day into the on-Site sanitary wastewater disposal system (septic system; located east of the hatchery building). The design flow of the mound septic system is based on stamped engineering plans dated June 1, 2012.

Regarding stormwater and wastewater directly discharged to a receiving waterbody, the State of Vermont administers the federal C.W.A. and the Vermont Water Quality Regulations. Stormwater Construction Permits address stormwater runoff from earth disturbance activity of one or more acres of land during construction, and Stormwater Discharge permits regulate stormwater post-construction. Both type of stormwater permit are issued by V.D.E.C.

Under the C.W.A., all municipal, industrial, and commercial facilities that discharge wastewater directly from a point source (such as the water discharged from fish culture operations at the R.F.C.S.) into a receiving water body are issued a permit under the National Pollutant Discharge Elimination System (N.P.D.E.S.). The State of Vermont, through the V.D.G.P.D., issues individual N.P.D.E.S. discharge permits under an agreement with U.S.E.P.A. Under this authority, V.D.G.P.D. determines the volume of effluent that can be discharged from the facility, and sets limits to ensure the environmental quality of the receiving water body is not compromised.

3.5.3.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Moderate effects to wastewater and stormwater runoff are anticipated to continue under the No Action Alternative. Specifically, water leaving the Site will continue to exceed nutrient limits under the C.W.A. in the absence of treatment measures. Stormwater will continue to leave the Site and enter the Third Branch of the White River without treatment.

ALTERNATIVE 2: PROPOSED ACTION – The following permits are being sought or modified for the Proposed Action in connection with potable water, wastewater, and stormwater:

- Vermont Wastewater and Potable Water Supply Permit (modification to existing permit #WW-5-6093 to be sought by V.F.W.D.)
- Stormwater Construction General Permit 3-9020 (Moderate Risk Project; application to be submitted to V.D.E.C.)

- Stormwater Discharge General Permit 3-9015 (application to be submitted to V.D.E.C.)
- N.P.D.E.S. Discharge Permit (application submitted to V.D.E.C.)

The R.F.C.S. is subject to an existing Vermont Wastewater and Potable Water Supply Permit #WW-5-6093, issued by V.D.G.P.D. on July 6, 2012. This permit allows sanitary discharge of up to 120 gallons per day via the existing on-Site septic system. V.F.W.D. will seek a modification to Permit #WW-5-6093 to account the addition of an A.D.A.-compliant restroom and associated plumbing.

Surface water runoff will increase due to an increase in impervious area over the current level of development. Water quality will be protected from undue adverse effects due to stormwater runoff through an E.P.S.C. and B.M.P.s will be implemented through Stormwater Discharge permits issued by the V.D.E.C. A stormwater management plan with associated B.M.P.s, to be approved through a Vermont Stormwater Construction General Permit (Moderate Risk) and a Vermont Stormwater Discharge Permit, will address and mitigate potential water quality effects during construction and post-construction, respectively. A Stormwater Construction Permit Application, including the E.P.S.C., has been submitted for the Proposed Action and is under review by V.D.E.C.

Discharge of treated fish culture water (treated effluent) will be subject to volumes and contaminant concentrations specified in an individual permit to be issued by V.D.E.C. under the N.P.D.E.S. program (“N.P.D.E.S. Discharge Permit”). Effluent limits for the Site were issued by V.D.E.C. for formalin, total phosphorous, and total nitrogen, in a letter to V.F.W.D. dated June 12, 2012. The letter further indicated that downstream water quality monitoring would be required consistent with V.D.E.C. monitoring protocols. V.F.W.D. has applied for a N.P.D.E.S. Discharge Permit for the Proposed Action. The permit application is currently under review by V.D.G.P.D. To achieve the effluent limits required under the N.P.D.E.S. Discharge Permit, the Proposed Action will include the following permanent treatment measures:

- Influent water treatment, including filtration and ultraviolet disinfection, is anticipated to reduce the need for fishery chemicals.
- Use of covered, above-ground fish culture tanks will reduce is anticipated to reduce the need for fishery chemicals.
- Effluent pond for chemical treatment of fishery chemicals through settling and separation, as well as photo-degradation via exposure to sunlight.
- Clarifier tank to separate sludge from effluent water.

The above-listed effluent treatment measures are designed to achieve or exceed the discharge limits stated in the June 12, 2012 letter from V.D.E.C. to V.F.W.D. Effluent discharged to the receiving water body (White River Third Branch) from the R.F.C.S. will be subject to periodic water quality monitoring and reporting to V.D.E.C., in order to verify

that the treatment measures are achieving the contaminant concentration limits required under the forthcoming N.P.D.E.S. Discharge Permit.

Fish wastes separated from the effluent water at the Site will be removed from the Site for beneficial use as fertilizer. Land application of concentrated fish wastes will be subject to the Indirect Discharge Rules, Chapter 14 of the Environmental Protection Rules issued by V.D.E.C. An Indirect Discharge Permit will be sought from V.D.G.P.D. under these rules once the actual waste volumes are known and a suitable receiving facility, such as a farm, can be identified. The Indirect Discharge Permit will therefore be sought after construction is completed, and is not considered part of the Proposed Action.

Based on all the factors considered, through coordination with regulatory agencies, and compliance with required permits, this undertaking will only result in minor effects on potable water, wastewater and stormwater.

3.6 Potential Hazards

3.6.1 Air Quality

3.6.1.1 Affected Environment

The Clean Air Act (C.A.A.) of 1970 (42 USC 7401–7661 [2009]) is a comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. The act authorized the U.S.E.P.A. to establish National Ambient Air Quality Standards (N.A.A.Q.S.) to protect public health and the environment.

Air quality in Vermont is regulated by the Vermont Air Quality and Climate Division (V.A.Q.C.) of the V.D.E.C. V.A.Q.C. enforces both state and federal air quality regulations including the Clean Air Act of 1990 and Amendments, and the Vermont Air Pollution Control Regulations (V.D.E.C., 2011a). Subchapter IV of the regulations sets out the requirements for Classification of Air Contaminant Sources, and source registration and operating permits and Subchapter V sets forth requirements for Review of New Contaminant Sources. Section 5-401 of the Regulations classifies fuel burning installations based on the fuel source (V.D.E.C., 2011a).

The U.S.E.P.A has established the National Ambient Air Quality Standards (N.A.A.Q.S.) to protect the public health with “an adequate margin of safety.” Additionally, N.A.A.Q.S serve to protect the environment and public welfare. If the concentration of one or more criteria pollutants in a geographic area is found to exceed the regulated or ‘threshold’ level for one or more of the N.A.A.Q.S., the area may be classified as a nonattainment area. Areas with concentrations of criteria pollutants that are below the levels established by the N.A.A.Q.S. are considered either attainment or unclassifiable areas.

The N.A.A.Q.S. include standards for six criteria air pollutants: lead, nitrogen dioxide, ozone, carbon monoxide, sulfur dioxide, and particulate matter (including both particulate matter less than 10 micrometers in diameter [PM10], and fine particulate matter less than 2.5 micrometers in diameter [PM2.5]). All Vermont counties are currently in attainment for all 6 criteria pollutants including the Site.

3.6.1.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have a negligible effect on air quality.

ALTERNATIVE 2: PROPOSED ACTION – The Site is located within an air quality attainment area. Due to the small volume of process chemicals, including formalin and chloramine-T, used at the Site, the potential for chemical emissions to affect air quality is considered very low. No point source discharge of fishery chemicals to ambient air is proposed. Heat for the existing and proposed R.F.C.S. buildings will be provided by propane-fueled heaters, as is the case currently.

Dust associated with construction will be controlled in accordance with the Vermont Stormwater General Permit. Methods to control dust include provision for a stabilized construction entrance and dust control using water or calcium chloride. Soil disturbance at any one time will be minimized in accordance with the Erosion Prevention and Sediment Control Plan of the Stormwater Permit.

During construction there may be some minimal temporary effects on air quality produced by large construction vehicles, such as dump trucks, backhoes, and loaders. Effects will be minimized by the temporary nature of the construction and by the fact that there is a very low population density in the vicinity of the R.F.C.S.

Based on all the factors considered and compliance with any required permits and regulations, this undertaking will only result in minor effects to air quality.

3.6.2 Noise

3.6.2.1 Affected Environment

Only four homes are located within 0.25 mile of the R.F.C.S. All of these homes are screened to some degree from the Site by wooded land.

3.6.2.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have a negligible effect on ambient noise at the Site and its general vicinity.

ALTERNATIVE 2: PROPOSED ACTION – The U.S.E.P.A. has developed federal noise-emission standards, identifying major sources of noise and determining appropriate noise levels for activities that would infringe on public health and welfare. The “Levels Document” is the standard reference in the field of environmental noise assessment. U.S.E.P.A. identifies a 24-hour exposure level of 70 decibels as the level of environmental noise which will prevent any measurable hearing loss over a lifetime.

Levels of 55 decibels outdoors and 45 decibels indoors are identified as “preventing activity interference and annoyance”. U.S. Department of Transportation has established acceptable noise levels and ranges for construction equipment. Construction activities would temporarily increase noise levels in the vicinity of R.F.C.S. Regardless, the Site is sufficiently removed from residential properties to reduce noise levels to acceptable standards and not for extended periods. Wooded land between the R.F.C.S. and nearby residences would also be expected to dampen the anticipated construction noise.

Construction activities would temporarily increase noise levels in the vicinity of R.F.C.S. The level of noise would be minimized by ensuring construction equipment is maintained and follows all U.S.E.P.A and U.S. Department of Transportation noise regulations and will be well below U.S.E.P.A. identified 24-hour exposure level of 70 decibels. Noise generated from the ongoing operations of the proposed facility will be associated primarily with standard air handling equipment, pumps, filters, and disinfection equipment. Many of these sources exist today, or have historically existed at the Site. New equipment with the potential to produce noise will be located within buildings that will serve to limit noise emission.

Based on all the factors considered, this undertaking will only result in minor effects, which are temporary related to construction, in regard to noise.

3.6.3 Asbestos, Structural Debris, and Fuel Tanks

3.6.3.1 Affected Environment

The Vermont Asbestos Rules require an asbestos inspection before any building demolition to determine if there are any asbestos containing materials present (18 V.S.A. Chapter 26). If asbestos containing materials are present, contact with Vermont Department of Health will occur per (V.S.A Title 18, Chapter 26). Building demolition materials must be disposed of according to the Vermont Solid Waste Rules (V.D.E.C., 2012c). Underground storage tanks are regulated by the Vermont Waste Management and Prevention Division in accordance with the Vermont Underground Storage Tank Rules (V.D.E.C., 2011b). Aboveground tanks for diesel fuel and process materials, such as nitrogen and argon, are regulated by the Vermont Division of Fire Safety (V.D.F.S.).

3.6.3.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Under the No Action Alternative, the effects from asbestos, structural debris, or fuel tanks would be negligible.

ALTERNATIVE 2: PROPOSED ACTION – There are no buildings planned for demolition at the Site; thus, no asbestos inspection is required.

Regarding structural debris, demolition will be limited to concrete and metal structures associated with the former ponds and raceways, as well as vegetation, soil and ledge. V.F.W.D. has required that reusable demolition debris, particularly wood, will be salvaged for reuse on-Site or off-Site. Concrete debris will likely be transported off-Site and recycled

as aggregate. Any material to be disposed of in a landfill will be disposed of in accordance with federal and Vermont laws and regulations.

No underground fuel storage tanks are located on the Site, and none are planned for installation as part of the Proposed Alternative. The existing aboveground propane tanks used for heating at the Site will remain in place. Propane tanks are not regulated by V.W.M.D.

The R.F.C.S. design also includes an aboveground “belly” diesel fuel tank (incorporated into generator structure) for a new pad-mounted generator. All belly tanks are required to conform to Vermont Division of Fire Safety (V.D.F.S.) regulations and V.W.M.D. above-ground storage tank regulations. A storage and use plan will be filed with and approved by Vermont’s Division of Fire Safety (V.D.F.S.) in accordance with Vermont law.

A review of V.W.M.D. files shows that the following underground storage tanks (U.S.T.) were removed from the R.F.C.S. property on June 27, 1997:

- U.S.T. #1: 2,000 gallon gasoline, single-walled steel construction, more than 20 years old (in 1997), located on the north side of the garage building, approximately 150 north of the Hatchery Building
- U.S.T. #2: 1,000 gallon fuel oil (No. 2 heating oil), single-walled steel construction, more than 20 years old (in 1997), located off the northeast corner of the Hatchery Building
- U.S.T. #3: 1,000 gallon fuel oil (No. 2 heating oil), single-walled steel construction, more than 20 years old (in 1997), located off the southeast corner of the Biological Laboratory Building (south of the R.F.C.S. facility)

The Vermont N.R.A. database shows one state hazardous waste site at the R.F.C.S. (Appendix A-23), resulting from petroleum contamination identified during the removal of U.S.T. #2, listed above. Files maintained by V.W.M.D. for the petroleum release were reviewed and are cited herein. At the time of the removal, both of the heating oil tanks (U.S.T. #2 and U.S.T. #3) had been out of service for at least five years, as the Site was using propane for heat.

In a report to V.M.W.D. dated July 1, 1997, a representative of Marin Environmental, Inc., who observed the removal of the U.S.T.s documented the soil and groundwater conditions he observed during the removal activities (Marin, 1997). The report states that no petroleum contamination was observed in soil or groundwater during the removal of U.S.T. #1 or U.S.T. #3. There was however a strong petroleum odor, as well as visual and other evidence of petroleum contamination observed during the removal of U.S.T. #2. Specifically, it was noted that soils around the fill pipe of U.S.T. #2 were stained with petroleum that appeared to have migrated down to the water table at about six feet below the ground surface, in the southwest corner of the tank cavity. There was a petroleum sheen noted on groundwater in the tank cavity. A monitoring well was installed in the tank cavity as it was backfilled. No petroleum-contaminated soil was removed from the Site. Field

screening was also performed on the contaminated soils using a Photoionization Detector instrument. The field screening instrument produced readings that exceeded the V.W.M.D. standard, indicating that further investigation was needed.

Based on the results presented in the Marin Environmental report, V.W.M.D. required an Initial Site Investigation to evaluate the extent and potential impact of the petroleum contamination to the Site and surrounding areas. The results of that investigation were documented in a June 25, 1998 report by Griffin International, Inc. (Griffin, 1998). The report documented the collection of water samples from the Site's drinking water supply well, from the stream flowing between the trout ponds, and from four monitoring wells including the well installed in the former U.S.T. #2 cavity. The results of the groundwater sampling indicated no detectable levels of petroleum compounds. The report concluded that the petroleum contamination was limited to the "direct vicinity" of the former U.S.T. #2, adjacent to the Hatchery Building, and that what petroleum remained in the ground was expected to degrade naturally over time.

Based on the results of the Initial Site Investigation, V.W.M.D. issued a Site Management Activities Completed (S.M.A.C.) letter on July 6, 1998, stating that no further work was required to address the petroleum release (V.D.E.C., 1998). Based on the information contained in the available files summarized here, the release of petroleum from the former U.S.T. #2 has been addressed to the satisfaction of the regulatory agency responsible for overseeing the response actions (V.W.M.D.). No impacts to groundwater were identified. Furthermore, the location of the release near the Hatchery Building will not be subject to grading as part of the Proposed Alternative. For all of these reasons, the petroleum release is unlikely to have an adverse effect on the Site.

Based on all the factors considered, through coordination with regulatory agencies, and compliance with required permits, this undertaking will only result in minor effects in regard to asbestos, structural debris and fuel tanks.

3.6.4 Hazardous Waste

3.6.4.1 Affected Environment

Hazardous materials are regulated by both the federal and state governments. The two main laws that pertain to hazardous materials are Comprehensive Environmental Response, Compensation, and Liability Act (C.E.R.C.L.A) and Resource Conservation and Recovery Act (R.C.R.A.).

C.E.R.C.L.A was enacted in 1980 and amended in 1986. It was created to regulate activity on closed and abandoned hazardous waste sites, determine liability for releases of hazardous materials at abandoned sites, and provide a funding mechanism for the cleanup of hazardous waste sites. C.E.R.C.L.A also established the National Priority List (N.P.L.), which is a U.S. Environmental Protection Agency (U.S.E.P.A.) database of sites with known or suspected releases of hazardous materials (U.S.E.P.A., 2016a). R.C.R.A. was enacted in 1976 and amended in 1984 and regulates the generation, transportation, storage, and disposal of hazardous materials. It also set up a framework for the designation and

classification of hazardous materials (U.S.E.P.A., 2016b). In Vermont, R.C.R.A. generators are regulated by the V.W.M.D.

3.6.4.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – Under the No Action Alternative negligible effects are anticipated from hazardous materials.

ALTERNATIVE 2: PROPOSED ACTION – A review of the U.S.E.P.A. Superfund website and Superfund National Priorities List found no C.E.R.C.L.A hazardous waste sites in the Town of Roxbury (U.S.E.P.A., 2016a).

The R.F.C.S. stores and uses the following hazardous materials:

- Formalin, a buffered solution of formaldehyde and methanol, is used to control fish parasites and is stored in a 55-gallon polyethylene drum in the Hatchery Building.
- Chloramine-T, a biocide used to prevent bacterial diseases in fish, and is stored as a powder in a 5-gallon pail in the Hatchery Building.
- Two tanks of argon gas used for aluminum welding are stored in the Shop Building located north of the Hatchery Building.
- Small-volume (i.e. less than 1 gallon) containers of WD-40 lubricating oil, paints, polyvinyl chloride primer, antifreeze, insect killer (Raid®) and air-compressor oil are stored in the Shop Building.
- Diesel fuel and gasoline for R.F.C.S. maintenance equipment is stored in plastic containers with capacities up to 10 gallons, inside the Garage Building at the north end of the Site.

Due to the small volumes of petroleum and hazardous materials used at the Site, all used petroleum products and hazardous materials are brought to local retail locations (such as hardware stores or equipment maintenance facilities) for disposal. Fishery chemicals like formalin and chloramine-T are stored inside the Hatchery Building, within an area with spill containment provided by a raised concrete berm. All of the formalin and chloramine-T is used up on-Site.

Under the Proposed Alternative, aluminum sulfate to be used for effluent treatment will be stored in the Effluent Treatment Building within a spill containment platform.

Based on all the factors considered, through coordination with regulatory agencies and compliance with required permits, this undertaking will only result in minor effects in regard to hazardous waste.

3.6.5 Seismic Safety

3.6.5.1 Affected Environment

E.O. 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, directs federal agencies to incorporate cost-effective seismic safety measures in all new buildings that are constructed, leased, assisted, or regulated by the federal government.

3.6.5.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The effects to seismic safety are negligible under the No Action Alternative.

ALTERNATIVE 2: PROPOSED ACTION – The area around Roxbury, Vermont, has relatively low risk for damaging earthquakes (U.S.G.S., 2014), so concern about seismic activity for the R.F.C.S. is low. There will be negligible effects in regard to seismic safety.

3.7 Environmental Justice

3.7.1 Affected Environment

E.O. 12898 is the Executive Order regarding Environmental Justice in Minority Populations. This requires federal agencies, departments, and their contractors to consider any potentially disproportionate human health or environmental risks to minority or low income populations posed by their activities, policies, or programs.

3.7.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The effects to environmental justice are negligible under the No Action Alternative.

ALTERNATIVE 2: PROPOSED ACTION – Based on the 2010 Census American Community Survey information provided by the U.S.E.P.A. Environmental Justice Screening Tool (EJSCREEN), the population within 3.0 miles of the Site is 99% white and 1% American Indian (Appendix A-24). 82% of the population is 18 years of age or older. 11% of the population was below the federal poverty level.

According to the 2014 Roxbury Town Plan, Roxbury had a total population of 691 and a population density of 17 persons per square mile, based on 2010 U.S. Census data. Most of the Town's recent population growth has occurred in the 45-65 year old categories, reflecting an overall aging of the population. The aging population is a trend especially in the smaller communities in the State of Vermont. The median family income in Roxbury in 2010 was \$39,167, which is below the Washington County (\$57,163) value. The gap in median family income between Roxbury and the average Washington County community grew between 2000 and 2010. This trend is partially counterbalanced by the relatively low cost of living in Roxbury compared to other communities in region, but nonetheless provides evidence of economic distress. The census data further indicate that, despite

median income levels below the regional average, Roxbury has a mixture of occupation categories and “unusually high percentages” of both highly- and minimally-educated residents, and Roxbury has become a self-described “bedroom community” with only 23% of Town employed residents working in Town.

As a State property, the rebuilding of the R.F.C.S. will not directly contribute to an increase in the municipal tax base. Instead, the economic impact of the Proposed Action will be the return of tourist visitation to levels at least equal to those seen prior to Irene, and the ancillary jobs that may come from serving those visitors in the local community. Due to the small population size of the Town, the majority of construction workers are unlikely to be residents of Roxbury. However, for a community of only 691 persons, the potential impact of even minimal construction employment, along with a return of an estimated 2,100 visitors per year, are expected to have a proportionally greater effect on the local economy.

The rebuilding of the R.F.C.S. represents new construction on the existing R.F.C.S. property, and therefore will not result in displacement of existing residents or workers. The Proposed Action will not have a disproportionate effect on minority or low-income populations; there will be no effects to existing homes, and the proposed facility is likely to result a small increase, or at least no negative effect, on employment within the town. As such, the project will have a negligible effect on environmental justice.

3.8 Climate Change

3.8.1 Affected Environment

E.O. 13653, “Preparing the United States for the Impacts of Climate Change”, sets standards to prepare the United States for the impacts of climate change and supporting climate-resilient investment. According to draft C.E.Q. guidance for considering climate change in environmental reviews, agencies should consider the following when addressing climate change: (1) the potential effects of a proposed action on climate change as indicated by its greenhouse gas emissions; and (2) the implications of climate change for the environmental effects of a proposed action. E.O. 13693 promotes federal leadership in sustainability and greenhouse gas reductions.

The 2016 Vermont State Agency Energy Plan (B.G.S., 2016) establishes a goal of meeting 35% of the state government’s energy needs—following the reduction of total energy consumption goals outlined in the plan—from renewable sources by 2025. The plan also recommends that state agencies increase the use of modern wood heating with biomass.

3.8.2 Environmental Consequences

ALTERNATIVE 1: NO ACTION – The No Action Alternative is anticipated to have a negligible effect on climate change.

ALTERNATIVE 2: PROPOSED ACTION – The Proposed Alternative design is currently under review by Efficiency Vermont, Vermont’s statewide energy efficiency utility. This review is part of the typical process that B.G.S. utilizes to meet their goals under the 2016

Vermont State Agency Energy Plan. The objective of the review is to identify potential energy savings and implement those changes to the project design where feasible.

The feasibility of placing photovoltaic solar panels on R.F.C.S. building, both existing and planned, was evaluated during the design process. Due to the location of the R.F.C.S. in a deep, narrow valley, the total solar insolation was insufficient to justify installing solar photovoltaic panels. However, a solar photovoltaic project is current planned for the Salisbury Fish Culture Station operated by V.F.W.D. The Salisbury project will be used to offset carbon emissions generated by the increase in grid electricity use at the R.F.C.S. under the Proposed Alternative.

Based on the projected slight increase to energy use, the Proposed Alternative will likely have minor effects to climate change.

3.9 Cumulative Effects

Cumulative effects are defined by the C.E.Q. in 40 C.F.R. 1508.7 as:

“Cumulative effects are those that result from incremental effects of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

The C.E.Q. states that cumulative effects should not be limited to those resulting from actual proposals, but should include effects from actions that are reasonably foreseeable. Cumulative effect analysis captures the effects that result from the Proposed Action(s) in combination with the effects of other actions in the same geographic area. N.E.P.A. looks to analysis of cumulative environmental effects of a Proposed Action, or set of actions, on resources that may often be manifested only at the cumulative level, such as traffic congestion, air quality, noise, biological resources, cultural resources, socioeconomic conditions, utility system capacities, and others.

3.9.1 Affected Environment

Projects that have recently been constructed or are currently under construction or that have been identified as reasonably foreseeable include the following:

- VT Route 12A already achieves 100-year flood resiliency. Planned improvements include a re-paving project planned for 2016 using majority federal funding.

No other federal or federally funded projects are planned or envisioned in proximity to the proposed project within the next 5 years.

