

BENNINGTON PFOA REMEDIATION TRENCH SPOILS DISPOSAL SITE

ENVIRONMENTAL ASSESSMENT

Prepared For:

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LIMITED SCOPE ENVIRONMENTAL ASSESSMENT
BENNINGTON NW EXTENSION PFOA REMEDIATION TRENCH SPOILS DISPOSAL SITE
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1.0 INTRODUCTION

1.1 ENVIRONMENTAL ASSESSMENT BACKGROUND AND OVERVIEW

The topic of this Environmental Assessment is the disposal of soils that are presumed to contain perflourooctanaic acid (PFOA) from trench spoils generated by construction related to the installation of water main and service lines in the Town of Bennington and adjacent Village of North Bennington to properties affected by the presence of PFOA in private drinking wells.

The construction of the water mains will run under five (5) separate projects: four (4) to be serviced by the Town of Bennington municipal water system and one (1) to be serviced by the Village of North Bennington water system. Construction for both projects is scheduled to commence in October of 2017 and will continue for approximately one (1) year. Additional information on the municipal water distribution projects can be found at: <http://dec.vermont.gov/commissioners-office/pfoa/communities>

Construction of the water mains will involve trenching and/or directional drilling and will generate excess spoils which require disposal. The presence of PFOA in the spoils is assumed based on the results of the site investigation work that has taken place for the areas where water lines will be expanded. Seven (7) alternatives have been evaluated, including six (6) potential locations for disposal of trench spoils extracted during construction. Possible environmental impacts have also been assessed as part of this investigation.

Proposed is the disposal of up to 44,000 cubic yards total spoils along a portion of VT Rt. 279 near Austin Hill Road. Approval from the Vermont Agency of Transportation will be required for disposal at this site.

In accordance with 23 CFR 1.23, the proposed use of the VT 279 highway right-of-way also requires approval by the Federal Highway Administration (FHWA). FHWA's approval is considered an administrative action as defined in 23 CFR 107(c), thus requiring compliance with the National Environmental Policy Act (NEPA). FHWA has chosen an Environmental Assessment as the appropriate level of NEPA evaluation for this action.

1.2 PURPOSE AND NEED

Purpose:

The purpose of the project is to ensure a suitable location for disposal of excess soils (spoils) presumed to contain PFOA from trenches dug during construction of new water mains and service lines in North Bennington and Bennington, VT.

Need:

Although the preferred alternative for soils removed during water line installation is to put these soils back into the water line trench, there will be excess soils. For this reason, suitable locations are needed for spoils generated during the waterline extension work.

2.0 ALTERNATIVES CONSIDERED

The Vermont Agency of Natural Resources (VT ANR) identified the need to manage the disposal of the construction spoils generated by the five (5) construction projects. VT ANR then hired the engineering firm of Weston & Sampson to complete an analysis of potential areas using the following siting criteria:

1. Areas where water lines are being expanded within Corrective Action Area I as identified in the Consent Order (See Figure 1). A copy of the Consent Order can be found at: <https://anrweb.vt.gov/DEC/DEC/PFOADocs.aspx>;
2. On public land/in public right of way area, if possible;
3. Areas with limited erosion potential;
4. Greater than 100 feet from wetlands, river corridor, and Federal Emergency Management Agency (FEMA) floodplains;
5. Outside of public water supply source protection areas; and
6. Distal from homes with private wells that will not be replaced with municipal water.

Construction of the water main lines will include the excavation of trenches approximately seven (7) feet deep and four (4) to six (6) feet wide. Where possible, soil will be backfilled into trenches but excess spoils will be generated and will require proper disposal. Seven (7) alternatives were identified, which included no action and six (6) potential disposal areas investigated by Weston and Sampson¹ (see Appendix A):¹ Figure 2 shows the locations of the six (6) potential disposal areas.

Alternatives are described below with any additional information regarding main issues for each site being identified by bullet point.

¹ Note the Weston & Sampson report references a volume of excess soil generated by construction of 23,000 cubic yards. Further analysis by MSK estimates the total spoils for the projects to be 44,000 cubic yards.

2.1 ALTERNATIVE 1 – NO ACTION

Spoils from trenching during the construction of water main are considered sensitive material, due to the presumed presence of PFOA. A no action would be failing to establish a disposal location within an area that is presumed to be contaminated with PFOA and will be served by municipal water. This area is identified as Corrective Action Area I Operable Unit A (CAA I OU A), as shown on Figure 1. Disposing soils outside of CAA I OU A could result in water supplies not currently adversely affected to become impacted if these soils are not properly managed. Therefore, a no action is considered unacceptable.