3.9.2 Environmental Consequences

PROTECTION FROM FUTURE FLOOD EVENTS – Although the Site is not located within the 100-year floodplain, recent flooding events and the 2014 H.H.S. (Ahearn and Lombard, 2014) have demonstrated that the Site is located within the 500-year floodplain under scenarios where Flint Brook diverges from its channel upstream of the Site. In fact,

flood events in 1998 and 2006, prior to Tropical Storm Irene, caused significant damage to the Site. The damage caused by recent flood events clearly demonstrates the need to increase the resiliency of the R.F.C.S. to flood events between the 100-year and 500-year level. To accomplish this task the design of the Proposed Action, the rebuilding of the R.F.C.S. on the existing Site, includes the following upgrades to increase flood resiliency:

- The floor slabs of the proposed Upper and Lower Tank Pavilions will be raised about 3-5 feet above the existing ground surface, placing them above the estimated maximum level of floodwaters experienced during Topical Storm Irene. Two pavilions are proposed so that water leaving the Upper Pavilion tanks water can be re-used in the Lower Pavilion tanks, thereby reducing the demand on the natural water supply by about 40%. To reduce energy consumption in the recirculation system, the proposed base elevation of the Lower Pavilion is about five feet below that of the Upper Pavilion to maximize gravity flow.
- The proposed Upper and Lower Tank Pavilions will be anchored into a thick layer of compacted structural fill overlying bedrock, providing a stable base designed to resist undermining by floodwaters.
- Stormwater generated by seasonal storm events will be diverted around the R.F.C.S. buildings via a drainage ditch and culverts to a detention pond, before being discharged into the White River Third Branch. Riprap will be installed in spillways and along steep slopes within the drainage system to minimize erosion by reducing the velocity of floodwaters.
- The new drainage system to be constructed as part of the Proposed Action is designed to promote infiltration and slower release of stormwater from seasonal rain events into the White River Third Branch.

SUMMARY OF RESOURCE EFFECTS – Most of the resource effects associated with the R.F.C.S. are negligible. Minor effects will be addressed through mitigation measures. Erosion prevention and sediment control will be accomplished through stormwater discharge B.M.P.s. Fuel tanks will comply with V.D.F.S. regulations. Storage, use and disposal of hazardous wastes will be minimal and is not anticipated to require a permit from V.W.M.D. Based on all the factors considered, through coordination with regulatory agencies and compliance with required permits, this undertaking will only result in minor effects in regard to cumulative effects.

4.0 AGENCY COORDINATION AND PERMITS

Coordination has been accomplished with the N.R.C.S., U.S.F.W.S., A.P.C.D., V.F.W.D., V.W.M.D., V.A.Q.C., V.D.F.S., D.H.P. Vermont G.I.S. data layers for prime agricultural soils, hazardous waste, mapped wetlands, floodplains and river corridors, waterways, rare, threatened and endangered species and wildlife habitat were reviewed.

All required state and local permits will be obtained for the project. A list of all the required permits identified to date is included in Appendix A-25. The facility must also meet all applicable state fire safety and occupational health and safety standards or requirements.

5.0 PUBLIC INVOLVEMENT

5.1 Public Meetings

A public meeting was held on January 21, 2014 at the Roxbury Town Hall. The meeting was attended by the Roxbury Selectboard, staff from V.F.W.D. and from the Vermont Division of Emergency Management and Homeland Security, and by members of the public. V.F.W.D. staff gave a presentation on the Proposed Alternative followed by a question and answer session with the meeting attendees. Notes from the meeting are included in the supporting documents (Appendix A-26). Members of the public present at the meeting asked questions on several topics; those related to the R.F.C.S. are paraphrased below along with answers:

1. Question: Has the State considered purchasing land north of the hatchery?
2. Question: Will the Proposed Action increase flooding on other properties? This question concerned property located east of the R.F.C.S., across VT Route 12A.

Question (1) above was addressed in Section 2.0 – Alternatives Considered. In summary, re-locating the R.F.C.S. was rejected due to the several unique aspects of the Site that make operation of the R.F.C.S. cost-effective. V.F.W.D. attempted to purchase the property immediately north of the R.F.C.S. in 2014 for hazard mitigation purposes. The property was instead sold to a private party.

Regarding question (2) above, the project representatives present referred to the H.H.S. study that was to be published later in 2014. The H.H.S. determined that, under existing conditions, the current Flint Brook flood wall provides protection to the R.F.C.S. from 10, 50, and 100-year flood events. For flood events with a less than a one-in-500 chance of occurring in a given year (in other words, a greater than 500-year flood event), the R.F.C.S. will be flooded. The effect of proposed design of the rebuilt R.F.C.S. on the 500-year inundation area was not addressed as part of the H.H.S. However, the property that was the subject of question #2 is a narrow parcel of land east of VT Route 12A along the White River Third Branch. This nearby property is generally located within the River Corridor and the 100-year floodplain of the White River Third Branch. Due to its location within the River Corridor and 100-year floodplain, this nearby property is expected to be inundated by flood events of higher frequency than those predicted to inundate the R.F.C.S. Therefore during a 500-year or greater flood event, the effects on this nearby property from

divergent flow from Flint Brook, if any, would be indistinguishable from effects due to the much greater discharge along the White River Third Branch.

According to V.F.W.D. staff present at the meeting, the public and Roxbury Selectboard were generally enthusiastic about the return of the R.F.C.S. that is a key amenity to local residents and an asset to the local economy.

5.2 FEMA Publication of Draft Environmental Assessment Notice and Request for Comment

Initial Public Notice of the availability of the Draft E.A. and request for comment will be publicized in the *Northfield News* and *Randolph Herald*, both weekly circulation newspapers, at the beginning of the 15-day notice period (Appendix B). The Draft E.A. will be available for public review on-line at F.E.M.A. (<http://www.fema.gov/resource-document-library>) and B.G.S. (<http://bgs.vermont.gov/facilities/forms>) websites and a hard copy will be available for public review at the Roxbury Town Clerk's Office located at 1664 Roxbury Road, Roxbury, VT 05669, (802) 485-7840. If no substantive comments are received through the appropriate means cited in the Initial Public Notice, the Draft E.A. will become the Final E.A. and the Initial Public Notice will serve as the Final Public Notice. Substantive comments will be addressed in the final document, as appropriate.

6.0 CONCLUSIONS

F.E.M.A will document its conclusions in this section when it publishes the Final E.A.

7.0 LIST OF PREPARERS

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Federal Emergency Management Agency (F.E.M.A.)
Region I, Environmental & Historic Preservation Office (R.1.E.H.P.)
99 High St., 6th Floor
Boston, MA 02110

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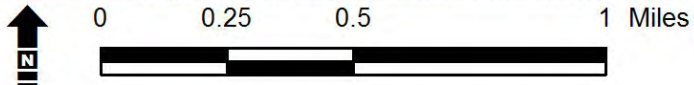
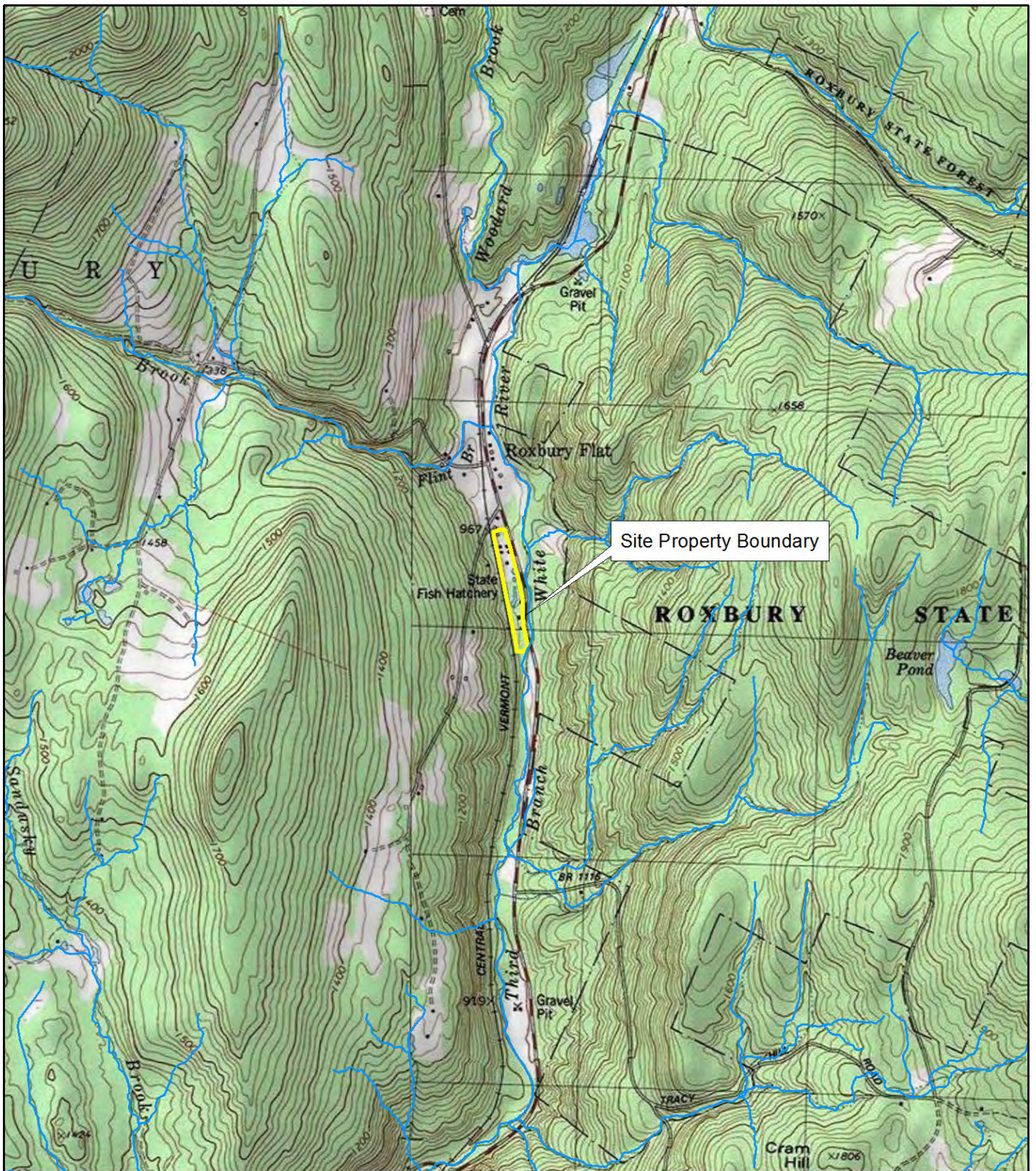
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FEMA Region 1 Environmental Assessment

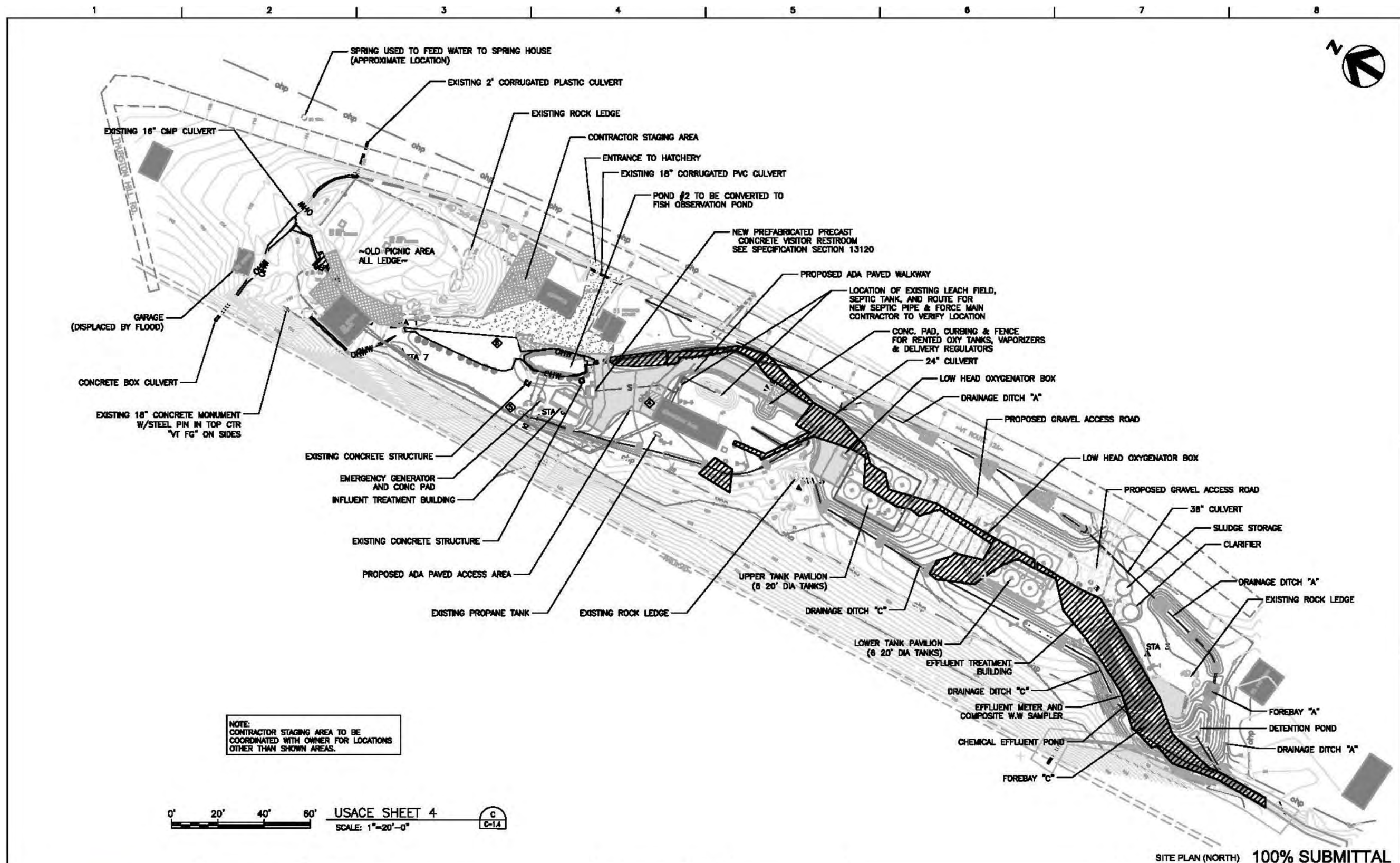
Roxbury Fish Culture Station

Appendix A: Supporting Documents

Appendix A-1: Site Location Map



SOURCES
(1) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
(2) USA Topo Basemap (ESRI)



NOTE:
CONTRACTOR STAGING AREA TO BE
COORDINATED WITH OWNER FOR LOCATIONS
OTHER THAN SHOWN AREAS.

0' 20' 40' 60' USACE SHEET 4
SCALE: 1"=20'-0" C-14

SITE PLAN (NORTH) 100% SUBMITTAL



ISSUE	DATE	DESCRIPTION
1	10-25-12	DESIGN DEVELOPMENT
2	01-24-13	99% SUBMITTAL
3	03-11-13	100% SUBMITTAL
4	11-17-18	MOVED PARKING AREA
5	11-17-18	REMOVED DITCH N OF WELL
6	11-28-18	REMOVED CONC. SIDEWALK

CIVIL	TERRA McPARLAND
STRUCTURAL	BRUCE BRADLEY
MECHANICAL	TROY TALMA
ELECTRICAL	RICK SCHMUDE
CAD	CHRIS STRATTON
PROJECT NUMBER	188734

RECONSTRUCTION AND IMPROVEMENTS
ROXBURY FISH CULTURE STATION
VERMONT FISH AND WILDLIFE DEPARTMENT

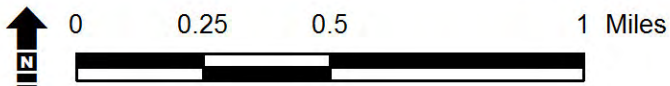
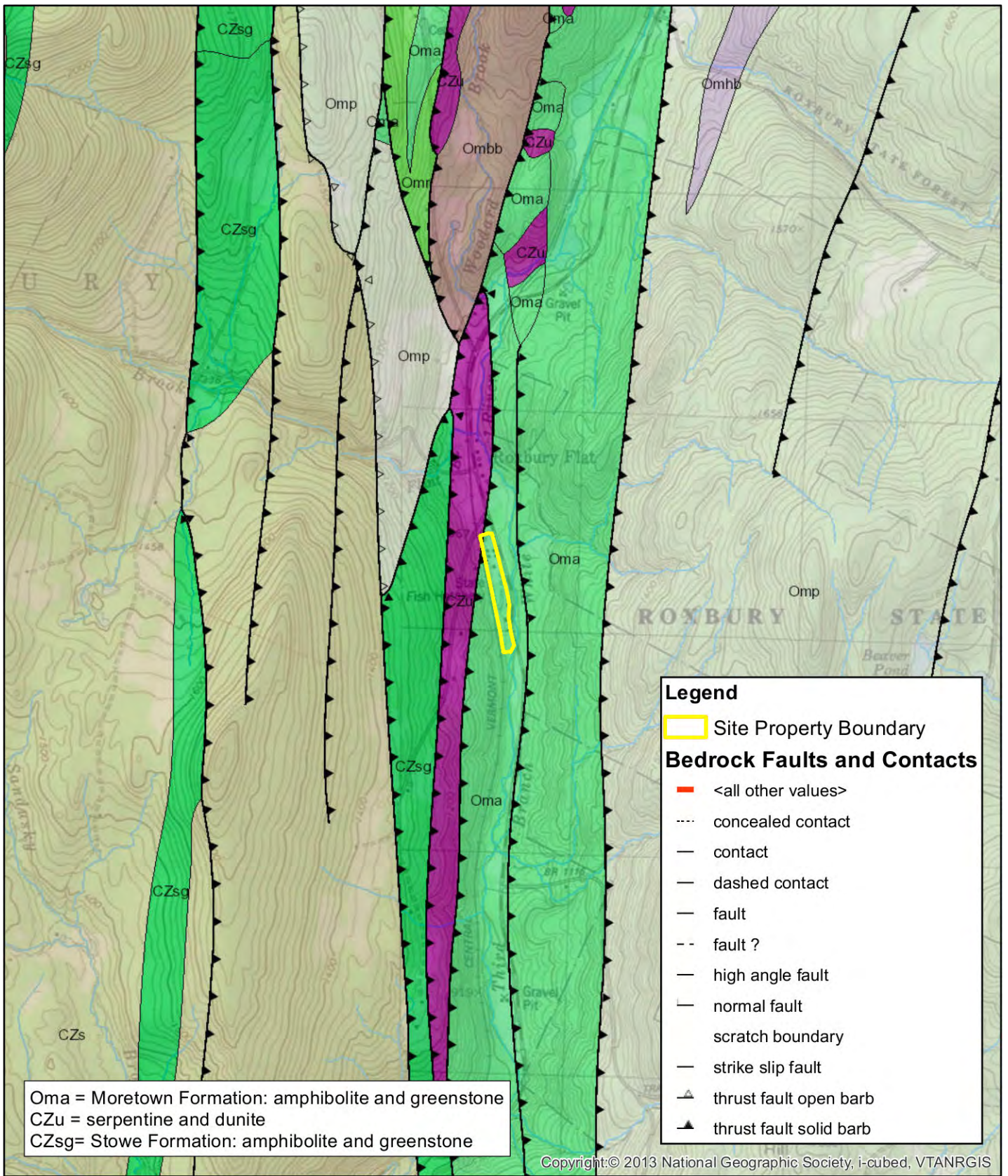
LEGEND

— OHW — OHW — ORDINARY HIGH WATER

▨ WETLANDS BOUNDARY

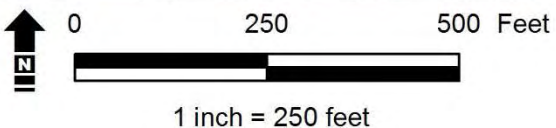
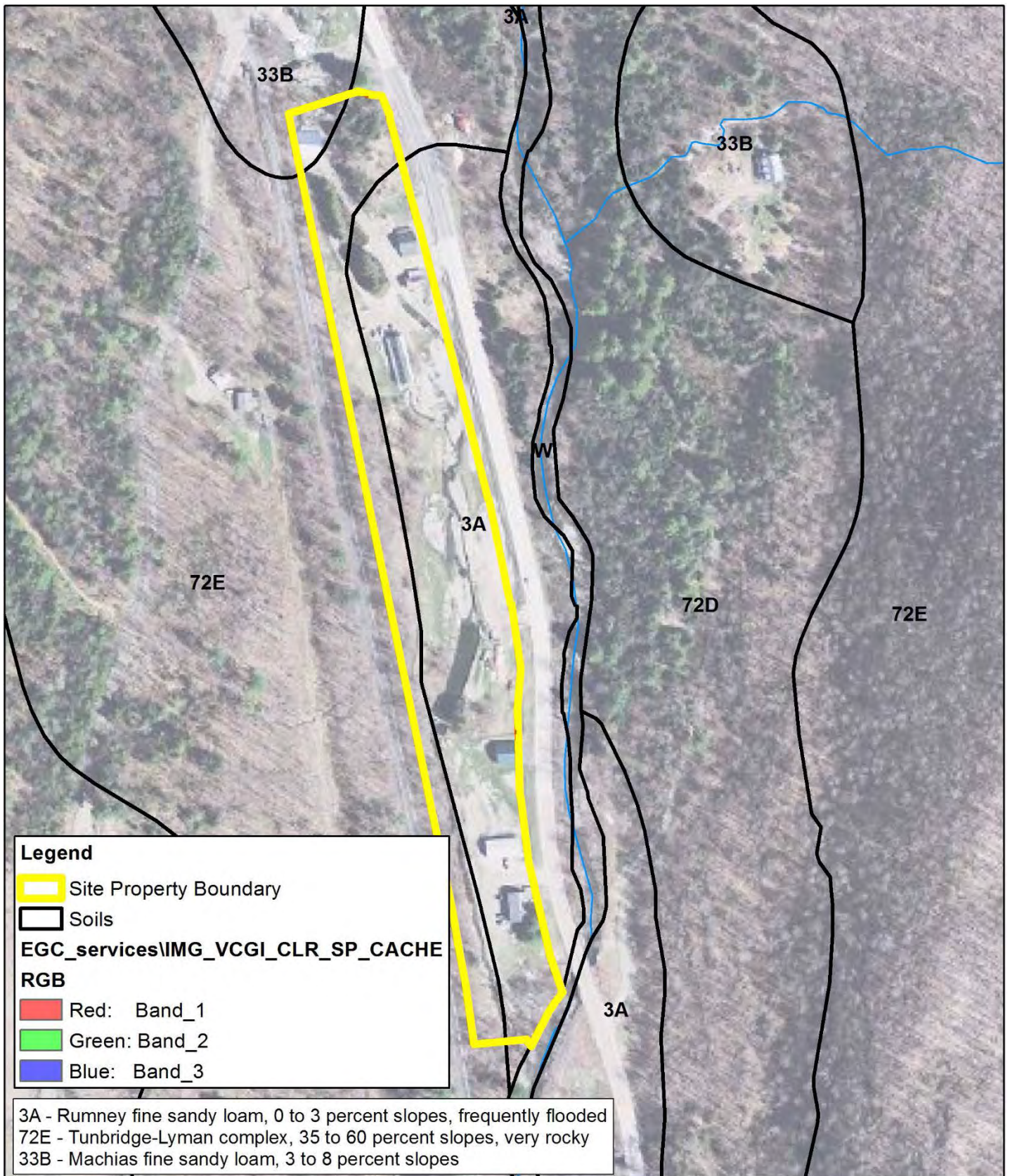
0' 1' 2' FILENAME SCALE N.T.S. SHEET C-14

Appendix A-4: N.R.A. Geology Map



SOURCES
 (1) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
 (2) USA Topo Basemap (ESRI)
 (3) Bedrock Geologic Map; Ratcliffe and others (2011) (VT Natural Resources Atlas)