2.2 ALTERNATIVE 2 – ORE BED ROAD TO RIVERSIDE DRIVE RIGHT OF WAY

This disposal option is located within the southwest side of CAA I OU A, south of the Walloomsac River, and north of Route 279. The usable width of the right-of-way (ROW) is assumed to be 30 feet total. The majority of the ROW is forested, with an approximate 100-foot wide clearing for an overhead high-power transmission line that crosses through its eastern side. Topography generally slopes down to the east with a slope mapped between 2% and 10%. There is an approximately thirty (30) foot hill on the western end of the ROW with slopes up to 20%. This site will not accommodate the projected 44,000 cy of spoils generated by the construction projects.

Criteria met: 6/6

Spoils accommodated by the site: 2,500 CY (approximately 7% of total)

2.3 ALTERNATIVE 3 – BARD ROAD TO RED PINE ROAD RIGHT OF WAY

This potential disposal area is located within the southern portion of CAA I OU A, south of the Walloomsac River and south of Route 279 (see Figure 1). The majority of the ROW is forested. Topography slopes gentle down to the northwest with a slope mapped as between 2% and 10%. This site will not accommodate the projected 44,000 cy of spoils generated by the construction projects and is located near a small wetland.

Criteria met: 5/6

- A small wetland is mapped approximately 100 feet to the north of the ROW.

Spoils accommodated by the site: 3,000 CY (8% of total)

2.4 ALTERNATIVE 4 – BENNINGTON COLLEGE CAMPUS

This option is located within the eastern portion of CAA I OU A, north of the Walloomsac River and between the College access road and Matteson Road. The area appears to have been a gravel “borrow pit” in the past. The area is currently wooded with slopes on the bottom of the pit area with slopes on the bottom of the pit area estimated to be 2% and 10%. This site is not on public land or ROW and is located near properties with private wells not being replaced with public water.

Criteria met: 4/6

- The site is not located on a publicly controlled property or ROW of a state agency.
- There are a number of wells nearby on Rice Lane that do not contain PFOA above the Vermont groundwater enforcement water standard of 20 parts per trillion (ppt).

Spoils accommodated by the site: 40,000 CY (+/- 100% of total)

2.5 ALTERNATIVE 5 – BENNINGTON LANDFILL

This potential disposal area is located within a proposed Corrective Action Area II, north of the Walloomsac River and east of Route 7A. This site is located near wetlands and near properties with private wells not being replaced with public water.

Criteria met: 4/6

- A wetland is mapped approximately 90 feet east of the landfill.
- Homes in this area are not expected to be supplied with municipal water as part of this water system extension project, though wells have been shown to contain PFOA at or above 20 ppt.

2.6 ALTERNATIVE 6 – WILLIAM MORSE AIRPORT

This potential disposal area is located in CAA 1 OU B, southwest of the Walloomsac River. This site is located near properties with private wells not being replaced by public water.

Criteria met: 5/6

Spoils accommodated by site: Unknown, not identified by the Weston & Sampson report.

- A specific disposal site was not identified as part of the Weston & Sampson report.
- The Federal Aviation Administration would likely be involved in regulating disposal.
- The potential site is close to private wells that have non-detectable levels of PFOA or detections of less than 20 ppt and will not be serviced by municipal water.

2.7 ALTERNATIVE 7 – ROUTE 279 AT AUSTIN HILL ROAD

This potential disposal area is located in the southern portion of CAA I OU A, south of the Walloomsac River. This area is managed by the Vermont Agency of Transportation (VTrans for Route 279. Areas to the north and south of Route 279, and west of Austin Hill Road have been identified as potential disposal options. Residences adjacent to and near this location have PFOA in their water supply wells at or above 20 ppt and will be connected as part of the forthcoming water line extension work scheduled to take place in 2017 and 2018.

Criteria met: 6/6

Spoils accommodated by the site: Up to 44,000 CY

2.8 PREFERRED ALTERNATIVE – ROUTE 279 AT AUSTIN HILL ROAD

The preferred disposal site meets all criteria outlined in Section 2.0 above and is able to accommodate the estimated 44,000 CY of spoils generated by the five (5) construction projects. Should disposal occur at this site, plans to expand Route 279 to a four-lane road in the future will likely result in disturbance to the PFOA-containing soil. However, as presence of PFOA in the soil at the site is likely due to its location within CAA I OU A, no additional impact is anticipated.

3 EXPECTED ENVIRONMENTAL IMPACTS AND MITIGATION FOR SELECTED SITE

Under the National Environmental Policy Act (NEPA), the Federal Highway Administration (FHWA) assesses impacts to several resources in accordance with FHWA Technical Advisory T 6640.8A. Regarding the proposed disposal of spoils (excess soils anticipated to be generated during the construction of water line extensions) that are presumed to contain PFOA at the preferred location off of Route 279 and Austin Hill Road, the only resource that rises to the level of discussion within this Environmental Assessment are hazardous materials. Impacts to all other resources are considered not substantial and are addressed in Appendix B attached hereto.

3.1 HAZARDOUS MATERIALS

As indicated in the “Interim Measures Corrective Action Plan (CAP) For Public Water System (PWS) Extensions- Corrective Action Area I Operable Unit A North Bennington and Bennington dated August 11, 2017” (Appendix C), all soils and groundwater within CAA I OU A are assumed to contain PFOA at levels that could affect groundwater at levels above Vermont’s Standard for PFOA. Therefore, all excess soil disposal related to the water line work is limited to locations within CAA I OU A, disposal facilities permitted to receive PFOA-containing soils, or other locations approved by VT ANR locations. Before construction of the waterlines can occur, a waste management plan, approved by VT ANR must be in place.

The Route 279 At Austin Hill Road alternative site is located within CAA I OU A (Figure 1). As specified in the CAP for the public water system extension, VT ANR considers the disposal of PFOA containing-soils within CAA I OU A acceptable and no additional mitigation is needed for the following reasons:

- PFOA concentrations in soils are not a direct contact concern. All of the soil samples collected to date, including those closest to the former Water Street

facility, were significantly below the Vermont Department of Health Advisory level of 300 ug/kg, or part per billion (ppb), for human direct contact. All soil samples collected to date are below approximately 75 ppb, with most being less than 10 ppb (Appendix D). Therefore, PFOA containing-soils within CAA I OU are not a direct contact issue.

- Soils are presumed to contain PFOA at levels that can impact groundwater to levels above Vermont groundwater standards because a majority of the water supply wells within this area have PFOA concentrations above Vermont's PFOA standard (20 ppt) and the site investigation work that has been completed to date indicates that soil deposition from air emissions and the leaching of PFOA is the major pathway for the presence of PFOA in groundwater within CAA I OU A. Therefore, moving soils around in this area will not contaminate groundwater that is currently below Vermont's standards to levels that could go above Vermont's standards.
- PFOA is already present in groundwater and the potential human exposure pathway will be eliminated by the corrective action measures for CAA 1 OU A.
- The mass of PFOA in the soils (approximately 45,000 cubic yards of soils) being proposed to be placed at this location is a very small percentage of the total mass of PFOA believed to exist in soils surrounding this disposal location due to air deposition of PFOA. Therefore, the proposed "excess" soil from the water line project would not add any substantial mass of PFOA to this area.

More detail about why soils and groundwater within CAA I OU A are presumed to contain PFOA can be found in the ANR PFOA document library (Consent Order and Core Technical Documents).

<https://anrweb.vt.gov/DEC/DEC/PFOADocs.aspx>

4 AGENCY COORDINATION AND PERMITS

An 1111 permit from AOT is required for placement of soils within the preferred alternative location (Route 279 at Austin Hill Road). Prior to issuance of this permit, a geotechnical investigation and analysis must be completed, to the satisfaction of AOT, that the placement of excess soils within the right-of-way will be stable. In addition, an existing VT 3-9020 stormwater construction general permit for the waterline placement will require amendment due to additional soil disturbance.

5 PUBLIC INVOLVEMENT

This Environmental Assessment is being made available for public review and comment for thirty (30) days. The disposal of the spoils has been addressed in the CAP, which is currently under a public comment period that ends September 13, 2017, and in previous public meetings related to the settlement between Saint Gobain.