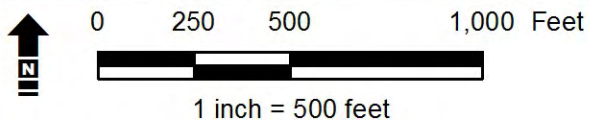
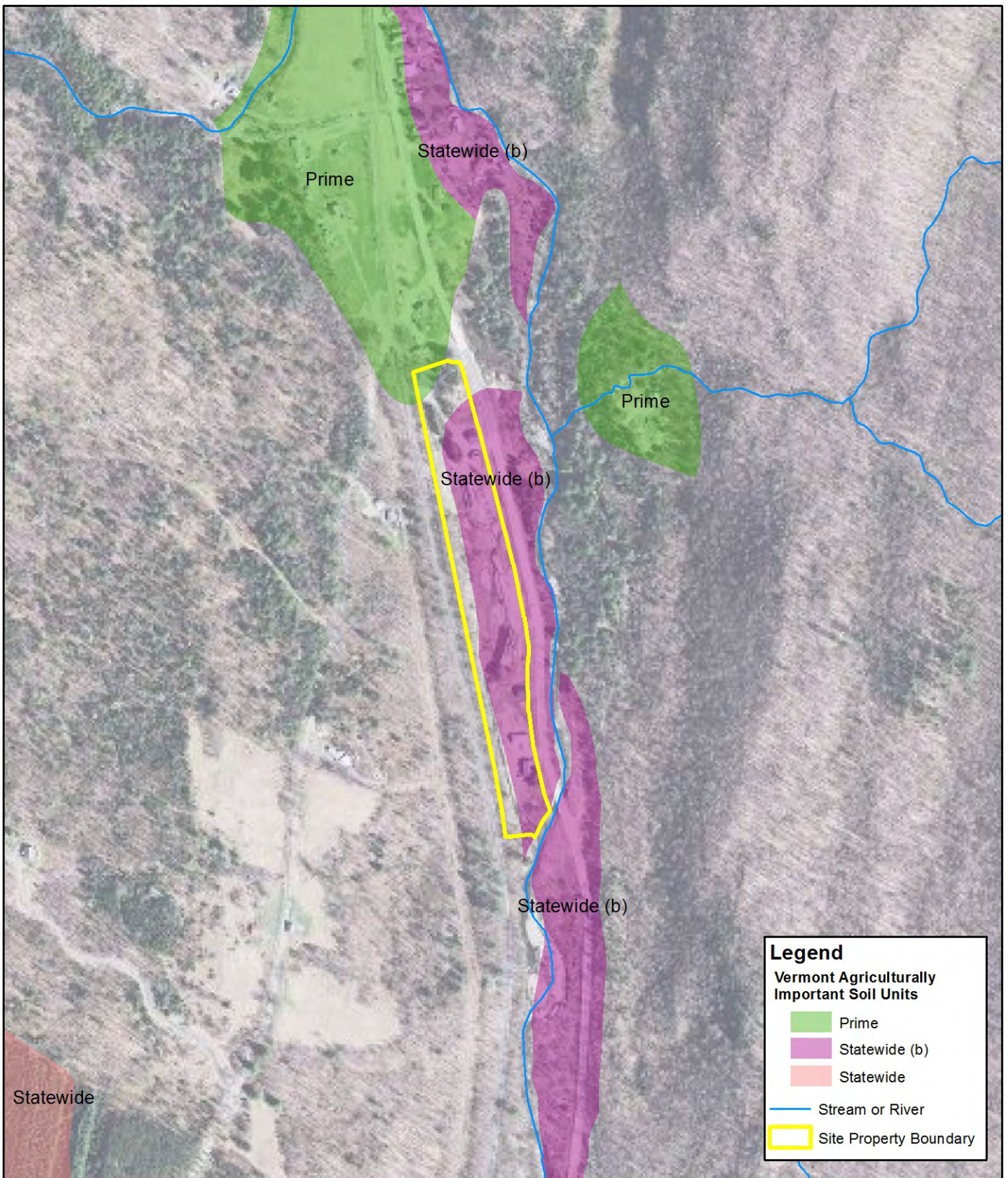
Appendix A-5: N.R.C.S. Soils Map



SOURCES

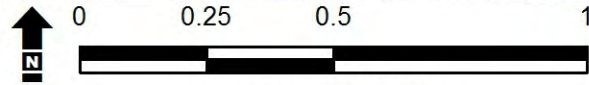
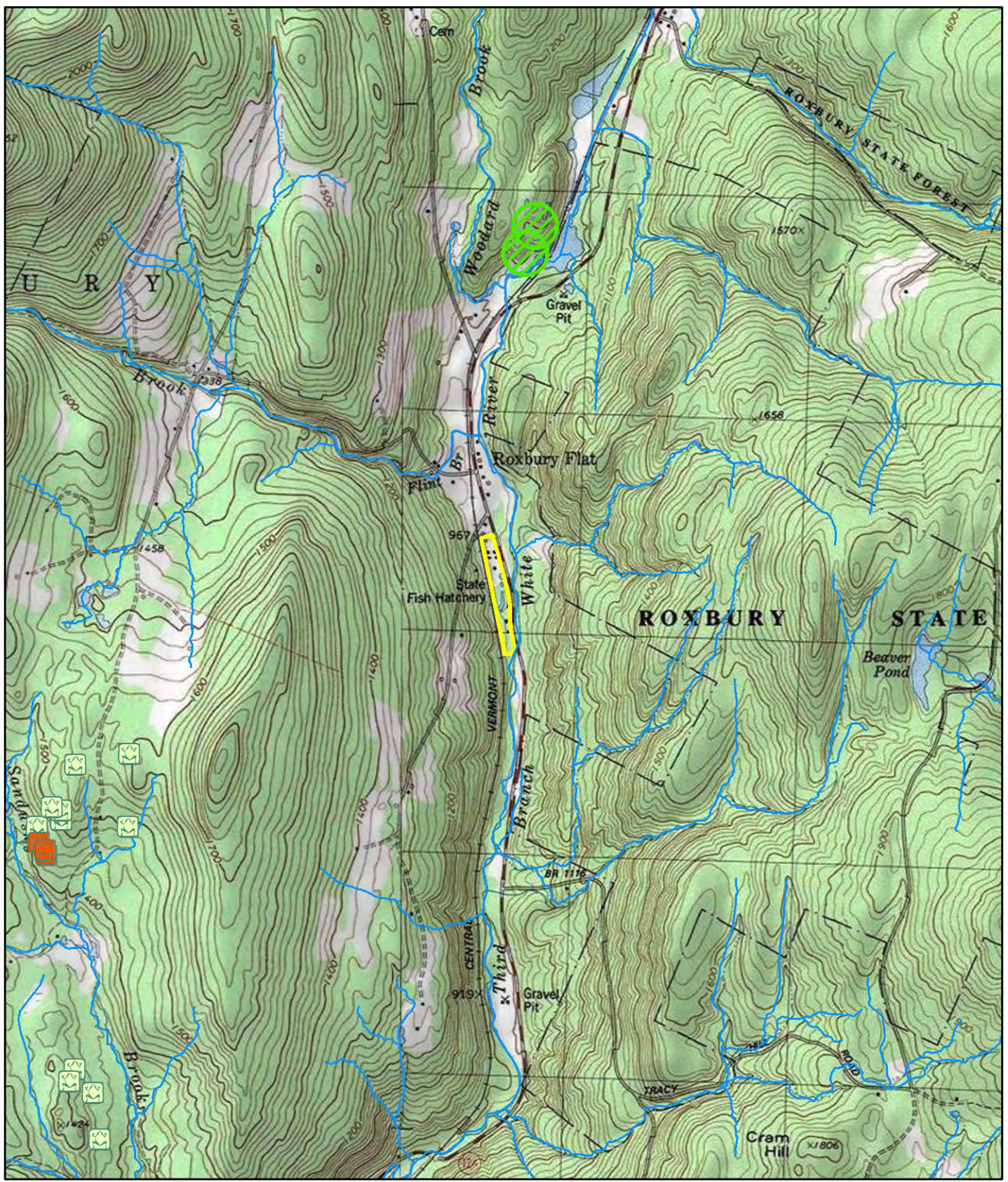
- (1) Town of Roxbury Assessor's Parcels, 1993 obtained from the VT Center for Geographic Information (VCGI)
- (2) Aerial imagery (VCGI). Imagery acquisition date 4/19/2012.
- (3) NRCS Soils Map (VT Natural Resources Atlas)

Appendix A-6: N.R.C.S. Prime Agricultural Soils Map



SOURCES
 (1) Aerial imagery obtained from the VT Center for Geographic Information (VCGI). Image acquisition date 4/19/2012.
 (2) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
 (3) Prime Agricultural Soils (VCGI)
 (4) National Hydrography Dataset (VCGI)

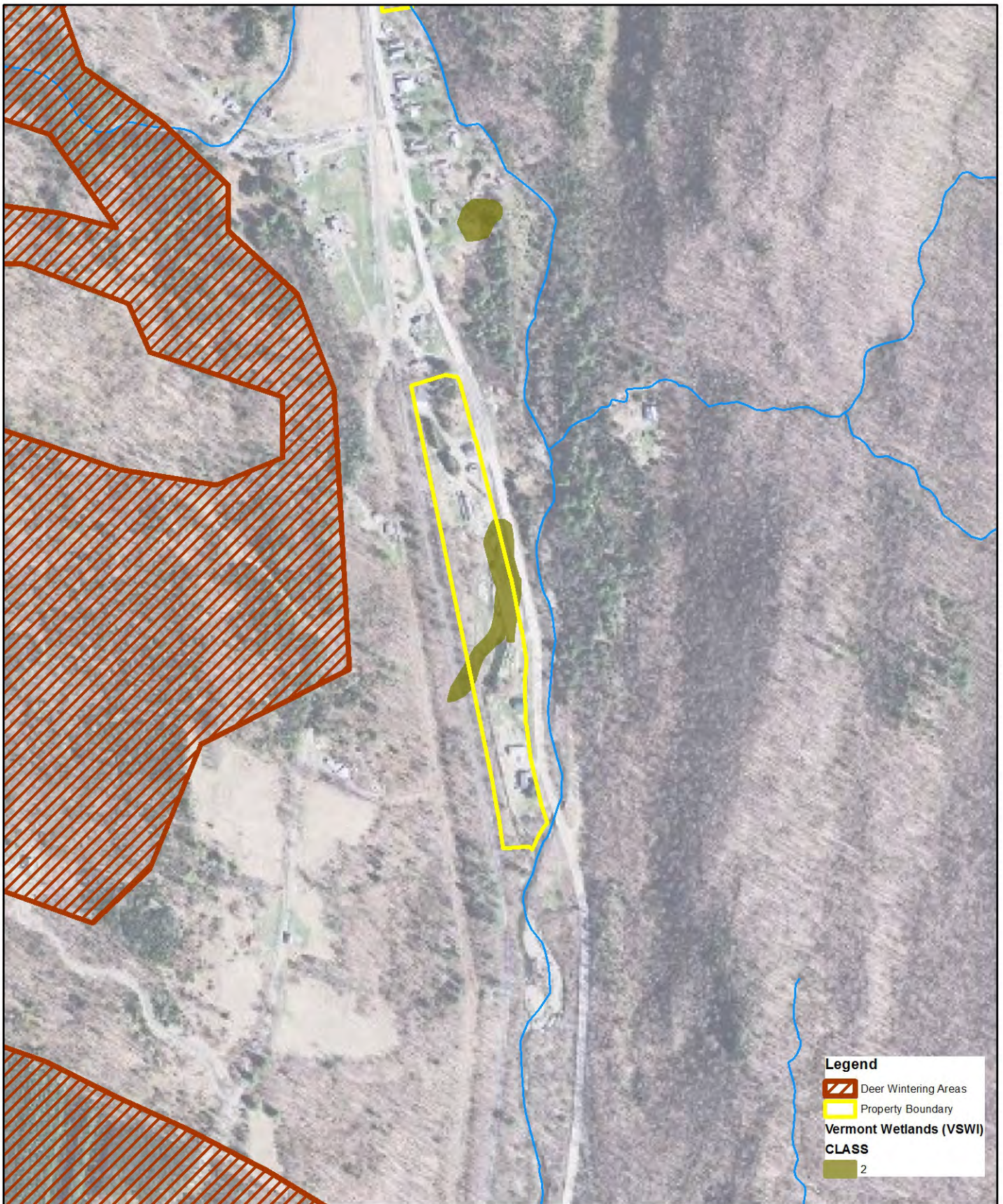
Appendix A-7: N.R.A. Plants and Animals Natural Communities of Concern Map



- Legend**
- Site Property Boundary
 - Rare, Threatened, and Endangered Species
 - Vernal Pools, Confirmed (green) or Unconfirmed (red)

SOURCES
 (1) Roxbury Assessor's Parcels, 1993 (VCGI); (2) USA Topo Basemap (ESRI);
 (3) VT Natural Resources Atlas

Appendix A-8: V.A.N.R. Deer Wintering Areas Map



SOURCES

- (1) Aerial imagery obtained from the VT Center for Geographic Information (VCGI).
- (2) National Wetlands Inventory (NWI) and VT Significant Wetlands Inventory (VSWI) data from VCGI
- (3) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
- (4) Deer Wintering Habitat (VCGI)

U.S. Fish & Wildlife Service

Roxbury Fish Culture Station

IPaC Trust Resources Report

Generated June 19, 2016 01:13 PM MDT, IPaC v3.0.7



This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

IPaC - Information for Planning and Conservation (<https://ecos.fws.gov/ipac/>): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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- Project Description.....1
- Endangered Species.....2
- Migratory Birds3
- Refuges & Hatcheries5
- Wetlands6

U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

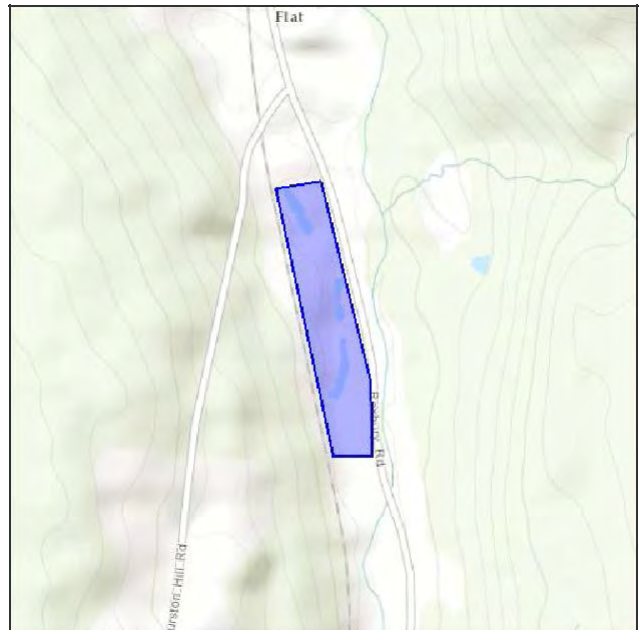
Roxbury Fish Culture Station

LOCATION

Washington County, Vermont

IPAC LINK

<https://ecos.fws.gov/ipac/project/BWXHE-ONJAF-HB7PU-HUZIY-75CG3U>



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[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 either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Mammals

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A0JE

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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>

Conservation measures for birds

<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

Year-round bird occurrence data

<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

American Bittern *Botaurus lentiginosus* Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3

Bald Eagle *Haliaeetus leucocephalus* Bird of conservation concern

Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Black-billed Cuckoo *Coccyzus erythrophthalmus* Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI

Canada Warbler *Wilsonia Canadensis* Bird of conservation concern

Season: Breeding

Common Tern *Sterna hirundo* Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09G

Olive-sided Flycatcher *Contopus cooperi* Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon *Falco peregrinus* Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Pied-billed Grebe *Podilymbus podiceps*

Bird of conservation concern

Season: Breeding

Short-eared Owl *Asio flammeus*

Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD

Willow Flycatcher *Empidonax traillii*

Bird of conservation concern

Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6

Wood Thrush *Hylocichla mustelina*

Bird of conservation concern

Season: Breeding

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location

Subject: RE: Northern Long-eared Bat Hibernacula in VT

From: Bennett, Alyssa [<mailto:Alyssa.Bennett@vermont.gov>]

Sent: Thursday, May 05, 2016 1:06 PM

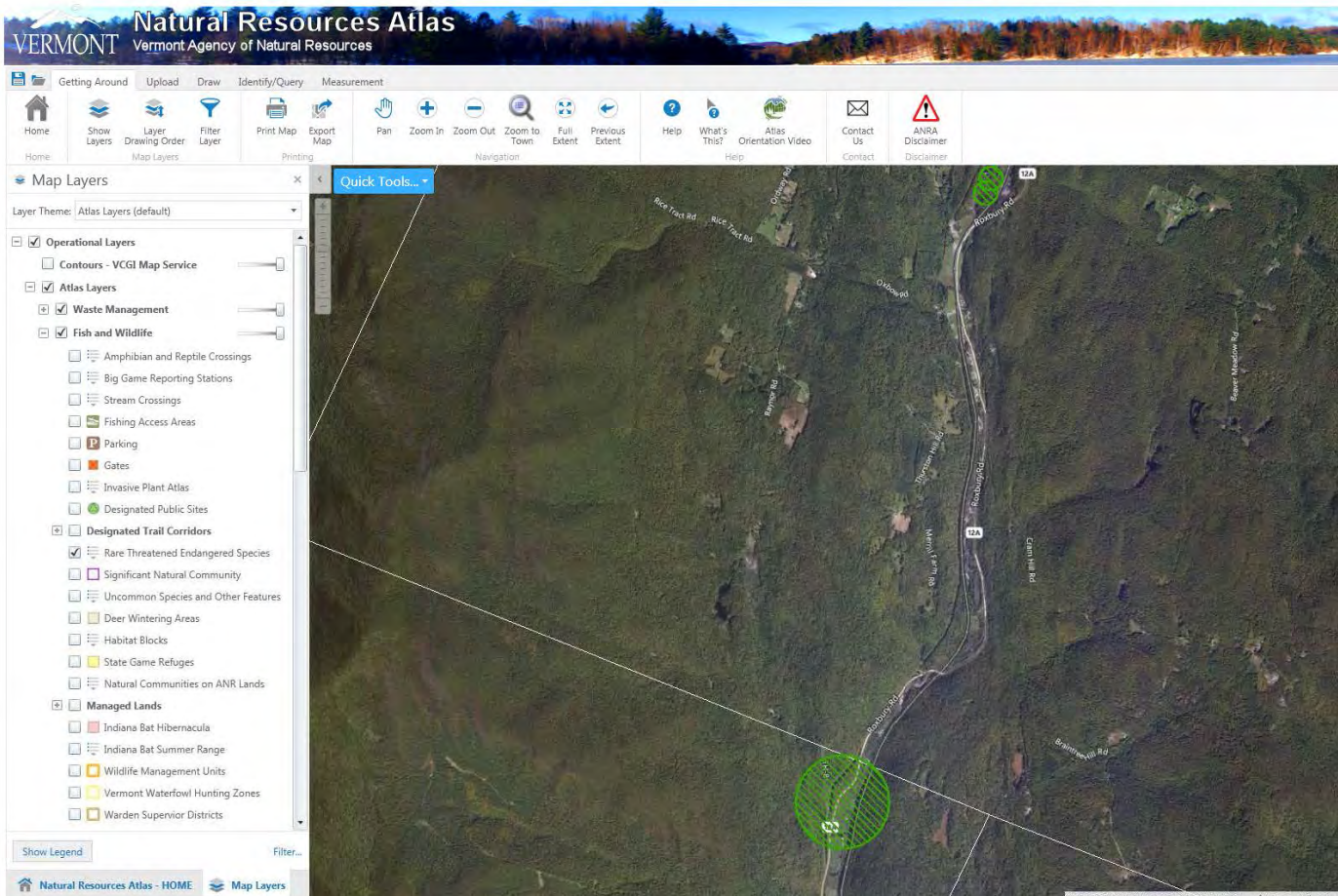
To: Tate, Marcus <Marcus.Tate@fema.dhs.gov>; Parren, Steve <Steve.Parren@vermont.gov>; Marshall, Everett <Everett.Marshall@vermont.gov>; Ferguson, Mark <Mark.Ferguson@vermont.gov>; Popp, Bob <Bob.Popp@vermont.gov>

Subject: RE: Northern Long-eared Bat Hibernacula in VT Hi Marcus,

The northern long-eared bat occurrences show up in the Atlas with 1 mile radius red circles around them when you turn on the Rare Threatened and Endangered Species layer on under the Fish and Wildlife submenu.

As you can see, there are no known occupied northern long-eared bat occurrences near the hatchery. Suitable habitat for this species is found statewide and their range is state-wide based on historic survey data so we consider this potential range for the species. However, the small amount of tree clearing indicated for this project is far below our threshold of concern for take. I believe you would indicate that this is a “May affect, but not likely to adversely affect” for the federal forms if you have to fill them out, but let me know if you need help. I am not sure what forms FEMA has to use.

Alyssa



Alyssa B. Bennett
Small Mammals Biologist

Vermont Fish & Wildlife Dept.
271 North Main Street, Suite 215
Rutland, VT 05701
Tel: 802-786-0098

e-mail: alyssa.bennett@vermont.gov
Help Vermont's Bats at <http://www.vtfishandwildlife.com>

From: Tate, Marcus [<mailto:Marcus.Tate@fema.dhs.gov>]

Sent: Thursday, May 05, 2016 12:30 PM

To: steve.perron@vermont.gov; Bennett, Alyssa <Alyssa.Bennett@vermont.gov>; Marshall, Everett <Everett.Marshall@vermont.gov>; Ferguson, Mark <Mark.Ferguson@vermont.gov>; Popp, Bob <Bob.Popp@vermont.gov>

Subject: Northern Long-eared Bat Hibernacula in VT

Good Afternoon,

I am an Environmental and Historic Preservation Manager with FEMA out of our Region 1 office in Boston, MA. We are currently reviewing a project that is to be partially funded by FEMA for the repair and redesign to the Fish Hatchery in the Town of Roxbury. I am trying to identify any known hibernacula and maternity roost trees for the Northern Long-eared Bat in this vicinity. Some states have mapping programs to help identify these locations, based on the link;

<http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

I checked the Natural Resource Atlas and did not see layers for the NLEB. Is it possible for someone to help me identify if there are any hibernacula or maternity roost trees near the hatchery. There are a minimal amount of trees being cleared, we do not have the exact number yet but on pages two and three of the attached demolition plans, you can see several areas (identified with diagonal lines) that call out tree removal.

I apologize for adding many to this email but I was unsure on the proper contact to address this question, any information is greatly appreciated.

Thank you,
Marcus
Tate

Environmental & Historic Preservation
Manager FEMA-Region 1
99 High St, 6th Floor Boston, MA 02110
Cell: (617) 784-4712
Desk: (617) 956-7675

Appendix A-11: U.S.F.W.S. N.L.E.B. Email Correspondence, May 10, 2016

From: Tate, Marcus <Marcus.Tate@fema.dhs.gov>

Sent: Tuesday, May 10, 2016 11:37 AM

To: Whalen, Jeremy; Steven Hubbs; Miller, Adam

Cc: Robbins, David; Kachadoorian, Lydia; Grimley, Robert; Minns, Brian; Vanderschmidt, George; Smith, Scott

Subject: FW: Streamlined Consultation Form for Roxbury VT

All,
In the spirit of keeping you all informed, we have received the concurrence needed from USFWS regarding the ESA consultation of the Northern Long-eared Bat. That closes our loop in regard to that law and the required consultation.

This email (below) from Susi von Oettingen can serve as our needed documentation.

If there are any questions please do not hesitate to ask.

Thanks,

Marcus Tate
EHP Manager
FEMA-Environmental and Historic Preservation
Region 1-Boston MA
99 High St, 6th Floor
Cell: (617) 784-4712
Desk: (617) 956-7675

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to Sensitive But Unclassified (SBU) information and is not to be released to the public, or other personnel, who do not have a valid "need-to-know", without prior approval of an authorized DHS official.

From: vonOettingen, Susi [mailto:susi_vonoettingen@fws.gov]

Sent: Tuesday, May 10, 2016 11:23 AM

To: Tate, Marcus <Marcus.Tate@fema.dhs.gov>

Subject: Re: Streamlined Consultation Form for Roxbury VT

Did I already email you that you are good to go? If not, I've reviewed your notification form and concur you are in compliance with the 4(d) rule.

Susi

Susi von Oettingen
Endangered Species Biologist
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
(W) 603-223-2541 ext. 6418

Please note my new extension.

www.fws.gov/newengland

On Thu, May 5, 2016 at 2:43 PM, vonOettingen, Susi <susi_vonoettingen@fws.gov> wrote:
We received the fax, thanks Marcus.

Susi

Susi von Oettingen
Endangered Species Biologist
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
(W) 603-223-2541 ext. 6418
Please note my new extension.
www.fws.gov/newengland

On Thu, May 5, 2016 at 2:34 PM, Tate, Marcus <Marcus.Tate@fema.dhs.gov> wrote:

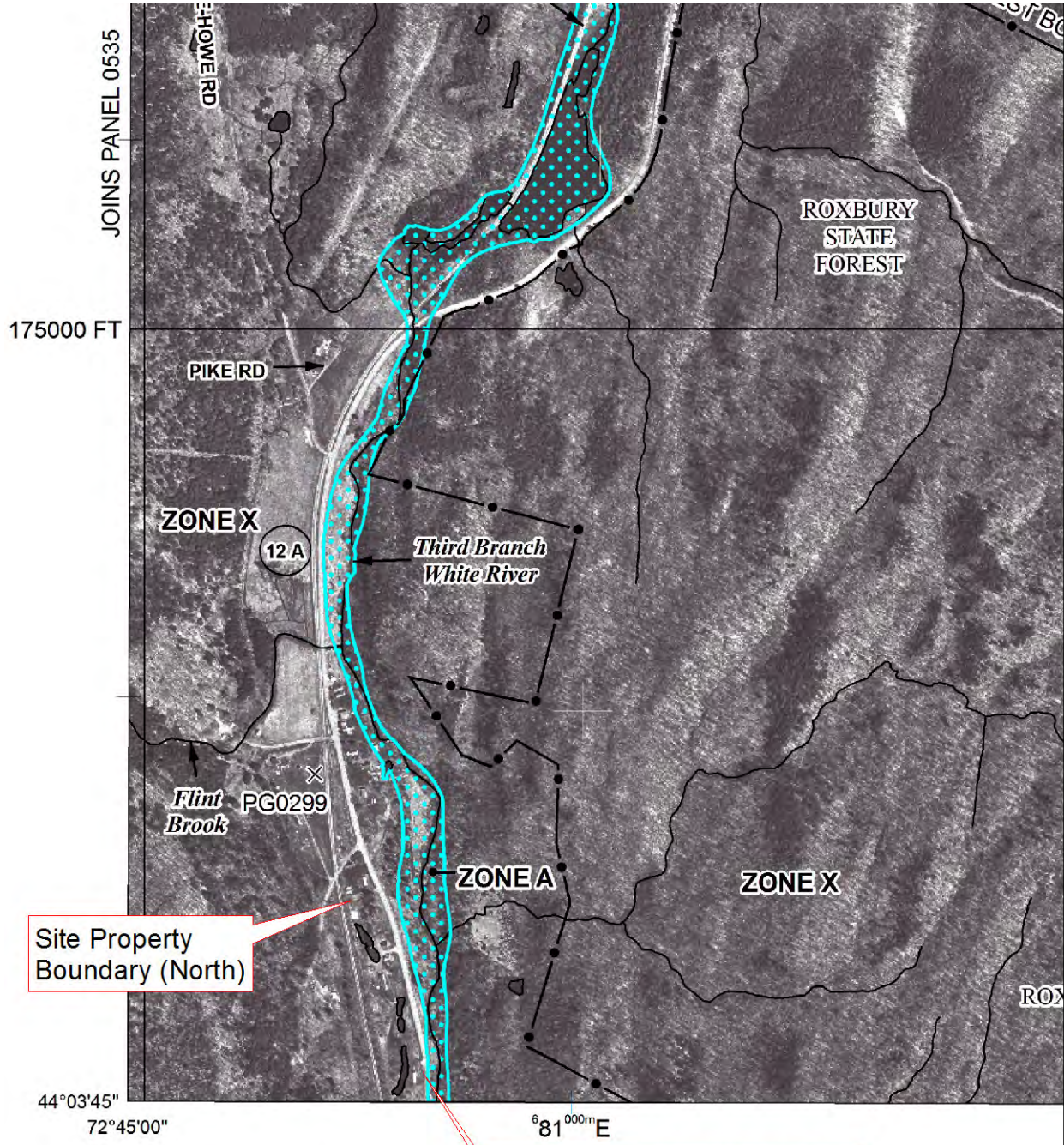
Good Afternoon Tom,

I just wanted to follow up the fax I just sent you with an email. I just submitted a 9 page streamlined consultation form with associated documents for a project in Roxbury VT at the Fish Hatchery.

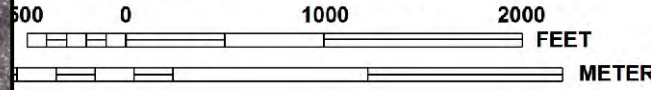
Please let me know if there was any error that prevented you from receiving FEMA's consultation package at this time.

Thank you for your attention to this matter,

Marcus Tate
Environmental & Historic Preservation Manager
FEMA-Region 1
99 High St, 6th Floor
Boston, MA 02110
Cell: (617) 784-4712
Desk: (617) 956-7675



MAP SCALE 1" = 1000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0555E

FIRM
FLOOD INSURANCE RATE MAP

WASHINGTON COUNTY,
VERMONT
(ALL JURISDICTIONS)

PANEL 555 OF 580
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ROXBURY, TOWN OF	50276	0555	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
50023C0555E

EFFECTIVE DATE
MARCH 19, 2013

Federal Emergency Management Agency

Site Property Boundary (North)

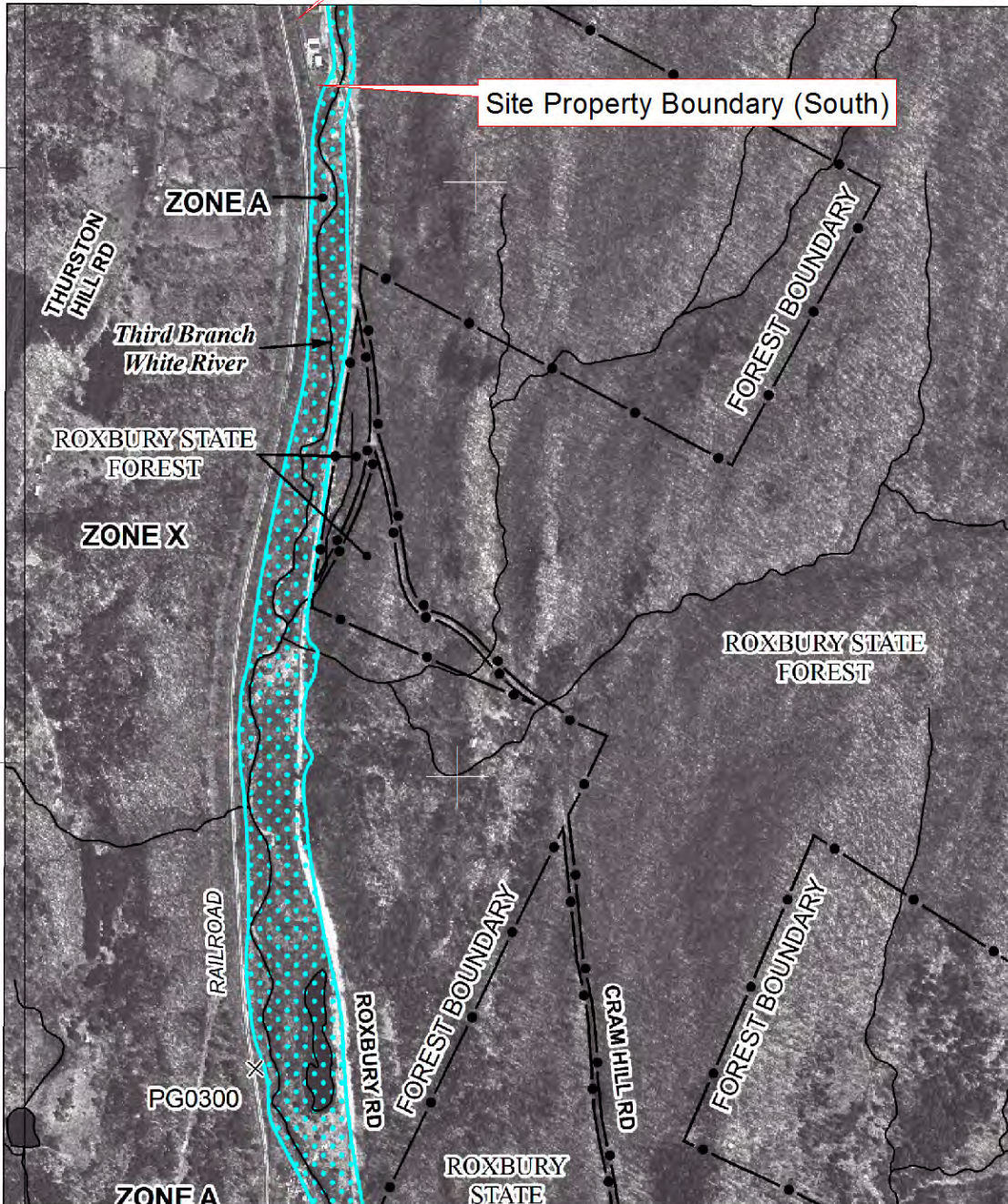
Site Property Boundary (East)

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

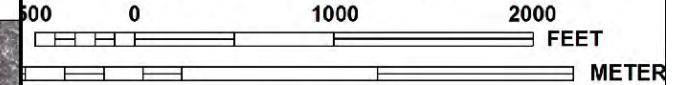
72°45'00"
480000 FT
44°03'45"

South End of Proposed Construction

Site Property Boundary (South)



MAP SCALE 1" = 1000'



NFIP

PANEL 0565E

FIRM

FLOOD INSURANCE RATE MAP

WASHINGTON COUNTY,
VERMONT
(ALL JURISDICTIONS)

PANEL 565 OF 580

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ROXBURY, TOWN OF	500276	0565	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
50023C0565E

EFFECTIVE DATE
MARCH 19, 2013

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix A-13: H.H.S. Figure 6-1A

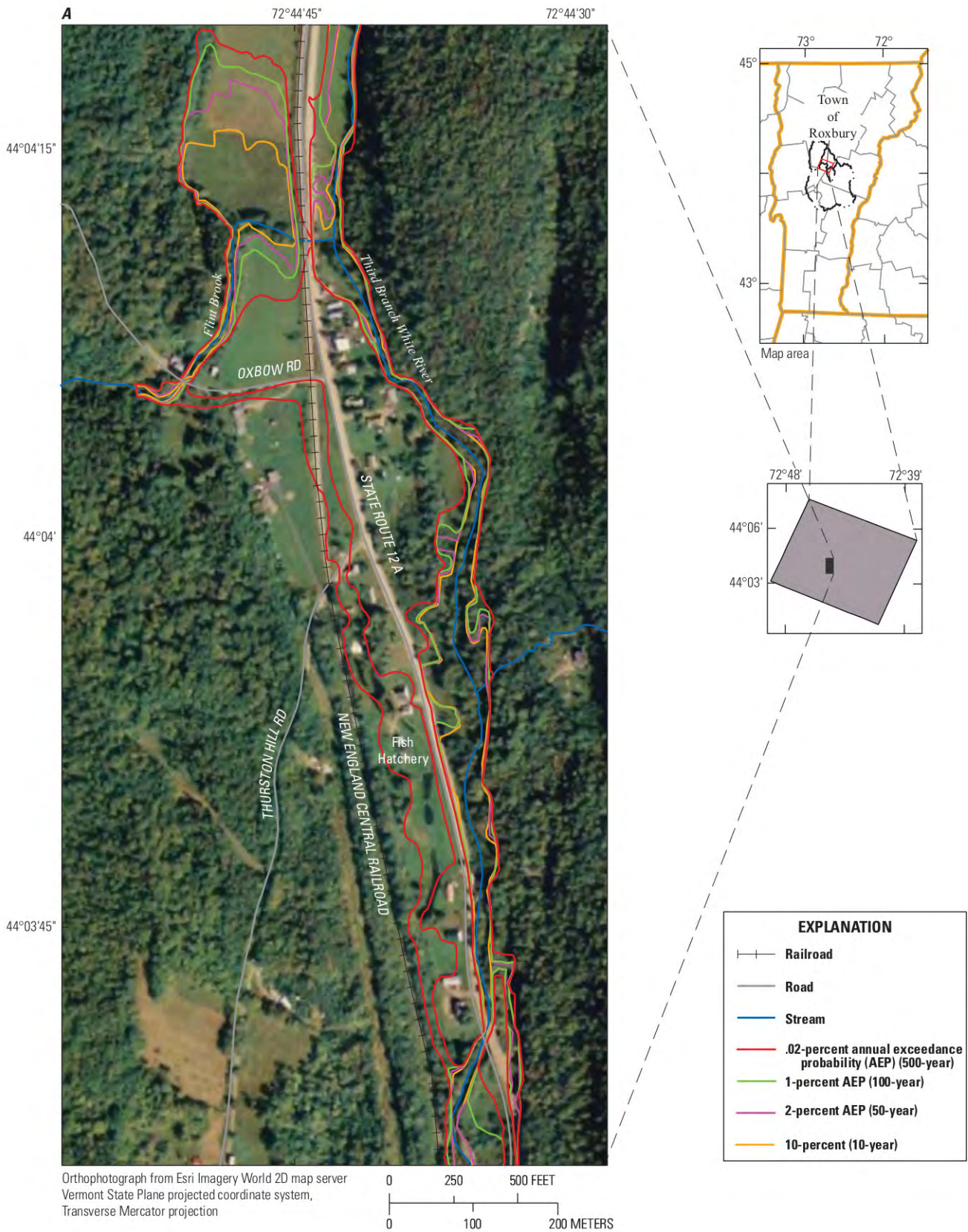


Figure 6-1: Annual exceedance probabilities for the area near and around the Roxbury Fish Culture Station in Roxbury, Vermont, under existing conditions in 2014.



Vermont Department of Environmental Conservation / *Agency of Natural Resources*

Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Phone 802-828-1535
Fax 802-828-1544

7/21/16

Jeremy Whalen
Vermont Fish and Wildlife Department
Roxbury Fish Culture Station
Roxbury, VT
(electronic transmission)
Re: Redevelopment of the Roxbury Fish Culture Station

Dear Jeremy Whalen,

Thank you for conveying the plans for the proposed work at the Roxbury Fish Culture Station. The proposed work will not affect the areas mapped as Special Flood Hazard Areas or River Corridors for the Third Branch of the White River. There are no related regulatory concerns with the proposed site work.

On June 20 you provided the current plans for the proposed work at the Roxbury Fish Culture Station (Roxbury 95% FEMA 12.pdf and Roxbury 95% FEMA 3.pdf). The Roxbury 95% FEMA 12 plans include the proposed storm water management design elements.

This is a state project exempt from municipal review so any related flood issues are regulated under the Vermont Flood Hazard Area and River Corridor Rule. I am the Central Vermont Regional Floodplain Manager for the Department of Environmental Management and I review such projects in the Town of Roxbury.

The parcel with the Roxbury Fish Culture Station is located near the Third Branch and the operation suffered extensive damage during the exceptional flows from Tropical Storm Irene. The redesign of the station is intended to protect it from the greatest historical flood level.

The Special Flood Hazard Area (SFHA) as identified on the 3/19/13 Washington County Digital Flood Insurance Rate Map is mapped to a Zone A standard. The extent of the SFHA is confined to the area east of Route 12A does not include the project area.

The River Corridor is published on the Vermont Natural Resources Atlas which indicates that some of the parcel is within the River Corridor. However, the delineation of the River Corridor was automated and

the GIS process did not handle the road crossing correctly. Gretchen Alexander, the VT DEC River Scientist for the Third Branch reviewed the mapping and provided an official update to the map. Gretchen Alexander noted:

"...the automated RC delineation process sometimes includes a large swath of land on the opposite side of the road when the approach angle to the crossing is very shallow. I manually modified the RC such that the

corridor at the crossing is more perpendicular to the bridge. The variation in width is due to constraints presented by the valley wall on the east side of the road and the railroad on the west side of the road”

On the attached map (RFCS with RC 7.21.16.jpg) I have georectified the proposed site plans and overlain the mapped Special Flood Hazard Area (amber) and updated River Corridor (yellow). All of the proposed work will be north and west of the CCC barn and completely outside of the area of concern.

The project as indicated on the plans provided does not require further review or permitting with regards to Special Flood Hazard Areas or River Corridor encroachment.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ned Swanberg', written in a cursive style.

Ned Swanberg

Ned Swanberg, Central Vermont Floodplain Manager, CFM DEC River
Corridor and Floodplain Protection Program ned.swanberg@vermont.gov
802.490.6160
www.floodready.vermont.gov

cc:

Adam Miller, Fish Culture Operations Manager, Vermont Fish and Wildlife Department
Tammy Legacy, Town Clerk, Town of Roxbury

From: Whalen, Jeremy
To: [Steven Hubbs](#)
Cc: [Miller, Adam](#)
Subject: Fwd: Roxbury fish culture station
Date: Friday, December 30, 2016 1:43:32 PM
Attachments: F&W_culture_station_det_12302016.pdf, ATT00001.htm

Steve,

Please find the attached letter from Jaron on the stream alteration permit needs. The project doesn't trigger the need for a stream alt permit.

Please update and include in the EA. Thank you and Happy New Year. Jeremy

Sent from my iPhone

Begin forwarded message:

From: "Borg, Jaron" <Jaron.Borg@vermont.gov>
Date: December 30, 2016 at 12:59:59 PM EST
To: "Miller, Adam" <Adam.Miller@vermont.gov>
Cc: "Whalen, Jeremy" <Jeremy.Whalen@vermont.gov>, "Repella, Angela C NAE" <Angela.C.Repella@usace.army.mil>
Subject: **Roxbury fish culture station**

Adam,

Please find the attached jurisdictional opinion for the Roxbury fish culture station. Best wishes to you all for the new year.

Sincerely, Jaron



Vermont Department of Environmental Conservation

Agency of Natural Resources

Watershed Management Division 1 National Life Drive, Main 2
Montpelier VT 05620-3522
www.watershedmanagement.vt.gov

[phone] 802-828-1535
[fax] 802-828-1544

ATTN: Adam Miller
Vermont Fish and Wildlife Department 1 National Life Drive, Davis 2
Montpelier, VT 05620-3702
Phone: 802-777-2852
Email: Adam.Miller@vermont.gov

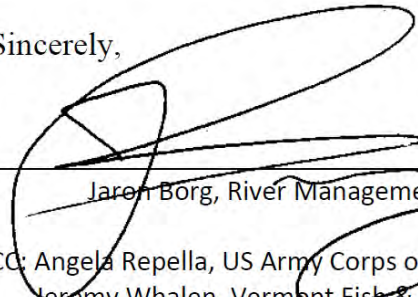
Thank you for taking the time to contact me regarding the proposed reconstruction of the Roxbury fish culture station. The design plans submitted, developed by HDR Engineering and dated as 100% complete on 03/11/13, were valuable in understanding the extent of the Roxbury system and the proposed redevelopment of the site.

This site contains two drainageways of interest. The most noticeable of these consists of the existing raceway system developed as part of the fish culture facility. Water enters this drainage by means of water diversion of Flint Brook and several spring wells located on the northern section of the property. Given that without human intervention this stream would not exist this drainage is not considered a perennial stream and therefore is not subject to stream alteration permitting.

The second drainage enters the raceway system below the "lower concrete dam" of Pond 5 as depicted on sheet G-1.3 in the provided plan set. This stream drains from the adjacent railroad embankment through a 2' corrugated metal culvert perched on the outlet end. Further investigation shows that this stream was not captured in the Vermont Hydrography Dataset or National Hydrography Dataset, suggesting that the contributing watershed is small and making delineation of the contributing watershed difficult through established methods. Graphical estimation of the watershed utilizing local topographic maps show a maximum contributing area of 60 acres. Field visit to the site revealed that there was no sign of sediment sorting within the flowing portion of the stream. Due to the small size of the contributing watershed area, lack of fluvial processes, intermittent flow, and absence of fish species it can be determined that this drainage is not a perennial stream. Alterations to this watercourse would not necessitate the need for a State of Vermont Stream Alteration Permit.

The jurisdictional determination is limited to the applicability of Title 10 V.S.A. Section 1021/1023 and does not eliminate the need for any other applicable regulatory reviews. If you have further questions, comments or concerns regarding the conclusions reached or means of assessment, please feel free to contact me.

Sincerely,



Jaron Borg, River Management Engineer

CC: Angela Repella, US Army Corps of Engineers
Jeremy Whalen, Vermont Fish & Wildlife Division

Appendix A-15: 8-Step Wetlands Review Checklist

EXECUTIVE ORDER 11990 WETLANDS PROTECTION
44 CFR Part 9
CHECKLIST

TITLE: FEMA DR 4022 VT - Roxbury Fish Culture Station

PROPOSED ACTION:

The Vermont Fish and Wildlife Department (VFWD) will rebuild the Roxbury Fish Culture Station (RFCS) to modern standards and codes. The existing historic buildings would remain but the pond and raceway system would be replaced with a modern fish-rearing system necessary to comply with modern laws and regulations, most notably the federal Clean Water Act (CWA). The project will involve re-grading the majority of the Site. Details of the project include:

- Construction of two enclosed and covered pavilions, each measuring approximately 25 feet high, 75 feet wide, and 80 feet long. The Upper Tank Pavilion and Lower Tank Pavilion would be built on the former locations of Ponds #3, #4 and #5. Each pavilion will consist of six 20-foot diameter fish-rearing tanks with concrete bottoms, steel framing, and stainless steel walls and roof.
- Construction of a drainage ditch with check dams and a detention pond with sediment forebays to manage stormwater in accordance with the Vermont Stormwater Manual (“Stormwater Best Management Practices [BMPs]).
- Underground pipes and pumps will be installed to bring water to the tanks, which requires that the water be better screened of leaves and debris.
- Water exiting the RFCS must be chemically-treated to meet discharge permit limits under the CWA. This objective will be achieved by:
 - Construction of an Influent Treatment Building where spring water entering the RFCS will be filtered and subject to ultraviolet disinfection to eliminate harmful hatchery diseases and reduce the need for fishery chemicals;
 - construction of an Effluent Treatment Building where phosphorous, nitrogen, and settleable solids will be removed with a system of water clarifiers prior to discharge to the White River Third Branch; and
 - construction of a plastic-lined Chemical Treatment Pond to allow for the biological and photo-degradation of fishery chemicals – primarily formalin and chloramine-T.
- Restoration (but not to functionality) of two of the historic ponds (Pond #1 and Pond #2) that will be stocked with fish to educate the public on historical fish-rearing methods at the RFCS.
- Construction of a new Visitor Parking lot and Restroom Building on the north side of the existing Hatchery Building to accommodate visitors, including those with disabilities.
- Installation of handrails, guardrails, walkways, ramps, signage, and automatic doors to achieve compliance with the Americans with Disabilities Act (ADA).
- Construction of the new buildings, piping, stormwater BMPs and treatment ponds will require filling or other disturbance of 0.54 total acres of open water, Vermont Class III wetlands, and CWA jurisdictional wetlands and waterways.

DESCRIPTION OF PROJECT:

Mark the review steps required per applicability: 1 2 3 4 5 6 7 8

STEP NO. 1 Wetlands Data

YES **NO** The proposed action is located in a wetland mapped by: US Fish & Wildlife Service-National Wetlands Inventory

YES **NO** The proposed action may be in wetlands based on evaluation from soil surveys, aerial photographs, site visit or other data.

Remarks:

Actions which have the potential to affect wetlands, or which are subject to potential harm by location in wetlands.

YES NO

The proposed action could potentially adversely affect wetlands or further study will be necessary to determine whether the proposed action would affect wetlands.

Remarks: The originally proposed action would have adversely affected wetlands and waters that have been determined to be jurisdictional under the CWA. The VFWD applied for and was granted coverage as a Category 2 project under the Vermont General Permit issued by USACE on December 12, 2012. A Category 2 project requires a written approval from USACE before a project can proceed under the Vermont General Permit. Through this permitting process, specific avoidance and minimization measures were added to the project to offset adverse effect to the wetlands; these measures are:

- Removal of storm water ditching in the northwest corner to avoid wetland impacts;
- Move parking out of wetland in north plot to in front of hatchery building: parking current use in front of building;
- Pond 1 to be restored from a wetland to a viewing pond (along with pond 2)

YES NO

The proposed action could potentially be adversely affected by wetlands.

Remarks:

STEP NO. 2 Notify the public at the earliest possible time of the intent to carry out an action in a wetland, and involve the affected and interested public in the decision-making process.

Notice was provided as part of a disaster cumulative notice.

Project Specific Notice was provided by:

Type of Public Notice:

Newspaper, (name: _____)

Post Site, (location: _____)

Broadcast, (station: _____)

Direct Mailing, (area: _____)

Public Meeting, (dates: _____)

Other: _____

STEP NO. 3 Identify and evaluate practicable alternatives to locating the proposed action in a wetland (including alternatives sites, actions and the "no action" option). If a practicable alternative exists outside the wetland, FEMA must locate the action at the alternative site.

Alternative Options

YES NO

Is there a practicable alternative site location outside of wetlands?

Site location:

YES NO

Is there a practicable alternative action outside of the wetland that will not affect wetlands?

Alternative action:

YES NO

Is the NO Action alternative the most practicable alternative?

Remarks: The No Action alternative is not practicable for the following reasons:

1. Under existing conditions, the RFCS is incapable of meeting effluent discharge requirements under the CWA;
2. The title deed for the site requires the site to revert to the heirs of the original private landowners in the event the site is no longer utilized as a fish hatchery, potentially compelling the State of Vermont to relocate other VFWD facilities on the site; and
3. Under existing conditions, the RFCS is vulnerable even to flooding with a probability greater than the 0.2% annual chance flood, such as the flood events that damaged the site in 1998 and 2006.

IF ANY ANSWER IS YES, THEN FEMA SHALL TAKE THAT ACTION AND ANSWER THE FOLLOWING QUESTIONS:

YES NO The proposed action could potentially adversely affect wetlands or will further study be necessary to determine whether the proposed action would affect wetlands.
Remarks: Measures (see above) were specifically developed and approved by regulatory agencies in order to minimize the adverse effects.

YES NO The proposed action could potentially be adversely affected by wetlands.
Remarks: The measures taken to minimize the adverse effects to the wetlands will also protect the facility.

IF BOTH ANSWERS ARE NO TAKE THE ACTION AND THE REVIEW IS COMPLETE. IF EITHER ANSWER IS YES, CONTINUE WITH THE FOLLOWING STEPS.

STEP NO. 4 Identify the potential direct and indirect impacts associated with the occupancy or modification of wetlands and the potential direct and indirect support of wetland development that could result from the proposed action. 44CFR Part 9.10

- YES NO Is the Proposed Action based on incomplete information?
- YES NO Does the proposed action increase the risk of damage to the wetland?
- YES NO Will the proposed action induce future growth and development, which will potentially adversely affect the wetland?
- YES NO Does the proposed action involve dredging and/or filling of a wetland?
- YES NO Will the proposed action result in the discharge of pollutants into the wetland?
- YES NO Does the proposed action avoid long and short-term adverse impacts associated with the occupancy and modification of wetlands?
- YES NO Will the proposed action result in any indirect impacts that will affect the natural resources and functions of a wetland?
- YES NO Will the proposed action forego an opportunity to restore the natural and beneficial resources served by wetlands?
- YES NO Does the proposed action restore and/or preserve the natural and beneficial resources served by wetlands?
- YES NO Will the proposed action result in an increase to the useful life of a structure or facility?
- YES NO If not repaired, the facility may be compromised and endanger life and property.
-

STEP NO. 5 Minimize the potential adverse impacts within wetlands to be identified under Step 4, restore and preserve the natural and beneficial values served by wetlands.

YES **NO** Were techniques applied to the proposed action to minimize the impacts of the action in or near wetlands?

If No, Identify Wetland Protection Techniques required as a condition of the grant:

YES **NO** Were avoidance and minimization measures applied to the proposed action to minimize the short and long term impacts on wetlands?

If no, identify measures required as a condition of the grant:

YES **NO** Were measures implemented to restore and preserve the natural and beneficial resources of wetlands.

If no, identify measures required as a condition of the grant:

STEP NO. 6 Reevaluate the proposed action to determine, if it is still practicable in light of its exposure to impacts on wetlands; the extent to which it will aggravate the hazards to others; and its potential to disrupt wetland resources. Also, if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5, FEMA shall not act in wetlands unless it is the only practicable location.

YES **NO** The action is still practicable in light of the exposure to impact to wetlands and ensuing disruption of natural resources;

YES **NO** The action in the wetland is the only practicable alternative.

YES **NO** There is no potential for limiting the action to increase the practicability of previously rejected sites and/or alternative actions.

YES **NO** Minimization of harm to or within wetlands can be achieved using all practicable means.

YES **NO** The action in wetlands clearly outweighs the requirement of EO 11990.

STEP NO. 7 Prepare and provide the public with a finding and public explanation of any final decision that the action in the wetlands is the only practicable alternative.

Notice will be provided as part of a disaster cumulative notice.

Project Specific Notice was provided by:

Type of Public Notice:

Newspaper, (name:)

Post Site, (location:)

Broadcast, (station:)

Direct Mailing, (area:)

Public Meeting, (dates:)

Other:

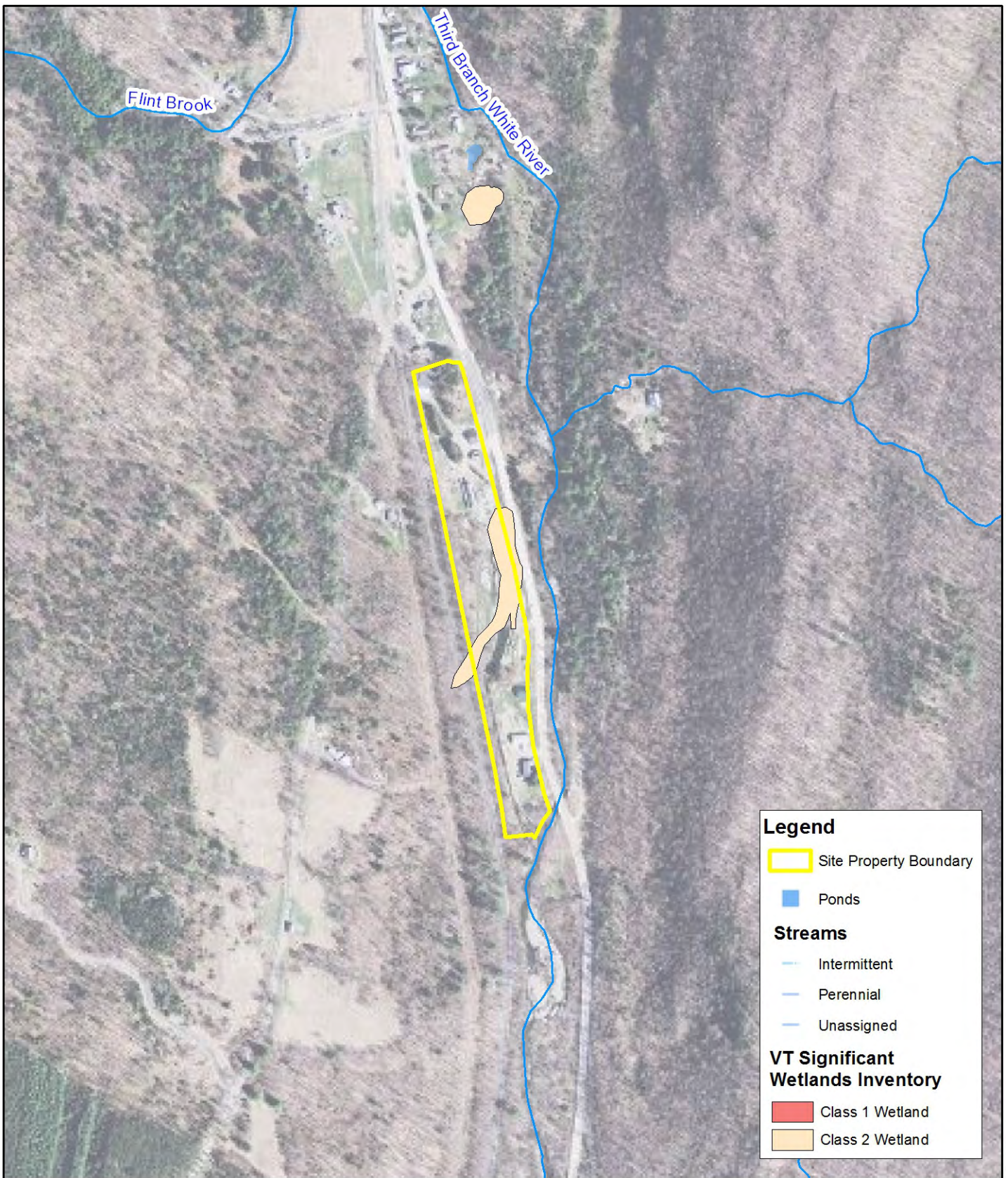
Date of Public Notice:

After providing the final notice, FEMA shall, without good cause shown, wait at least 15 days before carrying out the proposed action.

STEP NO. 8 Review the implementation and post - implementation phases of the proposed action to ensure that the requirements stated in Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes.

YES **NO** Was Grant conditioned on review of implementation and post-implementation phases to insure compliance of EO 11990?

Appendix A-16: Vermont Significant Wetlands Inventory Map



0 250 500 1,000 Feet



1 inch = 500 feet

SOURCES

- (1) Aerial imagery obtained from the VT Center for Geographic Information (VCGI).
- (2) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
- (3) VSWI Wetlands Class Layer, June 4, 2010 (VCGI)



U.S.F.W.S. Nat'l Wetland Inventory Map



July 25, 2016

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Forested/Shrub Wetland | Other |
| Estuarine and Marine Wetland | Freshwater Pond | Riverine |
| Freshwater Emergent Wetland | Lake | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

**Vermont Agency of Natural Resources Department of Environmental Conservation
Watershed Management Division**

Wetland Determination

Issued Pursuant to Section 8 of the Vermont Wetland Rules

In the matter of:

Vermont Fish and Wildlife
Roxbury Fish Culture Station
3696 Roxbury Road
Roxbury, VT 05669

Petition for the reclassification of a mapped Class II wetland to a Class III wetland

3696 Roxbury Road, Roxbury

File #:2016-308

Date of Decision: October 31, 2016

Decision: Class III

The Secretary may, upon a petition or on his or her own motion, determine whether any wetland is a Class II wetland or a Class III wetland, pursuant to 10 V.S.A. § 914 and the Vermont Wetland Rules, Vt. Code R. 12 004 056 (VWR). The Secretary may establish the necessary width of a buffer zone of any Class II wetland as part of any wetland determination pursuant to the Rules. Section 4.2 of the VWR

As required under 10 V.S.A. § 914 and Section 8 of the VWR, this wetland determination is based on an evaluation of the functions and values of the subject wetland as described in Section

5 of the VWR. Public notice of this wetland determination has been given in accordance with

Section 8.3 of the VWR.

Petition

1. A complete petition was received from Commissioner Louis Porter from the Vermont Department of Fish and Wildlife for a Wetland Determination #2016-308 on 7/15//2016. The Wetland Determination was put on notice from [DATE] until [DATE]
2. The subject wetland is located at the Vermont State Fish Culture Station located at 3696 Roxbury Road (VT Route 12A), on the west side of the road. A map showing the approximate location of the subject wetland was prepared by Bannon Engineering, entitled "Existing Conditions Wetland Map" dated 6/7/2016.
3. Shannon Morrison, District Wetlands Ecologist, conducted a site visit to the subject property with Jeremy Whalen, VTFW Station Manager, on 5/25/2016.
4. The subject wetland is currently identified as a Class II wetland on the Vermont Significant Wetlands Inventory (VSWI) map. The petition is to reclassify this wetland from Class II to Class III.

5. The wetland in question is described in detail in Sections 4 and 5 of the permit application. Generally, the wetland consists of a combination of groundwater seeps, and man-made ponds used for fish culture operations associated with the Third Branch of the White River. The fish hatchery was originally constructed in 1891, and was severely damaged during Hurricane Irene. The natural portion of the wetland are seeps associated with the railroad tracks and are interspersed as pockets throughout the site. A steep hillside is located behind the tracks, and the railbed acts as a dam for water draining down the hillside. Seeps occur at the base of the railbed and drain towards the hatchery. The hatchery collects some of the seep water, but is mainly fed from water piped from the Third Branch. The entirety of the Fish Hatchery was mapped on the VSWI maps. While the man-made ponds are lined with concrete and clearly not natural wetland, there is approximately 0.47 acres of emergent and shrub seep influenced wetland that intersect with the VSWI polygon.
6. No public comments were received during the public comment period.

Findings

As required by 10 V.S.A. § 914 and Section 8 of the VWR, this wetland determination is based on an evaluation of the functions and values of the subject wetland as described in Section 5 of the VWR. Section 5 provides that in evaluating whether a wetland is a Class II or a Class I wetland, the Secretary shall evaluate the functions that the wetland serves both as a discrete wetland and in conjunction with other wetlands by considering detailed functional criteria. Consideration shall be given to the number of and/or extent to which protected functions and values are provided by a wetland or wetland complex.

1. The following functions are either not present or are present at such a minimal level as to not be protected functions: water storage for flood water and storm runoff as described in Section 5.1 of the VWR; surface and groundwater protection (Section 5.2); fisheries habitat (Section 5.3); wildlife and migratory bird habitat (Section 5.4); exemplary wetland natural community (Section 5.5); threatened and endangered species habitat (Section 5.6); education and research in natural science (Section 5.7); recreational value and economic benefits (Section 5.8); open space and aesthetics (Section 5.9); and erosion control through binding and stabilizing the soil (Section 5.10).

2. Water Storage for Flood Water and Storm Runoff

Wetlands that provide for the temporary storage of floodwater or stormwater runoff to the extent that they make an important contribution to reducing risks to public safety, reducing damage to public or private property reducing downstream erosion or enhancing the stability of habitat for aquatic life are significant wetlands.

The wetland is not significant for the water storage for flood water and storm runoff function as demonstrated in Section 7 of the petition and as confirmed through a site visit by Agency staff. While the hatchery is in the floodplain, the small seep wetlands interspersed throughout the site do not offer additional flood storage capacity from the upland portions of the site. The area is developed as the hatchery, and any additional storage capacity is supplied by the man-made features on the site.

3. Surface and Ground Water Protection

Wetlands that make an important contribution to the protection or enhancement of the quality of surface or of ground water are significant wetlands.

The wetland is not significant for the surface and ground water function as demonstrated in Section 8 of the petition and as confirmed through a site visit by Agency staff. The natural wetlands on this property are only connected to the Third Branch by the artificial piping provided by the piping at the Fish Hatchery. VT Route 12 provides a natural barrier between these wetlands and the Third Branch. The

seep wetlands may provide groundwater discharge points, but offer little in the way of filtration and nutrient uptake. It is highly unlikely that the manmade features at the hatchery provide any water quality benefits.

4. Fish Habitat

Wetlands that are used for spawning by northern pike or that are important for providing fish habitat are significant wetlands.

The wetland is not significant for the water storage for the fish habitat function as demonstrated in Section 9 of the petition and as confirmed through a site visit by Agency staff. The seep wetlands may provide some cold-water input to the hatchery, but this is taken out of the context of a natural system. Without the hatchery, these wetlands would have no influence on fish habitat associated with the Third Branch.

5. Wildlife Habitat

Wetlands that support a significant number of breeding waterfowl, including all species of ducks, geese and swans, or broods of waterfowl or that provide important habitat for other wildlife and migratory birds are significant wetlands.

The wetland is not significant for the water storage for the wildlife habitat function as demonstrated in Section 10 of the petition and as confirmed through a site visit by Agency staff. The wetlands are small and are surrounded by the hatchery infrastructure and the railroad.

6. Exemplary Wetland Natural Community

Wetlands that make an important contribution to Vermont's natural heritage are significant wetlands. These include wetlands that are identified as high quality examples of one of Vermont's recognized natural community types.

The wetland is not significant for the exemplary wetland natural community function as demonstrated in Section 11 of the petition and as confirmed through a site visit by Agency staff.

7. Rare, Threatened, and Endangered Species Habitat

Wetlands that contain rare, threatened, or endangered species of plants or animals are significant wetlands.

The wetland is not significant for the rare, threatened and endangered species habitat function as demonstrated in Section 12 of the petition and as confirmed through a site visit by Agency staff.

8. Education and Research in Natural Sciences

Wetlands that provide, or are likely to provide valuable resources for education or scientific research are significant wetlands.

The wetland is not significant for the education and research in natural sciences function as demonstrated in Section 13 of the petition and as confirmed through a site visit by Agency staff. While the Hatchery provide educational opportunities, none of these are contingent on the wetlands on the site.

9. Recreational Value and Economic Benefits

Wetlands that provide substantial recreational values or economic benefits are significant wetlands.

The wetland is not significant for the recreational value and economic benefits function as demonstrated in Section 14 of the petition and as confirmed through a site visit by Agency staff.

10. Open Space and Aesthetics

Wetlands that contribute substantially to the open-space and aesthetic character of the landscape are significant wetlands.

The wetland is not significant for the open space and aesthetics function as demonstrated in Section 15 of the petition and as confirmed through a site visit by Agency staff.

11. Erosion Control through Binding and Stabilizing Soil

Wetlands that are important for erosion control are significant wetlands. Such wetlands are typically located along stream, river, pond or lake shorelines, where erosive forces are present.

The wetland is not significant for the erosion control through binding and stabilizing soil function as demonstrated in Section 16 of the petition and as confirmed through a site visit by Agency staff.

Determination of Wetland Classification

Based on the petition dated 7/15/2016, information obtained during a site visit by Wetlands Program staff on 5/25/2016, comments received during the public notice period and an evaluation of the functions and values of the wetland, the Secretary has determined that the wetland under consideration is a Class III wetland. The Vermont Significant Wetlands Inventory mapping will be updated accordingly and this designation shall be valid for up to ten years after issuance.

Reconsideration of Wetlands Determination

Within 15 days of the date of this decision, the applicant, any person entitled to notice under Section 8.3(a) of the VWR, or any person who filed written comments regarding the permit application may request in writing reconsideration by the Secretary. Section 8.4 of the VWR. Such a request shall specify all action(s) for which reconsideration is sought and shall provide an explanation of the reason(s) why the request is filed. Where a request for reconsideration has been properly filed, additional evidence may be submitted concerning the functions and values of the wetland, and concerning any other material issue as deemed appropriate by the Secretary. The Secretary may appoint a designee, who shall be at the Division Director level or higher, to render a decision on the request for reconsideration. The Secretary's written reconsideration decision shall be issued as expeditiously as possible under the circumstances, and shall be distributed in accordance with §8.3(c) of the Wetland Rules. If the Secretary fails to act on a request for reconsideration within 20 days of its filing, the request shall be deemed to be denied. The Secretary's written reconsideration decision shall constitute a final act or decision of the Secretary, subject to appeal pursuant to 10 V.S.A. § 8504 and Section 10 of these Rules.

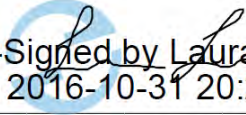
No request for reconsideration may be filed concerning or resulting from a request for reconsideration. If the Secretary fails to act on a request for reconsideration within 20 days of its filing, the request shall be deemed to be denied.

Filing a timely request for reconsideration with the Secretary tolls the 30-day period for filing an appeal with the Environmental Court. The full time for appeal shall commence to run and shall be computed from the date of the issuance of the Secretary's decision on the reconsideration request.

Appeals

Appeals from any act or decision of the Secretary under the Wetland Rules are governed by 10 V.S.A. §8504.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

e-Signed by  Laura Lapierre
by: on 2016-10-31 20:20:07 GMT

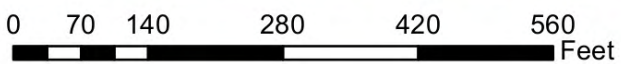
Laura Lapierre, Program Manager
Wetlands Program
Watershed Management Division

Dated at Montpelier, Vermont
this thirty-first day of October, 2016

ABS/LVPL/SM







1:100,000 Copyright © 2013 National Geographic Society, i-cubed



VSWI Map Change Project #2016-308
 Cartographer : L. Woods
 Date: Oct. 31, 2016

Legend

-  Class III Wetland
-  Class II Wetland to be removed
-  State Highway
-  Class 3 Town Road

VCGI

Appendix A-19: V.F.W.D. Wetlands Mitigation Measures Memorandum to U.S.A.C.E., October 7, 2016

Department of Fish and Wildlife

Agency of Natural Resources

1 National Life Drive

[phone] 802-241-3700

Montpelier, VT 05620-3702

[fax] 802-828-1250

www.vtfishandwildlife.com

Memorandum

To: Angela Repella, U.S. Army Corps of Engineers

From: Adam Miller, Fish Culture Operations Manger

Date: October 7, 2016

Re: Roxbury Fish Culture Station Avoidance and Minimization Measure

The purpose of this memo is to provide further detail, justification, and reasoning to the U.S. Army Corps of Engineers (USACE) regarding the discussed Roxbury Fish Culture Station avoidance and minimization measures to waters and wetlands on site at the facility. In a site visit conducted on August 15th, 2016 with USACE, Environmental Protection Agency (EPA), and Vermont Fish and Wildlife (VTFW) staff possible treatment measures were discussed to minimize the impacts to the waters and wetlands on the property at Roxbury. VTFW has evaluated each measure presented in the email received on 8/23/2016 from USACE and are presenting our findings of feasibility for those measures. Supporting documentation is attached.

To address the larger scale plans for each of the impact areas VTFW is attaching three (3) PDF files. In those files the project was broken down into three larger plan areas (north, central and south).

The wetland delineation conducted by Bannon Engineering was then overlaid on each section of the plan providing better detail on wetland impacts.

In regard to the alternative locations for parking outside of the "Pond 1" area, it is feasible for the parking area to be moved to an alternate location. That location will be moved to in front of the current hatchery building. Consequently, VTFW reached out proactively to the Vermont State Historic Preservation Office (SHPO) to discuss this move so as to ensure that the new parking location would not negatively impact SHPO's opinion of the proposed reconstruction project. As a result, it was agreed that parking in front of the hatchery building is current use and would not present an adverse effect on the project under Section 106 review. It was however requested by SHPO that "Pond 1" be restored to its previous pond condition to maintain to the best extent possible the historic integrity of the property (i.e. fish were historically reared in ponds).

With regard to eliminating the proposed storm water ditching at the northwest end of the project, the storm water design plan was submitted to Vermont Department of Environmental Conservation (VTDEC) Stormwater's Kevin Burke for review of this request. In the attached email dated September 29, 2016 overland flow of storm water is allowable thus eliminating the need for ditching and the impact to 1,900 square feet of wetland in the north PDF. (See



attached email)

In summary, VTFW's position is that avoidance and minimization to wetlands and waterways in the north plot PDF is feasible for this project and we will take steps to address these changes. These changes to the design would include removal of the storm water channel on the west side of Pond 2, moving the parking area to the front of the hatchery building and restoring Pond 1 to a pond to strengthen the historic core.

With respect to USACE's request to explore siting alternatives for the proposed chemical effluent and stormwater detention pond in the Pond 5 footprint, VTFW investigated alternatives and determined that there are no other reasonable or feasible siting alternatives other than in the current Pond 5 footprint. This is for a number of reasons:

- 1) Overall elimination of the chemical effluent pond is not feasible since the use of fisheries chemicals is necessary to protect fish from harmful fish pathogens, and immediate discharge of these chemicals into the Third Branch of the White River would result in a violation of the Vermont Water Quality Standards and the National Pollutant Discharge Elimination System as set forth through the Clean Water Act.
- 2) Overall elimination of the stormwater detention pond is not feasible since the overall impact of impervious surface of the proposed construction necessitates specific stormwater control measures as specified under the Vermont Water Quality Standards which include a stormwater detention pond
- 3) In order to maintain appropriate water flow elevations the chemical effluent pond needed to be situated at an elevation that maintains gravity flow into the pond from the fish rearing pavilions and out of the pond to the effluent outflow. Abandoning gravity flow of this water would necessitate costly water pumping which would increase construction and annual operational costs to a level that would not be financial feasible. Therefore, the chemical effluent detention pond must remain at the proposed elevations listed in the proposed reconstruction drawings. This is similar for the stormwater detention pond.
- 4) Given the fact that the Pond 5 footprint is located in a current elevation depression area, minimal rock excavation and blasting are needed to locate the chemical effluent pond in the pond footprint. During the design phase of the project a geo technical study was conducted and reported a shallow ledge on the east/west side of the pond 5. As a result, moving the chemical effluent pond outside of the current Pond 5 footprint to an alternative location would mean rock excavation and blasting for a new site. As part of the wetland avoidance and minimization review process, VTFW asked VTDEC facilities engineer Jim Burke to provide an estimated cost of rock excavation and blasting. As such, please see the attached email from Jim Burke outlining an additional cost of blasting and excavation of

\$70,000. This additional cost coupled with the fact that the regrading of the site and piping of the rearing water would most likely result in a significant



decrease in water that would be in the Pond 5 footprint had led VTFW to the conclusion that there are no reasonable, feasible siting alternatives to the chemical effluent and stormwater detention ponds other than the Pond 5 footprint.

In summary, with regard to USACE's request to explore siting alternatives for the proposed stormwater and chemical effluent detention ponds, VTFW believes that there are no other feasible alternative locations for the chemical pond or the storm water detention pond. Moving both ponds would require costly additional engineering fees and a total redesign of the south plot provided as well as added construction costs associated with blasting and rock excavation. Additionally, the wetland surrounding Pond 5 would dry up as the water currently supporting it would be piped completely into the new design. After Pond 2 in the center PDF (provided), all water is piped through the tanks to treatment then discharge below the storm water pond. Simply put, the impact in this part of the project is unavoidable and avoidance measures would be cost prohibitive.

In describing the details regarding the site configuration for the tank pavilions and how they function you will find the attached memo from Roxbury Fish Culture Station Supervisor Jeremy Whalen. In this memo he explains the details of how the pavilions were situated in the design phase and relation to the overall project.

VTFW has contacted Stream Alteration Engineer Jaron Borg and received a verbal confirmation that no stream alteration permit is needed for the Roxbury Fish Culture Station reconstruction work planned; however, a formal written confirmation will be forthcoming.

VTFW originally contacted Mark Bannon of Bannon Engineering and conducted a wetland delineation of the site. The original proposed total impact to waters/wetlands is 0.71 acres (30,920 sq. ft.) on the total 1.1 acres delineated on site. In the site visit USACE and EPA generally agreed to the delineation with no changes in mapping requested. Updated impact calculations for this project from Mark Bannon, including minimization steps described above for the north area, show a reduction of impacted area to 0.54 acres (23,673 sq. ft.) on the site. This is accomplished as a result of the avoidance of 1,900 sq. ft. of wetland impact by removing the aforementioned stormwater ditching and the avoidance of 5,347 sq. ft. of impact by moving the parking area away from Pond 1. Therefore, a total of 0.17 acres of additional avoidance have been achieved since the site visit. (see attached email)

VTFW believes that the Roxbury project is good for the environment in that the rebuilt facility promotes water quality by reconstructing a new facility which complies with NPDES permits to meet water discharge standards of Phosphorus, Total Settleable Solids (TSS), and chemical discharge. VTFW respectfully requests that USACE approve the above measures and allow the department to apply for a Category 2 General Permit for construction of the new facility at Roxbury. In this approval VTFW would also request a formal email to FEMA stating agreement on these measures so as to close the wetlands loop in the EA process with that agency.



Please feel free to let me know if you have any questions or concerns regarding the avoidance and minimization of water/wetlands for the new Roxbury Fish Culture Station. I can be reached by phone at 802-777-2852 or by email at Adam.Miller@Vermont.gov.





Vermont Department of Environmental Conservation / Agency of Natural Resources

Watershed Management Division
103 South Main Street, Building 10 North
Waterbury, VT 05671-0408
[phone] 802-241-3777
[fax] 802-338-4890

Mr. Jeremy Whalen
Roxbury Fish Culture Station
3696 Roxbury Road
Roxbury, VT 05669

Re: Effluent Limits at the Roxbury Fish Hatchery

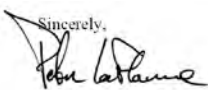
Dear Jeremy:

The Department recently completed a draft *Reasonable Potential Determination* for the Roxbury Hatchery based upon ambient chemistry data and biological assessments completed in the receiving water and, in part, specifications described in the March 2012 BGS RFP for reconstruction and improvements to the hatchery. (This document and cover letter were emailed to Tom Wiggins on May 24, 2012.)

As a follow up to that determination, we have completed additional calculations on the use of the hatchery chemical Formalin. The calculations were based on information submitted from the DFW indicating a maximum formalin concentration of 200 mg/L in one of the on-site ponds that was previously utilized for treatment at Roxbury (i.e. pre-tropical storm Irene). Our data indicates that an acute formalin limit of 25.8 mg/L and a chronic formalin limit of 3.36 mg/L would be necessary effluent limitations for the discharge from the Roxbury Hatchery. A new wastewater treatment facility constructed at Roxbury should be designed such that the effluent can meet these limits prior to discharge to the Third Branch of the White River.

The Determination also provides evidence of moderate enrichment in the biological community in the receiving waters, resulting in an instance where biological criteria were not met during one of two monitoring years. As a precaution to guard against any continuing degradation in biological integrity, the Department recommends that total phosphorus and total nitrogen be reduced in effluent to no more than levels currently discharged, and that biological monitoring be a condition of any discharge permit. The Determination indicates that current discharge is maintained at 0.053 mg/L on average for total phosphorus. While the hatchery does not currently monitor for total nitrogen, the Determination indicates the existence of a consistent increase in total nitrogen of 0.06 mg/L from upstream to downstream, which can reasonably be attributed exclusively to hatchery discharge. Applying this increase to the instream waste concentration at design flow suggests that the hatchery effluent is 0.31 mg/L total nitrogen on average. A new effluent discharge treatment system constructed at Roxbury should therefore be designed to meet limits of 0.053 mg/L total phosphorus, and 0.30 mg/L total nitrogen prior to discharge to the Third Branch of the White River, and have downstream biological monitoring requirements consistent with Department protocols.

If you have any questions concerning this letter, please contact Carol Carpenter at 338-4832.

Sincerely,

Peter LaFlamme, Director
Watershed Management Division

cc: Rick Levey, MAPP

Carol Carpenter, Discharge Permits Section

Appendix A-21: F.E.M.A. Treatment Measure Proposal with S.H.P.O. Concurrence, December 15, 2016



U.S. Department of Homeland Security
FEMA Region I, Mitigation Division
Environmental & Historic Preservation Office
99 High Street, 6th Floor
Boston, MA 02110



FEMA

December 15, 2016

Jamie Duggan

Historic Preservation Review Coordinator
Vermont Division for Historic Preservation
National Life Building, 6th Floor
Montpelier, VT 05620-1201

RE: FEMA Disaster: DR-4022-VT (Tropical Storm Irene)
Undertaking: Repairs and new construction, Roxbury Fish Culture Station, Roxbury, VT
Determination: Adverse Effect, Use of Treatment Measures in Lieu of MOA
Sub-Grantee: Vermont Fish and Wildlife Department (VT F&WD)
Grant Applicant: Vermont Division of Emergency Management and Homeland Security (VT DEMHS)
Grant Program: Public Assistance (PA)

Dear Mr. Duggan,

As a result of damages caused by Tropical Storm Irene between 27 August and 2 September 2011, a Presidential disaster declaration, referenced as DR-4022-VT, makes Federal Emergency Management Agency (FEMA) Public Assistance (PA) funding available to local governments, state agencies, and eligible private non-profit organizations in all Vermont counties through the Vermont Division of Emergency Management and Homeland Security (VT DEMHS). The purpose of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1973 (Stafford Act), as amended, is to provide a range of federal assistance to state and local governments to supplement response and recovery efforts. Through the PA Grant Program, FEMA makes available, federal disaster grant assistance for; debris removal, emergency protective measures, and the repair, replacement, restoration, or relocation of eligible disaster-damaged, publicly owned facilities. Under these auspices, Vermont Fish and Wildlife Department (VT F&WD) has requested funding to repair and improve the Roxbury Fish Culture Station (Roxbury Fish Hatchery), located in Roxbury, VT.

The purpose of this letter is to request the Vermont Fish and Wildlife Department (VT F&WD) concurrence on FEMA's proposal to resolve the adverse effects for the undertaking described within this letter to reconstruct the Roxbury Fish Hatchery using treatment measures in lieu of a Memorandum of Agreement (MOA).

DESCRIPTION OF THE UNDERTAKING [36 CFR § 800.11 (e)1]

Project Location

The Roxbury Fish Culture Station, commonly referred to as the Fish Hatchery, is located at 3696 Roxbury Road, Roxbury, VT (44.06552, -72.74488 or Zone: 18; Easting: 0680605; Northing: 4881623), about two and a half miles south of town on Route 12A. The property itself sits on approximately ten (10) acres of land, narrow and oblong in shape, in a valley with the Central Vermont Railroad Line and a steep 1,700 foot rise to the immediate west, and Route 12A, the Third Branch White River, and a 1,500 foot hill to the east (*See Attachment 1*).

The Roxbury Fish Hatchery is the oldest of five hatcheries operated by the Vermont Fish and Wildlife Department, and produces about 85,000 catchable trout a year, which are stocked in area waterways and water bodies. An average of 2,500 visitors a year observe the hatching and rearing process at Roxbury, which operates through a series of five ponds, connecting raceways, and supporting buildings. Fresh water to the facility originates to the north and is collected in the spring house; then travels to the raceways, the five ponds, and finally into the Third Branch White River. The fish are born in the hatch house and placed in the ponds via VT Fish and Wildlife staff. Once the fish mature and reach the necessary stage for delivery or distribution, they are taken (could be any pond or raceway) and sent to selected waterways and water bodies typically within the watershed. (*See Attachment 1*).

Damage Description

Approximately 1,200 feet to the north of the property runs Flint Brook, which flows down the steep 1,700 foot west slope to connect with the Third Branch White River approximately 250 feet (75 m) south of the facility. During Tropical Storm Irene, Flint Brook overtopped its embankment and the wing-wall extension of the Oxbow Road bridge. Flood waters followed a ridge created by Route 12A and swept through the 1,100 foot long Fish Hatchery property before connecting with the Third Branch White River south of the hatchery. The supporting buildings had minor damage; the lab had extensive damage. The water carried a portion of a nearby residence into the Springhouse, destroying both structures. The ponds and raceways were damaged to an extent that rendered the facility inoperable for an extended period of time. The Fish Hatchery had similar flooding and damages in 1998 and 2006, including the loss of the ponds.

Scope of Work

Rather than repair the property to pre-disaster condition, the state will reconstruct the Hatchery in a way that protects the ponds and the fish therein from future damages. Existing historic buildings will remain; the ponds, aside from Pond #1 and 2, will not. The state will restore Ponds #1 and 2 to pre-disaster (though not functional) condition, and stock it with fish so that visitors can learn and understand the Hatchery's historic use.

Two enclosed pavilions with raised tanks will replace the function of the ponds, which offers better flood protection and also updates the complex to modern codes and standards. An Upper and Lower Tank Pavilion, built on the former location of ponds 3-5, will each consist of the following:

- Six (6) 20 foot diameter tanks with concrete bottoms, and stainless steel walls and roof.
- Each Pavilion will measure approximately 25 feet high, 75 feet wide and 80 feet long.
- To match the existing structures, the new Pavilions will be clad in white siding panels with green roofs, trim, wire mesh windows and green doors.

The change from ponds to tanks requires other modifications to the property, including:

- A new system of mostly underground pipes and pumps will bring water to the tanks, which requires that the water be better screened of leaves and debris, and the exit water must be chemically-treated, hence construction of an;
 - Influent Treatment Building
 - Effluent Treatment Building
 - Plastic-lined Chemical Pond.
- A new Stormwater Detention Pond, with associated rip-rap and check dams.

In addition, the state will bring the property into compliance with the Americans with Disabilities Act (ADA), which will include installation of handrails, guardrails, walkways, ramps, signage, and automatic doors. Along the retained Pond #2, a concrete walkway along the pond with railings to accommodate visitors will be installed. This walkway will allow visitors to approach the ponds at a distance which they can visualize and learn about the Hatcheries historical function and setting. A new Visitor Parking lot and Restroom Building will be located near Pond #2. Overall, the new design will also require grading to the topography in order to accommodate the new modifications. *(See Attachment 2)*

Based on coordination with US Army Corp of Engineers (USACE) and VT state regulatory agencies, aspects of the scope of work were required to change in order to comply with requirements from the USACE wetlands permitting process. These changes were finalized on October 20, 2016;

- Removal of storm water ditching in the northwest corner to avoid wetland impacts;
- Move parking out of wetland in north plot to in front of hatchery building: parking current use in front of building;
- Pond 1 to be restored from a wetland to a viewing pond (along with pond 2)

Design plans are currently being revised to address these changes. Once they are finalized, the applicant will share with all stakeholders to ensure compliance with the treatment measures identified in this document. *(See attachment 3)*

Area of Potential Effect

As defined in the Advisory Council on Historic Preservation's (ACHP) regulations, the Area of Potential Effect (APE) for a project is defined as, the "geographic area or area within which an undertaking may directly or indirectly cause changes in the character of or use of historical properties, if any such properties exist" (36 CFR 800.16[d]). The APE is based upon the "potential" for effect, which may differ for aboveground resources (historic structures and landscapes) and subsurface resources (archaeological sites). Factors with potential to cause effects include but are

not limited to; noise, vibration, visual (setting), traffic, atmosphere, construction, indirect and cumulative.

The APE for this undertaking is the entire ten (10) acre Fish Hatchery property. Construction of the tanks and other new structures has the potential to affect the property's historic design, setting, and feeling, yet will ensure the continued operation of this historic property. It is reasonable to expect material and equipment staging will be designated in the paved areas of the Hatchery driveways and parking areas. (*See Attachment 4*)

STEPS TAKEN TO IDENTIFY HISTORIC PROPERTIES [36 CFR § 800.4 (a) & (b)]

The Fish Hatchery was nominated for inclusion in the National Register of Historic Places (NRHP) in 1993, under Criteria A and C. The Fish Hatchery is eligible under Criterion A for its contribution and historic context regarding "Fish Culture in Vermont, 1850-1943". The Hatchery's method of using spring fed ponds is an essential component to its eligibility under this criterion. Most Hatcheries today rely on a system of tanks, retention ponds and pumped in water supplies.

The Fish Hatchery is eligible under Criterion C for embodying distinctive characteristics of fish culture stations; mainly from 1890s to the 1940s. The historical resources that contribute to its eligibility under Criterion C are the: Hatch House, Ice, Meat, and Cook House, the Ponds, carriage barn, storage barn, and stone barbecues (2).

Hatch House: The Hatch House was originally built in 1891 as a 1-1/2 story, 4 x 8 bay, 28 feet wide by 55 feet long, with a gable-front facing north. 30 feet were added to the southernmost side to lengthen the trough room (completed by 1896) to expand capacity. The northernmost 15 foot section of the building contains offices with the main entrance, a half-glass, horizontal-paneled door at the right bay of the façade, balanced by a batten door at the left bay. The present doors replace original four-paneled doors and the left bay entrance was widened, probably in 1938 when the interior was renovated. The façade is protected by a hipped roof, full width, and a concrete deck porch. When built, the front of the porch formed the wall of an approximately 25 feet square rearing pool that was part of a series of pools extending 75 feet north of the building. The elongated hatchery sits on a concrete foundation with clapboard siding and a gable roof covered with asphalt shingles with standing seam ice flashing at the ridge above the trough room and a brick chimney. The exterior has been relatively unchanged since its construction.

Ice, Meat, and Cook House: This structure appears at the hatchery by 1894 and is 25 feet x 30 feet. The house was constructed as a 1-1/2 story, 2 x 2 bay, gable-front, vernacular building facing west. The house is slightly elevated on a concrete foundation that appears to be a c. 1930 renovation. A walk-in freezer was added to the north c. 1950. The building has clapboard siding and a gable roof with a wide overhang and corrugated metal roofing with a bridge ridge chimney. An 1896 photo shows the façade originally had 6/6 double-hung sash in the two first story bays with the existing window in the gable.

The Ponds: The pond system has continuously been upgraded over the years. Most of the upgrades have been in modification to the layout and quantity of the ponds. An 1896 photograph shows that the ponds were located directly in front of the Hatch House. There have also been modifications to the water conveyance system. In 1895, rights to Burnham Brook (now Flint Brook) were obtained and plank flumes and open ditches were added to allow water to flow from the brook to the ponds. During summer months, spring water mixed with brook water to keep the

ponds cool and healthy, and in winter months this process prevented the ponds from freezing.

Adding surface water to ground water made the system “open”. An open system has the potential to hold contaminants from surface pollutants where well or spring water tends to be pure and contaminant free. Ten (10) reinforced concrete raceways (6 feet wide x 40 feet long) were constructed in 1912 on the west side of the hatchery near the railroad tracks. None of these are evident at the hatchery. In 1931-1932 the five (5) main ponds were rebuilt with new concrete headers and spillways installed. In 1937 the CCC constructed a linear series of six (6) raceways with a diversion channel at the southern end of the ponds which replaced earthen raceways.

Carriage Barn: Between 1896-1898, a 28 feet x 30 feet barn was built with a lean-to on each side to accommodate horses, harnesses, wagons, carts, sleds and associated equipment. The structure was originally a 1-1/2 story, 3 bay wide, with gable-front. The barn sat just north of the ice, meat, and cook house. The barn sits on a concrete foundation and faces west. Full length lean-tos are attached to the north and south eaves side. The barn has clapboard siding and an asphalt shingle roof.

Storage Barn: The storage barn was built by the CCC in 1934-35 near VT Route 12A to the south of the Superintendent’s House and was associated with that structure. The barn is 1-1/2 story, 35 feet x 45 feet, with a gable-front. Currently it is used for storage, it sits on a concrete pier foundation with vinyl siding covering the original clapboards and has asphalt shingles laid in a basket weave pattern. The façade has three pairs of diagonal boards, double leaf doors with canted framing.

Barbeques: In 1938, the CC built two stone barbeques due to the high volume of tourist activities on site. The barbecues are located on a bluff that overlooks the facility.

Biology Research Lab: Since 1950 there has been an expanding focus to protect wildlife habitat and insure the general health of fish and wildlife. At the time of the lab’s construction c. 1960, there was an increased interest in fish disease prevention, which showcases the trend in this focus and the hatchery’s dedication to conform to it. The lab is a 4 x 2 bay, eaves-front, ranch style building facing east. The building is slightly elevated on a concrete foundation with a concrete deck entry built into a bank. The east and south sides are 1 story, and the west and north sides are 2 stories.

The Hatch House, Ice House, Ponds and CCC raceways, Carriage Barn, Storage Barn, and Stone Barbecues exist on the property today. Two additional structures -- the Biology Lab (1960) and Springhouse (1960, rebuilt 2012) -- were non-contributing elements on the 1993 Nomination form based on their age. The Biology Lab is now over fifty years old and can be considered contributing following an amendment to the Period of Significance of the National Register nomination. There are no other historic resources located near the Hatchery that could be affected.

Since the project also involves a moderate amount of ground disturbance from grading, archaeological sensitivity was a special consideration. On September 18, 2014 Scott Dillon from the Vermont Division for Historic Preservation visited the location with Adam Miller and Jeremy Whalen and later indicated “The purpose of the site visit was to review the entire Area of Potential Effect (APE) for the proposed reconstruction project with regard to archaeological resources. The site visit confirmed that there are no archaeologically sensitive areas within the proposed project footprint. Accordingly, the Division concludes that the RFCS reconstruction project will have no effect on any archaeological historic sites.”

EVALUATION OF HISTORIC SIGNIFICANCE [36 CFR § 800.4(c)]

Historical Context

The state of Vermont established the Roxbury Fish Hatchery in 1891, following the lead of nearby states and the federal government at a time when fish conservation and recreational fishing were rising in popularity. At the time, it was the first state-operated fish culture station in Vermont. Prior to 1890, Vermont State Fish Commissioners purchased or obtained fish eggs from private or federal hatcheries, incubated the eggs, and reared the resultant fry for release in Vermont lakes, streams, and ponds. This process was becoming costly as result of the increase in fishing and conservation, so the Vermont Legislature appropriated funding for the Roxbury

Fish Culture Station. The state chose the Roxbury location for specific reasons: a local man donated the land, fish could easily be transported via the adjacent rail line, Flint Brook (then Burnham Brook) and a naturally occurring spring provided a source of fresh water. The first items built at the site were the Hatchery Building (Hatch House) in 1891 and four ponds.

By 1894, the Hatchery had eight ponds and an Ice House Building (for cold storage and transport uses). A Superintendent's House followed in 1897 (demolished in 1970 and replaced with a temporary mobile home), with a Carriage Barn following in 1897. The modern configuration of the five ponds likely appeared after 1912. In the 1930s, the Civilian Conservation Corp (CCC) built a number of structures at the Hatchery: the Storage Barn (1935), new raceways (1937), and two stone barbecues (1937). They also renovated the Hatch House in 1938.

Determination of Eligibility

Per National Register Bulletin 15, there are seven aspects of integrity to be considered in determining eligibility for the National Register: *Location, Design, Setting, Materials, Workmanship, Feeling and Association.*

The *location* of the fish hatchery will not change. The state chose the Roxbury location for specific reasons: a local man donated the land, fish could easily be transported via the adjacent rail line, and Flint Brook (then Burnham Brook) and a spring provided a source of fresh water. The state continues to own this land. The rail line, although still intact and operational, is no longer used by the fish hatchery. Flint Brook and the spring continue to provide a source of water for the hatchery.

The *design* will change extensively with the implementation of this proposed project, yet ensure continued operation of the hatchery and its protection from future natural disasters. The hatchery's current design is based around a system of ponds, five (5) total, that are pivotal to the rearing and hatching process at the hatchery. The structures will remain largely intact and Ponds

#1 and #2 will remain for educational and historic preservation purposes. The other ponds will be exchanged for tank pavilion structures to reflect a modernization with current standards for fish production. The incorporation of the proposed changes, necessary for the ongoing use of this site, will enable the hatchery to document the history of this resource type's evolution from open ponds in the late 19th century to tank pavilions of the 21st century. The buildings with chemical pond at the southernmost end will follow the configuration of Ponds 3, 4, and 5 and the raceway.

The *setting* will be altered to a similar degree as the design. The setting will appear different

with tank pavilions replacing the ponds at the southernmost end of the property where Ponds 3, 4, and 5 and the raceway existed prior to Tropical Storm Irene. As part of the modification process, the area will require grading and excavation to accommodate the new tank pavilions, influent and effluent treatment buildings, parking areas and access and additional drainage measures. The location of the hatchery directly alongside VT Route 12A makes the setting alteration highly visible. The immediate setting around the property will not be altered.

The *materials* will be modernized, as witnessed in the switch from a pond system connected by raceways to tanks protected in pavilions. Without ponds, there is no need for raceways and thus new materials will be in use as the methodology in rearing and hatching fish will change to accommodate a tank system. The materials of the historic carriage barn, ice house, hatch house, storage barn, and ponds #1 and #2 will not be altered.

The *workmanship* as with the materials will be modernized to accommodate the tank system. The structures will remain and although many have been renovated or rebuilt over the years due to changes in fish hatchery technology and the devastation caused by Tropical Storm Irene, the Springhouse being the most recent (2012 after Tropical Storm Irene compromised the structural integrity), the ponds exemplified a characteristic of hatchery's that is rare with the current technology available for rearing and hatching fish.

The *feeling* of the hatchery was closely attached to the pond system. The pond system was over 100 years old and exhibited the character-defining history that was associated with the hatchery. The loss of the pond system affects the feeling of a historic representation of the Roxbury Fish Hatchery at the turn of the 20th century. However, the retention of Ponds #1 and #2 as well as the existing historic core consisting of the carriage barn, ice house, hatch house, and storage barn serve to recount the historic context of the fish hatchery and the changing technology from its founding in 1891 to present day.

The *association* will remain as the facility will continue to function as a fish hatchery.

Based on these factors, it is FEMA's determination that the Roxbury Fish Hatchery will remain eligible on the NRHP under Criteria A and (potentially) C through the implementation of the project defined in this letter. As part of the treatment measures, the current NRHP nomination form will be amended in part to address historic integrity.

FINDING OF EFFECT [36 CFR § 800.4(d) and 800.5]

FEMA has determined that despite the proposed work at the Roxbury Fish Hatchery, the facility will remain eligible on the NRHP and results in a determination of "*adverse effect*" to this historic property. The ponds, though damaged, largely retain their 1912 configuration, appearance, and use so the removal of 3 of the 5 existing is a major impact. In addition, although the historic buildings will remain, the visual impact and the change in configuration of the Roxbury Fish Hatchery due to the new construction will adversely affect what the National

Register nomination described as the original “park-like setting” of the property and its existing buildings.

REQUEST FOR CONCURRENCE

Pursuant to Stipulation III.C.5.a.ii and Appendix E of the FEMA-SHPO-VEM-ACHP Programmatic Agreement for Vermont, this is FEMA’s written proposal to your office on the implementation of a combination of Treatment Measures by VT F&WD to expedite the resolution of the aforementioned adverse effects without the need to enter into a Memorandum of Agreement (MOA). **We request your office’s concurrence on FEMA’s finding of Adverse Effect and this treatment measure proposal within fourteen (14) days of receipt.** Upon concurrence of a Treatment Measure proposal, FEMA will include completion of items within the proposal as a condition of the grant.

Per Appendix E and past discussions with your office and VT F&WD, FEMA proposes implementation of the follow Treatment Measures:

B. Design Review by SHPO (pg. 45-46)

*Prior to project implementation, FEMA, VEM, and the Subgrantee shall work with the SHPO to develop a historically compatible construction approach. Plans and specifications will, to the greatest extent feasible, preserve the basic character of a building with regard to the design, scale, massing, fenestration patterns, orientation and materials of the original building. Primary emphasis shall be given to the major street elevations that are visible. Significant contributing features (e.g. trim, windows, doors, porches) will be repaired or replaced with either in-kind materials or materials that come as close as possible to the original materials in basic appearance. Aesthetic camouflaging treatments such as use of veneers, paints, texture compounds and other surface treatments and/or use of sympathetic infill panels and landscaping features will be employed to the greatest extent feasible. **Final construction drawings will be submitted to the SHPO for review and comment prior to the award of a construction contract and the initiation of construction activities.***

VT F&WD has already committed to the following:

- New structures will be designed to match existing conditions to avoid stark contrast with historic structures. For example, new construction will include white buildings with green trim.
- The landscape will aesthetically improve in appearance (akin to the original landscape) when power lines to existing buildings and new buildings are installed underground, with just two exceptions:
 - Two overhead transmission lines, owned by the power company, that cross the property will remain above ground. The first comes across the north part and runs west to service residents on the east side of 12A. The second runs south along the railroad and supplies power to the lab building south of the hatchery.

- Cedar trees along the west side of pond 1 will remain as a “living outline” of the old pond; no cedar trees around pond 2 will be removed as they will perform a critical function for preserving the setting of pond 2 which will be restored for interpretative purposes.

C. Public Interpretation (pg. 46)

Prior to project implementation, FEMA, VEM, and the Subgrantee will work with the SHPO to design an educational interpretive plan. The plan may include signs, displays, educational pamphlets, websites and other similar mechanisms to educate the public on historic properties within the local community, state, or region. Once an interpretive plan has been agreed to by the parties, SHPO and the Subgrantee will continue to consult throughout implementation of the plan until all agreed upon actions have been completed by the Subgrantee.

VT F&WD has already committed to the following:

- Bringing pond 1 back as a viewing pond
- Bringing pond 2 back to operational status and have a concrete sidewalk with railings on the east side for viewing. There will not be any new platforms overhanging the pond (that would historically be inaccurate), see
- Adding signage in the walkway area and next to the stone barbeques that would contain photos and explanations of “Roxbury of the past”.
- Install feed dispensing machines for additional public outreach.
- Roadside Historic Marker has been ordered through the Division for Historic Preservation and has already been installed.

G. National Register Nomination Amendment (pg. 47)

Prior to project implementation, FEMA, VEM, and the Subgrantee will work with the SHPO to identify the individual properties that would benefit from an amended National Register nomination form. Once the parties have agreed to a property, the Subgrantee shall continue to coordinate with the SHPO through the drafting of the nomination amendment. The SHPO will provide adequate guidance to the Subgrantee during the preparation of the nomination form and shall formally submit the final nomination to the Keeper for inclusion in the National Register. The Subgrantee will use staff or contractors that meet the Secretary’s Professional Qualifications for the appropriate discipline.

VT F&WD has already committed to the following:

- Working with the SHPO to select the appropriate qualified consultant/contractor to updated the existing National Register nomination to include the post-project changes to the historic property. This updated will be approved, as appropriate, by the SHPO office and submitted to to the National Park Service as an update to the original nomination form.
 - o The amendment should outline the changes to the property because of new technologies in fish hatchery and the impacts flooding has had on the site since its founding. The amendment should identify a more appropriate

period of significance that includes the changes to the property for these reasons, review the contributing and non-contributing status of the resources including the site itself, and address the applicable criteria. Because of the alterations to the property over the years, Criterion C may not be appropriate.

We are delighted to have your enthusiastic support for this project and ask that you contact us with any questions that you may have at (857) 205-2860 or Lydia.Kachadoorian@fema.dhs.gov or Marcus Tate at Marcus.Tate@fema.dhs.gov or (617) 784-4712. Thank you for your prompt review.

Sincerely,



Digitally signed by LYDIA A KACHADOORIAN
DN: c=US, o=U.S. Government, ou=Department of
Homeland Security, ou=FEMA, ou=People, cn=LYDIA
A KACHADOORIAN,
0.9.2342.19200300.100.1.1=0512249664.FEMA
Date: 2016.12.15 12:12:10 -05'00'

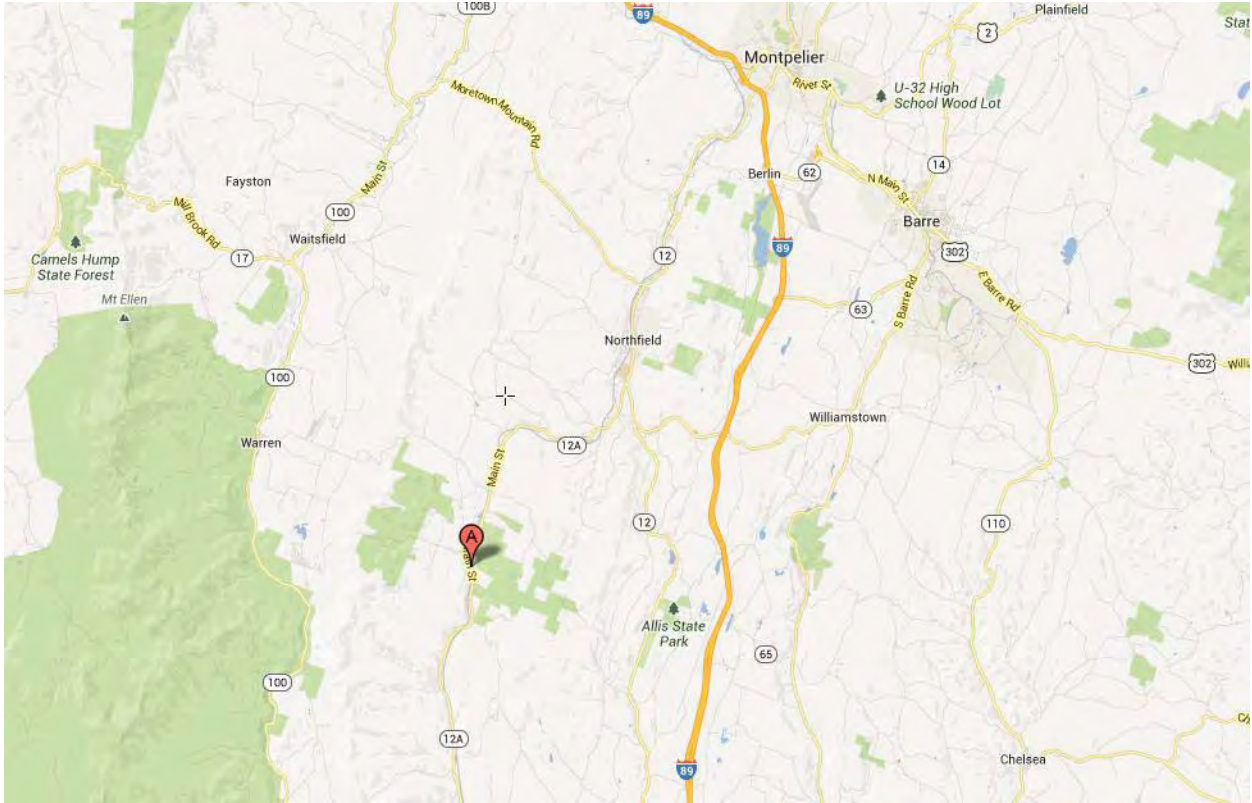
Lydia Kachadoorian, RPA
Deputy Regional Environmental Officer
FEMA Region 1, New England

Attachments:

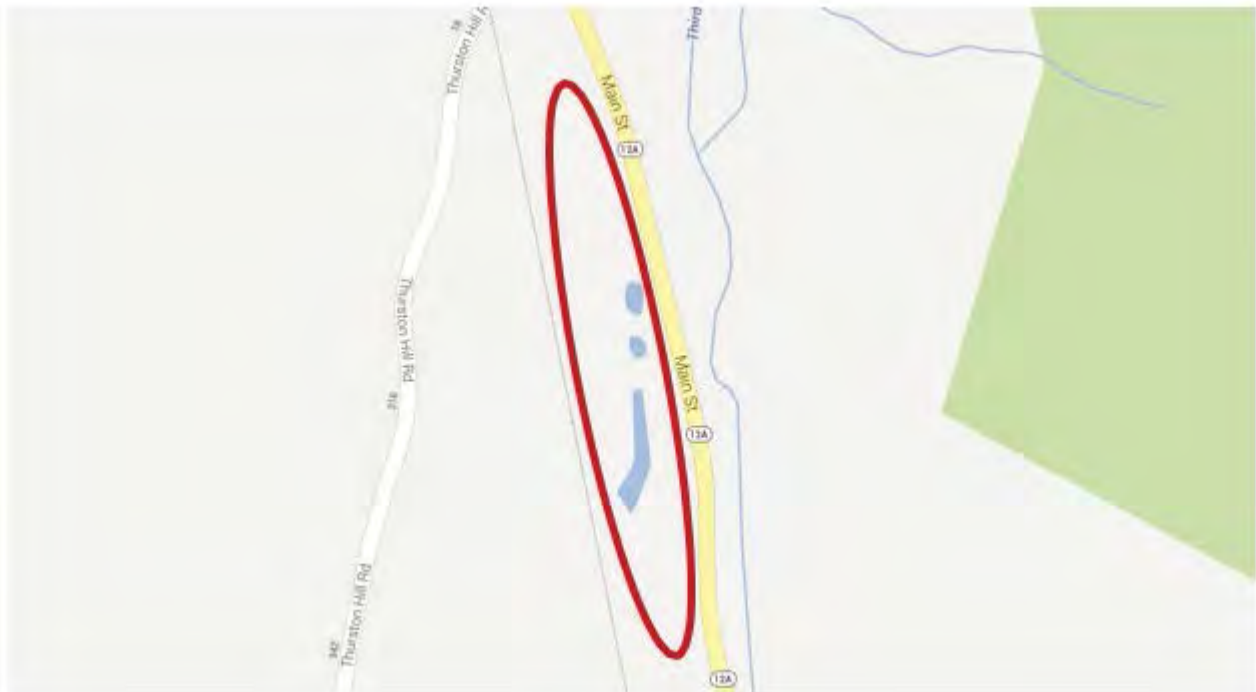
- 1: Location Maps
- 2: Photographs
- 3: November 4, 2016 email exchange identifying scope of work change 4: APE Map

CC: David Robbins, FEMA Region I Regional Environmental Officer
Mike Wichrowski-Vermont Fish & Wildlife Department- Lands & Facilities Administrator
Mary Andes-Division of Emergency Management and Homeland Security- DEMHS Special Project Analyst to the Director

Attachment 1: Maps



The Roxbury Fish Hatchery is marked by the red arrow above (Point A)



The Fish Hatchery is approximately outlined by the red oval in this street map



The Fish Hatchery is approximately outlined by the red oval in this post-disaster aerial view



The Fish Hatchery is approximately outlined by the red oval in this street map

Attachment 2: Context Photographs

Pre-Disaster Photos:



The Fish Hatchery c. 1907-1915 looking southeast. The Hatch House is at center.



The Hatch House shortly before Tropical Storm Irene, looking southwest.



Pond #2 shortly before Tropical Storm Irene, looking south with the roof of the Springhouse visible at rear



Pond #3 and 4 shortly before Tropical Storm Irene, looking east towards Route 12A.

Post-Disaster Photographs:



The Hatch House immediately after Tropical Storm Irene, looking southwest



The Raceway (looking north) immediately after Tropical Storm Irene. The Hatch House is the left building, and the Ice House is the right building.



The Raceway and Pond #4 (looking north) immediately after Tropical Storm Irene



Pond #4 (looking south) immediately after Tropical Storm Irene



Pond #3 (looking north) immediately after Tropical Storm Irene. The Hatch House is on the left, and the Ice House is to the right.



The Hatchery in September 2013 (looking north from near the raceway)



Pond #5 in September 2013 looking north towards the Ice House



The Hatchery in September 2013 looking north from near Route 12A

Tate, Marcus

From: Duggan, James <James.Duggan@vermont.gov>

Sent: Friday, November 04, 2016 11:06 AM

To: Tate, Marcus; Trieschmann, Laura

Cc: Kachadoorian, Lydia; Robbins, David

Subject: RE: Wetland update

Marcus

My understanding is that with these changes BOTH pond 1 and pond 2 will be retained and part of the interpretation of historic setting and use.

Removal of storm water ditching is a plus for us.

Parking adjustment to front of hatchery is a reasonable compromise, considering retention of Pond 1, however I am still encouraging the minimal use of asphalt and consideration of other appropriate paving for a more natural aesthetic.

I have not yet seen these changes in plan, but conceptually we do support them. I do not think this will have a significant impact on treatment measures.

Thanks
Jamie

James P. Duggan | Senior Historic Preservation Review Coordinator
Vermont Division for Historic Preservation

Department of Housing and Community Development
(802) 477-2288

james.duggan@vermont.gov

----- Original message -----

From: "Tate, Marcus" <Marcus.Tate@fema.dhs.gov> Date:
11/4/16 10:24 AM (GMT-05:00)

To: "Duggan, James" <James.Duggan@vermont.gov>, "Trieschmann, Laura"
<Laura.Trieschmann@vermont.gov>

Cc: "Kachadoorian, Lydia" <Lydia.Kachadoorian@fema.dhs.gov>, "Robbins, David"
<David.Robbins@fema.dhs.gov> Subject:

FW: Wetland update

Jamie/Laura,

See below. We have been holding off on the concurrence letters for the treatment measures in preparation for this information below. We want to ensure that these changes to the scope do not impact our determination thus far. It appears that (at least) Jamie has been involved to some degree. The biggest impact to our consultation seems to be the switch from Pond 2 to Pond 1 as the pond that will be retained and used for educational purposes as a viewing pond.

Please confirm that you have been involved and have approved of these changes. Furthermore please let us know if you feel that these changes can still be mitigated by the current proposed treatment measures that we have discussed or if we need to discuss additional measures. It appears that some changes already have elements of mitigation to the adverse effect and we can make sure that is captured in the request for concurrence.

Thanks,

Marcus Tate EHP Manager
FEMA-Environmental and Historic Preservation Region 1-Boston MA
99 High St, 6th Floor Cell: (617) 784-4712
Desk: (617) 956-7675

From: Whalen, Jeremy [mailto:Jeremy.Whalen@vermont.gov]

Sent: Friday, November 04, 2016 9:53 AM

To: Tate, Marcus

<Marcus.Tate@fema.dhs.gov> **Cc:** Miller,

Adam <Adam.Miller@vermont.gov> **Subject:**

Wetland update

Importance:

High Marcus,

I left you a message the other day and wanted to follow up with an email. I wanted to provide you with an update on the wetlands portion of the EA. VTFW received from VTDEC wetlands Laura Woods the approved wetlands permit 2016-308. In the determination the petition to change the Class II wetland designation to a class III was approved.

We received on 10/20/16 confirmation from USACE, that VTFW has addressed the issues brought up by the USACE and EPA. In that confirmation USACE recommends VTFW submit revised plans and submit a General Category 2 permit, I am attaching the memo VTFW submitted to USACE. Highlights to the design change include:

- Removal of storm water ditching in the northwest corner to avoid wetland impacts; approved by DEC storm water
- Moved parking out of wetland in north plot to in front of hatchery building: approved by SHPO Jamie Duggan parking current use in front of building.
- Pond 1 to be restored from a wetland to a viewing pond: SHPO request to strength historic core

In these above avoidance measures VTFW was able to reduce the impact on wetlands from .71 acres to .54 acres. VTFW was unable to avoid impacts in the south end with moving chemical detention pond and storm water. VTFW was diligent in discussing potential impacts of avoidance with respective state agencies including SHPO and others.

VTFW is seeking your approval to move forward with the EA, giving the complete vetting of the USACE memo and wetland permit in hand from VTDEC. VTFW would direct Stone environmental to include the VTDEC wetland permit and USACE memo in the EA. Additionally VTFW would add the corrected plans that are being produced for the category 2 permit, which include four sheets (Overall site plot, North plot, Center plot, South plot).

I am attaching supporting documents for your review. If you have any question or want to discuss further you can reach me at 802-272-3832.

Thank you,
Jeremy



Jeremy Whalen, Fisheries Division

[phone] 802-485-7568 [fax] 802-485-7568

[email] Jeremy.Whalen@vermont.gov

[website] www.vtfishandwildlife.com

**Vermont Fish & Wildlife Department
Roxbury Fish Culture Station**

3696 Roxbury Rd
Roxbury VT 05669



APE Map



Appendix A-22: Act 250 Jurisdictional Determination, May 17, 2016

From: [McParland, Terra](#)
To: [Baird, Susan](#)
Cc: Miller, John; Miller, Adam
Subject: RE: Roxbury SFH and ACT 250
Date: Wednesday, October 23, 2013 3:12:44 PM

Thanks so much for the response. It was great talking with you the other day. Take care, Terra

From: Baird, Susan [mailto:Susan.Baird@state.vt.us]
Sent: Wednesday, October 23, 2013 2:10 PM
To: McParland, Terra
Cc: Miller, John; Miller, Adam
Subject: RE: Roxbury SFH and ACT 250

Hi Terra:

Thanks for the very complete submittals, which have demonstrated that the project does not constitute a development, pursuant to 10 V.S.A. 6001(3)(A)(v), and thus did not and does not require an Act 250 permit.

Apologies for taking longer than intended to respond.

Please don't hesitate to give me a call at 476-0134 or send an e-mail with any further questions. Regards,
Susan

From: McParland, Terra [mailto:Terra.McParland@hdrinc.com]
Sent: Friday, October 18, 2013 11:39 AM
To: Baird, Susan
Cc: Miller, John; Miller, Adam
Subject: Roxbury SFH and ACT 250

Hi Susan,

It was nice talking with you today. Per our phone conversation, I'm attaching the following to facilitate your review:

1. Project Description taken from the Contract Specifications
2. Location Map and Site Plan of existing and planned improvements
3. Project Description taken from the Association of Conservation Engineers (ACE) newsletter which provides further description of the project.

Please let me know if you need further information. As you mentioned, you're out on Monday but hope to respond to us by Tuesday or Wednesday.

Thanks for your help and have a great weekend!

Terra

TERRA MCPARLAND
PE, LEED AP BD+C, ENV SP
HDR Engineering, Inc.

Environmental Engineer
5201 South Sixth Street Road | Springfield, IL 62703
217.585.8300
Terra.McParland@hdrinc.com | hdrinc.com

Reduce, Reuse, Recycle – US EPA

From: Whalen, Jeremy <Jeremy.Whalen@vermont.gov>
Sent: Wednesday, May 18, 2016 7:46 AM
To: Tate, Marcus
Cc: Steven Hubbs; Miller, Adam
Subject: FW: Roxbury hatchery reconstruction ACT 250
Attachments: RE_ Roxbury SFH and ACT 250.pdf
Importance: High

Marcus,

Below is an email re-confirming that the Roxbury project doesn't need Act 250 review. I have also attached the original email from Susan stating the project doesn't trigger Act 250.

Thank you, Jeremy

From: Baird, Susan
Sent: Tuesday, May 17, 2016 4:22 PM
To: Whalen, Jeremy <Jeremy.Whalen@vermont.gov>
Cc: Baird, Susan <Susan.Baird@vermont.gov>
Subject: RE: Roxbury hatchery reconstruction ACT 250

Hi Jeremy:

As long as the project will proceed as described in 2013, the jurisdictional determination that an Act 250 permit is not required stands.

Please don't hesitate to contact me with any further questions. Regards, Susan Baird, District Coordinator

From: Whalen, Jeremy
Sent: Tuesday, May 10, 2016 1:02 PM
To: Baird, Susan <Susan.Baird@vermont.gov>
Subject: Roxbury hatchery reconstruction ACT 250

Susan,

I am attaching an email exchange you had with the firm Fish and Wildlife had contracted to rebuild the hatchery after Irene. In the email you stated the project didn't need a ACT 250 permit based on the information supplied about the project. We have recently received authorization and funding from legislature to start construction late fall or early spring and I wanted to reconfirm that the project still doesn't trigger ACT 250 review.

Thank you,
Jeremy Whalen



Jeremy Whalen, *Fisheries Division*

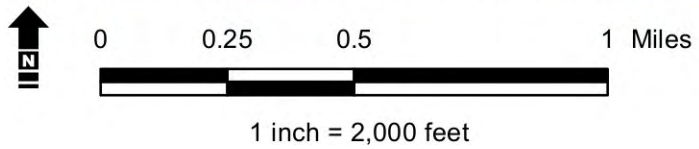
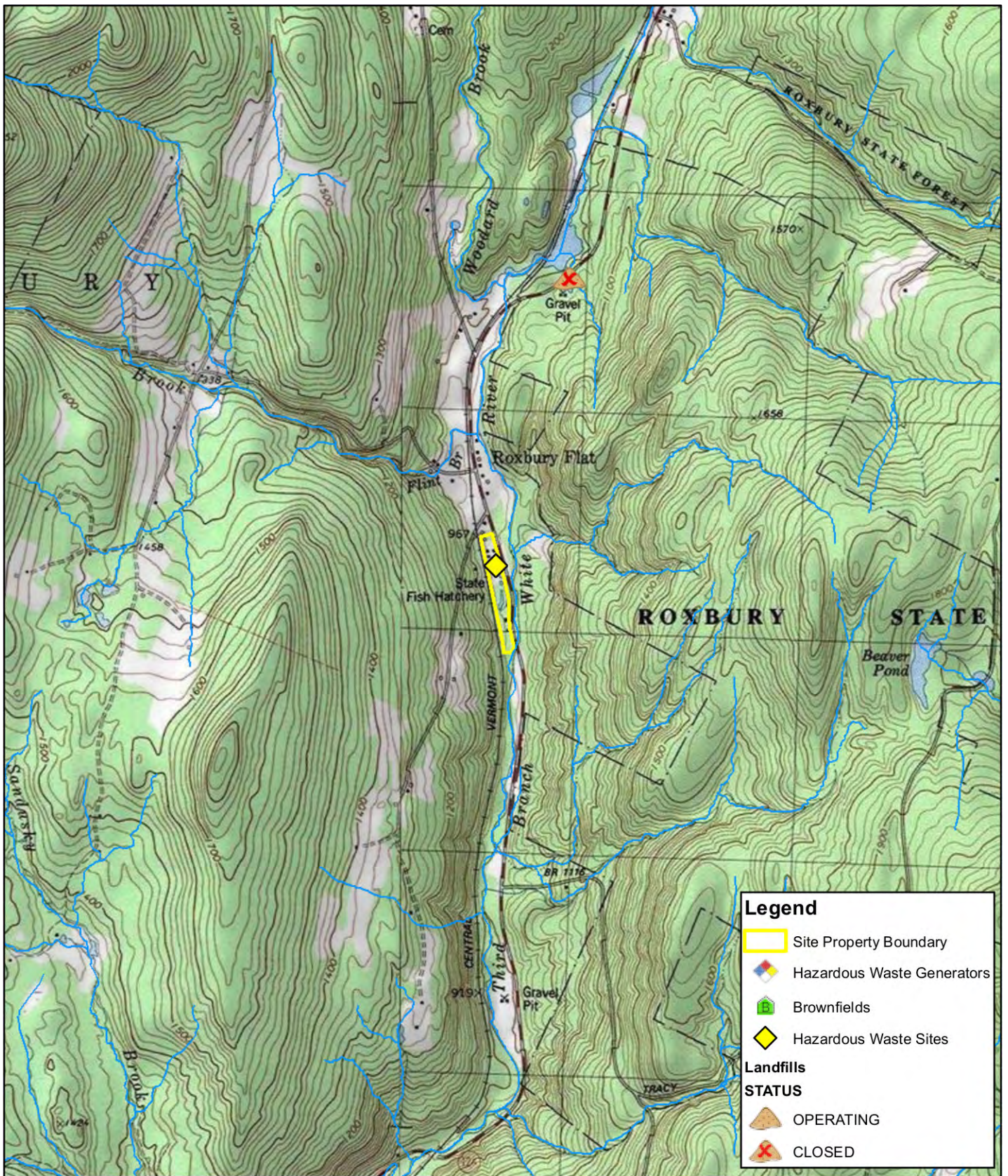
[phone] 802-485-7568 [fax] 802-485-7568
[email] Jeremy.Whalen@vermont.gov
[website] www.vtfishandwildlife.com

Vermont Fish & Wildlife Department
Roxbury Fish Culture Station
3696 Roxbury Rd
Roxbury VT 05669



Please note: My email has changed to: Jeremy.Whalen@vermont.gov

Appendix A-23: V.A.N.R. Managed Environmental Sites Map



SOURCES
 (1) Town of Roxbury Assessor's Parcels, 1993 (VCGI)
 (2) USA Topo Basemap (ESRI)
 (3) Hazardous Waste Sites, Landfills, Brownfields, and Hazardous Waste Generators (VT Natural Resources Atlas)



Location: User-specified linear location

Ring (buffer): 3-mile radius

Description: Roxbury Fish Culture Station

Summary of ACS Estimates		2008 - 2012		
Population				384
Population Density (per sq. mile)				11
Minority Population				5
% Minority				1%
Households				194
Housing Units				288
Housing Units Built Before 1950				88
Per Capita Income				24,405
Land Area (sq. miles) (Source: SF1)				34.02
% Land Area				100%
Water Area (sq. miles) (Source: SF1)				0.04
% Water Area				0%
		2008 - 2012 ACS Estimates	Percent	MOE (±)
Population by Race				
Total		384	100%	120
Population Reporting One Race		383	100%	172
White		380	99%	122
Black		0	0%	9
American Indian		3	1%	14
Asian		1	0%	9
Pacific Islander		0	0%	9
Some Other Race		0	0%	9
Population Reporting Two or More Races		0	0%	11
Total Hispanic Population		2	0%	12
Total Non-Hispanic Population		382		
White Alone		378	99%	121
Black Alone		0	0%	9
American Indian Alone		3	1%	14
Non-Hispanic Asian Alone		1	0%	9
Pacific Islander Alone		0	0%	9
Other Race Alone		0	0%	9
Two or More Races Alone		0	0%	11
Population by Sex				
Male		187	49%	69
Female		197	51%	80
Population by Age				
Age 0-4		31	8%	38
Age 0-17		70	18%	49
Age 18+		313	82%	106
Age 65+		51	13%	56

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

Source: U.S. Census Bureau, American Community Survey (ACS) 2008 - 2012.



Location: User-specified linear location

Ring (buffer): 3-mile radius

Description: Roxbury Fish Culture Station

	2008 – 2012 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	305	100%	82
Less than 9th Grade	8	3%	17
9th - 12th Grade, No Diploma	42	14%	32
High School Graduate	98	32%	62
Some College, No Degree	79	26%	55
Associate Degree	28	9%	28
Bachelor's Degree or more	79	26%	44
Population Age 5+ Years by Ability to Speak English			
Total	353	100%	104
Speak only English	338	96%	107
Non-English at Home ¹⁺²⁺³⁺⁴	15	4%	20
¹ Speak English "very well"	13	4%	20
² Speak English "well"	2	1%	10
³ Speak English "not well"	0	0%	10
⁴ Speak English "not at all"	0	0%	9
³⁺⁴ Speak English "less than well"	0	0%	10
²⁺³⁺⁴ Speak English "less than very well"	2	1%	10
Linguistically Isolated Households*			
Total	0	0%	9
Speak Spanish	0	0%	9
Speak Other Indo-European Languages	0	0%	9
Speak Asian-Pacific Island Languages	0	0%	9
Speak Other Languages	0	0%	9
Households by Household Income			
Household Income Base	194	100%	49
< \$15,000	44	23%	32
\$15,000 - \$25,000	15	8%	26
\$25,000 - \$50,000	76	39%	47
\$50,000 - \$75,000	40	21%	35
\$75,000 +	19	10%	35
Occupied Housing Units by Tenure			
Total	194	100%	49
Owner Occupied	152	79%	48
Renter Occupied	41	21%	29

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

Source: U.S. Census Bureau, American Community Survey (ACS) 2008 - 2012.

*Linguistically Isolated Households is available at the census tract summary level and up.

EJSCREEN ACS Summary Report



Location: User-specified linear location

Ring (buffer): 3-mile radius

Description: Roxbury Fish Culture Station

	2008 - 2012 ACS Estimate	Percent	MOE (±)
Population by Language Spoken at Home**			
Total (persons age 5 and above)	353	100%	104
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

Source: U.S. Census Bureau, American Community Survey (ACS) 2008 - 2012.

**Population by Language Spoken at Home is available at the census tract summary level and up.

Appendix A-25: List of Permits Required for the Proposed Action

The following permits will be obtained as part of the Proposed Action. Each permit will be obtained from the primary permitting agency indicated in parentheses after each permit.

1. Stormwater Construction General Permit 3-9020 (V.D.E.C.)
2. Stormwater Discharge General Permit 3-9015 (V.D.E.C.)
3. Wastewater System and Potable Water Supply Permit (V.D.E.C.)
4. N.P.D.E.S. Discharge Permit (V.D.E.C.)
5. Department of Public Safety Construction Permit (D.P.S.)
6. Division of Fire Safety Tank Permit (D.P.S.)
7. Fire Safety Storage and Use Plan for generator diesel tank (D.P.S.)
8. Programmatic General Permit for Vermont (U.S.A.C.E.)

NOTICE OF PUBLIC INFORMATIONAL MEETING

ABOUT FUTURE PLANS FOR THE ROXBURY FISH HATCHERY AND FLOOD MITIGATION OPPORTUNITIES ON FLINT BROOK

7:00 PM

Tuesday, January 21, 2014

**Roxbury Town Hall/Village
School**

We want to hear from you.

- Representatives from several State of Vermont Agencies (Agency of Transportation, Dept. of Fish and Wildlife, and Div. of Emergency Management and Homeland Security) will present information about future plans for rebuilding the Roxbury Fish Hatchery and mitigating the risks of future flood damage from Flint Brook.
- Stantec, an engineering firm under contract to VTRANS, has developed a study of Flint Brook alternatives and will present their results.
- This meeting will be open to the public and there will be opportunity for questions and comments.



If you are unable to attend and/or have comments/questions, please contact Ben Rose, Recovery and Mitigation Section Chief, Div. of Emergency Management and Homeland Security, at ben.rose@state.vt.us, Office/Cell: (802) 585-4719; or Adam Miller, Fish Culture Operations Manager, Vermont Agency of Natural Resources Fish and Wildlife Department at adam.miller@state.vt.us, Office/Cell: (802) 777-2852

Flint Brook/ Oxbow Road Informational Meeting

January 21, 2014 – Roxbury Town Hall

Project Overview by Paul Libby

Fish Hatchery Presentation by Adam Miller, Jeremy Whalen

- Estimated 2.4 million economic value
- 2100 annual visitors
- Old pond would not have met current permitting requirements
- Estimated construction costs of \$4,575,543, 80.8% of that required for water treatment
- Applying for extension from FEMA to obtain funding
- Will need to pursue additional funding from the VT Legislature
- Optimistic construction start date of Spring 2015
- Question and answer period:

Q – Are you trying to re-build the Hatchery oxbow Road is repaired? A – The intent is to have both constructed concurrently.

Q – What if you create more problems such as flooding to my land? A – A hydraulic study will address impacts to surrounding area.

Q – Has the State considered buying property north of the Hatchery site? A – It is being considered.

Q – What are ideas for fixing the retaining wall? A – This will be discussed with the next presentation.

Recovery Process by Ben Rose

- Optimistic outlook that VT can obtain an extension from FEMA for additional funding of the Fish Hatchery project.
- FEMA wants to see infrastructure upgrade to minimize future risk to the site.

Oxbow Road Presentation by Greg Edwards

- Four alternatives were presented:
 - Alt A - No action
 - Alt B - Improve existing infrastructure
 - Alt C – Realignment
 - Alt D – Diversion channel
- Hydraulic analysis shows that the current wall can hold the 100 year storm and meets current standards.
- Higher standards are being considered, 250 or 500 year event.

- Alternative comparison

Alternative	Total Structures	Costs
A	4	\$0
B	3	\$2.1 million
C	4	\$2.4 million
D	6	\$1.7 million

- The State's preferred alternative was B
- Question and answers:

Q – During Irene approximately $\frac{3}{4}$ of the stormwater went down the current alignment and $\frac{1}{4}$ went down the original brook alignment.

Q – Did you look at where the original path was? A – Yes, this brook is on an Alluvial Fan and has done almost a 180 degree turn.

Q – The brook went 15 feet north of the cemetery near Thurston Hill Road.

Q – Is there enough depth to accommodate the realignment? Could you even fit a structure on this new alignment? How wide is the brook bed? A – The proposed brook bed would be approximately 40 feet wide.

Q – Would the new channel be a concrete sluiceway? A – No, a stone lined channel.

Q – Was a ROW buyout cost considered? A – Yes, from tax information.

Q – Who will pay for the project? A – Still to be determined.

Q – Is the existing Route 12A structure sufficient? A – Yes, it is hydraulically sufficient for more than a 100 year storm.

Q – What is the Town's involvement? Who own's the wall? A – FEMA makes grants to the State, then the State makes sub grants

Q – The Town was responsible for \$47,000 damage after Irene and \$1,055,000 after July 3rd, 2013 storm.

Q – Where is the Railroad in all of this?

Q – One selectboard member preferred Alternative C, there was also support from others for Alt. C and Alt. D

FEMA Region 1 Environmental Assessment

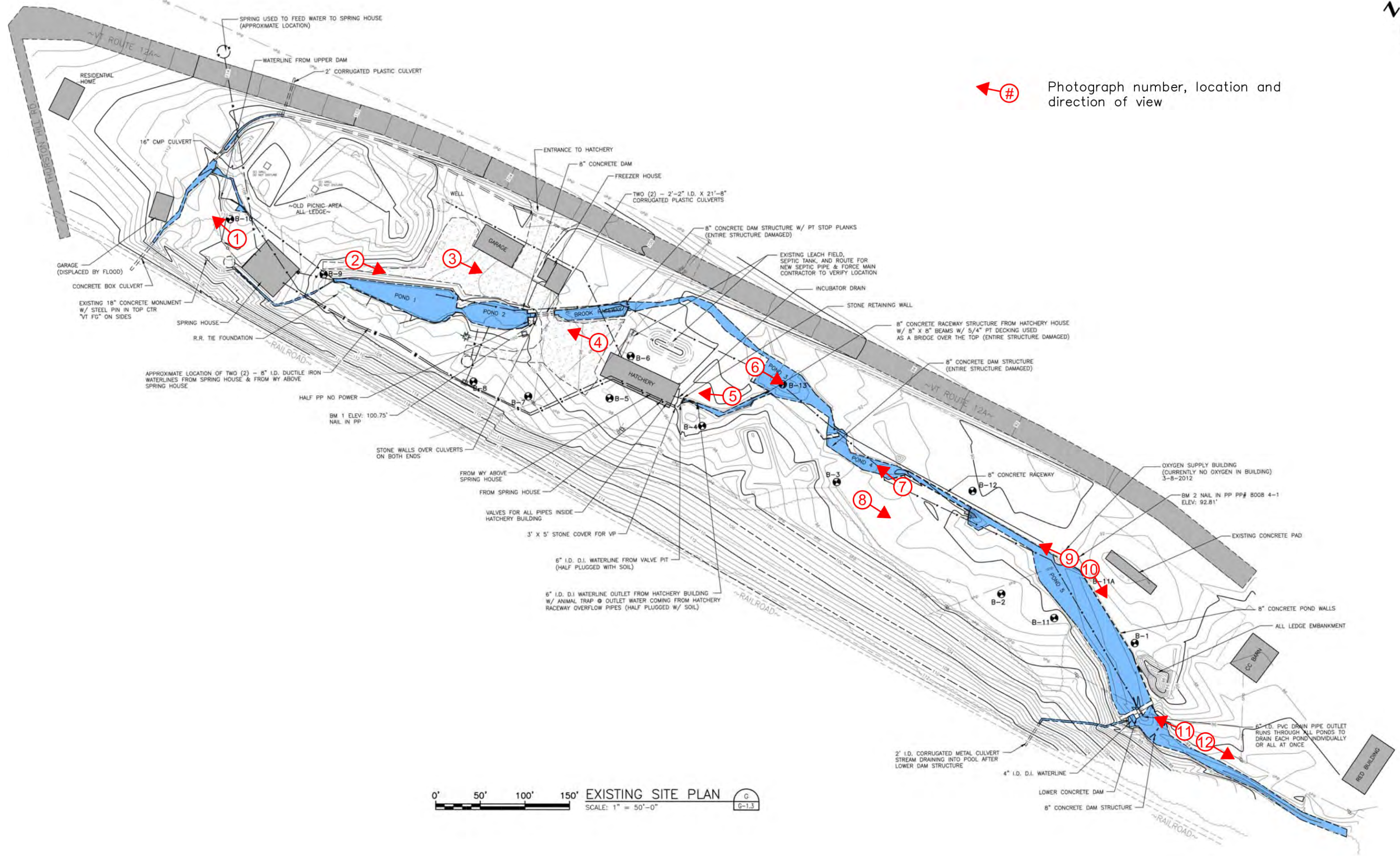
Roxbury Fish Culture Station

Appendix B: Photographs

Appendix B-1: Photograph Location Key



← # Photograph number, location and direction of view



0' 50' 100' 150' EXISTING SITE PLAN
 SCALE: 1" = 50'-0"
 G
 G-1.3

Appendix B-2: Site Photographs

Photographs are arranged from north to south. Refer to Appendix B-1 for location key.



Photograph 1: View of the northern property line of the R.F.C.S., looking north towards the abutting parcel.



Photograph 2: Pond #1, looking south.



Photograph 3: Garage and Freezer House, looking south.



Photograph 4: View looking north towards Pond #2 (top center).



Photograph 5: Hatchery Building, looking north.



Photograph 6: Pond #3, looking south.



Photograph 7: Pond #4, looking north.



Photograph 8: View looking south towards Pond #5 (not visible). Note pink-colored wetland flags (foreground) placed by Bannon Engineering in June 2016.



Photograph 9: Concrete raceway (center) flowing into Pond #5 (lower left), looking north.



Photograph 10: Pond #5, looking south.



Photograph 11: Dam at south end of Pond #5, looking north.



Photograph 12: Area south of the dam, looking south.

FEMA Region 1 Environmental Assessment

Roxbury Fish Culture Station

Appendix C: Public Notice

FEMA INITIAL PUBLIC NOTICE - ROXBURY FISH CULTURE STATION ENVIRONMENTAL ASSESSMENT

The Federal Emergency Management Agency (FEMA) proposes to assist the Vermont Fish and Wildlife Department, Roxbury VT, with the rebuilding of the Roxbury Fish Culture Station on the existing site with upgrades. Vermont Fish and Wildlife Department feels that this is a better long term solution with fewer environmental impacts than continuing to operate in a pond based system.

To meet the requirements of the National Environmental Policy Act (NEPA), FEMA has prepared a Draft Environmental Assessment (EA) to identify and evaluate human, historic, and environmental resources that might be affected by the proposed reconstruction of the Roxbury Fish Culture Station. FEMA invites the public to review and comment on the Draft EA and to provide FEMA with information it may not have considered in its review. If FEMA finds that the Proposed Alternative, as defined in the EA, will have no significant impact on the natural or human environment after the public comment period, a Finding of No Significant Impact (FONSI) will be issued by FEMA's Regional Environmental Officer, David Robbins. However, if a change in the scope of work occurs FEMA must be notified to evaluate if the proposed change would alter the potential impacts on the environment.

Beginning on February 24, 2017, these documents will be available for viewing online at <http://bgs.vermont.gov/facilities/forms> and in person at the Roxbury Town Clerk's Office, located at 1664 Roxbury Road, Roxbury, VT 05669, (802) 485-7840. The document will also be posted on FEMA's website: <http://www.fema.gov/resource-document-library>. The public comment period will last for 15 days, ending on March 12, 2017 at 5:00 pm.

Written comments on the Draft EA can be submitted by mailing David Robbins, Regional Environmental Officer at, FEMA Region 1, 99 High Street 6th Floor, Boston, Massachusetts 02110, by emailing David.Robbins@fema.dhs.gov, or by sending a fax to 617-956-7574.

FEMA Region 1 Environmental Assessment

Roxbury Fish Culture Station

Appendix D: Draft FONSI



FEMA

DRAFT

FINDING OF NO SIGNIFICANT IMPACT

ROXBURY FISH CULTURE STATION

ROXBURY, VERMONT

FEMA-4022-DR-VT

As a result of damages sustained from Tropical Storm Irene on August 27, 2011, the President declared a major disaster for the state of Vermont under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The declaration, referenced as FEMA-4022-DR-VT, authorizes the Federal Emergency Management Agency (F.E.M.A.) to provide Public Assistance funding through the Vermont Division of Emergency Management and Homeland Security to local governments, state agencies and eligible private non-profit organizations in all Vermont counties.

Flooding during Tropical Storm Irene severely damaged the Roxbury Fish Culture Station (R.F.C.S.) and its production capacity. Consequently, the State of Vermont Fish and Wildlife Department (V.F.W.D.) applied for Public Assistance funding from F.E.M.A. to reconstruct the facility.

An Environmental Assessment (E.A.) was prepared for this project proposal in accordance with the National Environmental Policy Act (N.E.P.A.), implementation regulations for N.E.P.A. at 40 CFR Part 1500-1508, Department of Homeland Security (D.H.S.) Directive 023-01, Implementation of the National Environmental Policy Act, and F.E.M.A. Directive No. 108-1, Environmental Planning and Historic Preservation Responsibilities and Program Requirements.

The purpose of an E.A. is to analyze the potential environmental impacts of proposed actions and to determine whether to issue a "Finding of No Significant Impact" (F.O.N.S.I.) or develop an Environmental Impact Statement (E.I.S). The E.A. for the R.F.C.S. documents the analysis of two alternatives; "No Action" and the "Proposed" project. Documentation included in the E.A. also includes the two alternatives considered, but dismissed: repairing the facility in-kind and relocation of the facility.

FEMA evaluated the project alternatives for potential significant adverse impacts to existing physical resources (air quality, transportation/traffic, and historic and cultural resources), natural resources (geology and soils, water resources, floodplains, wildlife, vegetation, threatened and endangered species, and wetlands), and socioeconomic resources (human health and safety, environmental justice, and cumulative impacts).

The Draft Environmental Assessment and Draft Finding of No Significant Impact were made available for viewing online at <http://bgs.vermont.gov/facilities/forms> and <http://www.fema.gov/resource-document-library> and at the Roxbury Town Clerk's Office, located at 1664 Roxbury Road, Roxbury, VT 05669.

CONDITIONS

The State of Vermont Fish and Wildlife Department and its designees shall comply with all prescribed conditions set forth in the E.A., including, but not limited to the following conditions. Failure to comply with these conditions may jeopardize the receipt of federal funding.

1. Obtain and comply with all required local, state, and federal permits and approvals, including, but not limited to the following: Stormwater Construction General Permit 3-9020, Stormwater Discharge General Permit 3-9015, Wastewater System and Potable Water Supply Permit, N.P.D.E.S. Discharge Permit, Department of Public Safety Construction Permit, Division of Fire Safety Tank Permit, Fire Safety Storage and Use Plan for generator diesel tank, and the U.S. Army Corp of Engineers General Permit NAE-2013-00656.
2. Construction vehicles and equipment will be stored on site during the project. All construction activities will be performed using qualified personnel and in accordance with the standards specified in Occupational Safety and Health Administration (OSHA) regulations. Appropriate signage will be posted on site and in the vicinity.
3. Construction will take place only during normal business hours and all equipment will meet local, state, and federal noise regulations. Idling time shall be limited on site.
4. The State of Vermont Fish and Wildlife Department and its designees shall manage and dispose of excavated soils and waste materials in accordance with applicable local, state, and federal regulations. If hazardous/contaminated materials are discovered during construction, the work shall cease until the State of Vermont Fish and Wildlife Department and its designees can implement appropriate procedures and secure additional permits if needed.
5. Hay bales and silt fencing will be used around demolition and construction areas to mitigate impacts to adjacent wetlands and catch basins. During demolition and construction, catch basins will be protected with filters, silt fencing, hay bales, or other methods.

6. Compliance with conditions specified in the Section 106 Treatment Measure Proposal regarding design review, public interpretation, and amendment of the existing National Register of Historic Places nomination form.
7. In the event of the discovery of archaeological deposits (e.g. Indian pottery, stone tools, old house foundations, old bottles) the State of Vermont Fish and Wildlife Department and their contractor shall immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The State of Vermont Fish and Wildlife Department and their contractor shall secure all archaeological discoveries and restrict access to discovery sites. The State of Vermont Fish and Wildlife Department shall immediately report the discovery to the Vermont Division of Emergency Management & Homeland Security (D.E.M.H.S.) (Mary Andes, 802- 585-4720) and the F.E.M.A. Deputy Regional Environmental Officer (Lydia Kachadoorian, 857-205-2860); F.E.M.A. will determine the next steps.
8. In the event of the discovery of human remains, the State of Vermont Fish and Wildlife Department and their contractor shall immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The State of Vermont Fish and Wildlife Department and their contractor shall secure all human remains discoveries and restrict access to discovery sites. The State of Vermont Fish and Wildlife Department and their contractor shall follow the provisions of applicable state laws, including 13 V.S.A. 3761 (Unauthorized Removal of Human Remains), 13 V.S.A. 3764 (Cemeteries and Monuments – Grave markers and historic tablets) and 18 V.S.A. 5212 (Permit to Remove Dead Bodies) or any amendments or supplanting laws and regulations. Violation of state law will jeopardize F.E.M.A. funding for this project. The State of Vermont Fish and Wildlife Department will inform the Office of the Chief Medical Examiner (802-863-7320), the State Archaeologist (Jess Robinson, 802 -272-2509), Vermont Division of Emergency Management & Homeland Security (D.E.M.H.S.) (Mary Andes, 802- 585-4720) and the F.E.M.A. Deputy Regional Environmental Officer (Lydia Kachadoorian, 857-205-2860). F.E.M.A. will consult with the S.H.P.O. and Tribes, if remains are of tribal origin. Work in sensitive areas may not resume until consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the National Historic Preservation Act.
9. The State of Vermont Fish and Wildlife Department shall notify FEMA and the Vermont Division of Emergency Management and Homeland Security should the scope of work change, including substantial design changes, additional ground disturbance, further vegetation removal, or other unanticipated changes to the physical environment.

FINDINGS

Based on input from and consultation with agencies, identified sources documented in the E.A., the State of Vermont Fish and Wildlife Department, and in accordance with FEMA Directive No. 108-1, and Executive Orders on Floodplains, Wetlands, and Environmental Justice, FEMA finds that the Proposed Alternative, as defined in the E.A., will have no significant impact on the human environment. As a result of this Finding of No Significant Impact, an E.I.S. will not be prepared (FEMA Instruction 108-1-1) and the proposed project with prescribed conditions may proceed. If a change in the scope of work occurs, the Vermont Division of Emergency Management and

Homeland Security and FEMA must be notified to evaluate if the proposed change would alter the potential impacts on the human environment. Under most situations, however, the modification or addition of one or more elements of the construction plan will not alter the findings of this E.A.

APPROVED:

David Robbins
Regional Environmental Officer
FEMA Region I, Mitigation Division
Environmental & Historic Preservation Office (EHP)
99 High St., 6th Floor
Boston, MA 02110

Date

DRAFT