6 APPENDICES AND FIGURES

- 6.1 APPENDIX A: Weston & Sampson Excess Soils Location Evaluation
- 6.2 APPENDIX B: Additional Expected Environmental Impacts and Mitigation for Selected Site
- 6.3 APPENDIX C: Interim Measures Corrective Action Plan (CAP) For Public Water System (PWS) Extensions- Corrective Action Area I Operable Unit A North Bennington and Bennington dated August 11, 2017
- 6.4 APPENDIX D: PFOA Results Surface Soil
- 6.5 APPENDIX E: Memorandum Regarding Proposed Disposal Site, Bennington, VT Route 279
- 6.6 FIGURE 1: Corrective Action 1 with Disposal Sites Identified
- 6.7 FIGURE 2: Proposed Disposal Project Area

June 16, 2017

Richard Spiese & John Schmeltzer
Vermont Department of Environmental Conservation
1 National Life Drive
Montpelier, VT 05620

Re: ChemFab (SMS# 2016-4630) - Bennington and North Bennington Water System Extension Excess Soils Disposal Option Analysis

This letter presents the current state of knowledge regarding the excess soil disposal options for the upcoming Bennington and North Bennington water system extension project. The water lines of both the Bennington and North Bennington water systems are being extended into areas impacted by poly and/or perfluorinated compound (PFC) contamination. Engineers estimates of the volumes of excess soil which will need disposal are 7,000 to 8,000 cubic yards from North Bennington and 14,000 to 15,000 cubic yards from Bennington for a total of 23,000 cubic yards of excess soil. The VTDEC is assuming that all of the soil is contaminated with PFCs below the direct contact screening concentration of 300 ug/Kg. The VTDEC has indicated that they would prefer disposal of excess soil within the general areas identified as having PFC contamination (the Area of Concern-AOC). The VTDEC has asked Weston & Sampson to complete an analysis of potential areas to dispose of the excess soil using the following project specific siting criteria established by the VTDEC:

- On public land/in public right of way area, if possible
- Areas with limited erosion potential
- Greater than 100 feet from wetlands, river corridor, and FEMA floodplains
- Outside of public water supply source protection areas
- Distal from homes with private wells that will not be replaced with municipal water

Areas which do not meet these criteria are shown on **Figure 1**. To date, six potential disposal areas of sufficient size to receive > 1,000 cubic yards of soil have been identified and are discussed below. Each area is evaluated based on the above project specific siting criteria and the potential benefits and/or drawbacks of each location. Remaining issues to be resolved for each location are also listed.

Ore Bed Road to Riverside Drive Right of Way

This potential disposal option is located within the southwest side of the AOC, south of the Walloomsac River, and north of Route 279 shown on **Figure 2**. Based on the VTDEC Natural Resource Atlas based map of the area, approximately 1,100 feet of the proposed water line extension between the edge of Riverside Drive and Ore Bed Road is on a publicly owned right-of way (ROW) that does not currently have a developed roadway. The usable width of the right of way is assumed to be 30 feet total. The majority of the ROW is forested, with an approximately 100-ft wide clearing for an overhead high power transmission line that crosses through its eastern side. Topography generally slopes down to the east with a slope mapped between 2 and 10%. There is an approximately 30-ft tall hill on the western end of the ROW with slopes up to 20%.

This location appears to meet all of the site specific siting criteria. No wetlands, river corridors, or FEMA floodplains are mapped in this area. No public water supply source protection areas are mapped in, or near, this ROW. Homes in this area are expected to be supplied with municipal water and private drinking water wells will be abandoned.

Assuming that an excess soils berm approximately 2-ft high by 30-ft wide could be constructed along the entirety of this section, a maximum of approximately 2,500 cubic yards (cy) could be placed in this area. As the construction will be occurring through this area access will be good for placement and construction of the berm.

Public access to the disposal area is not controlled along the ROW.

Remaining issues to be resolved prior to selection:

- Actual limits of the ROW need to be determined.
- The area will need to be assessed by a wetland scientist to evaluate if unmapped wetlands exist.
- Approval/permitting for the removal of additional trees along the ROW to accommodate the berm width would need to be completed.
- The Town will need to approve any additional soil placement in this area beyond that generated during the water system extension beneath the ROW.

Bard Road to Red Pine Road Right of Way

This potential disposal area is located within the southern portion of the AOC, south of the Walloomsac River and south of Route 279 as shown on **Figure 3**. Approximately 1,500 feet of the proposed water line extension between Bard Road and Red Pine Road is on the publicly owned ROW that does not currently have a developed roadway. The majority of this ROW is forested. Topography slopes gently down to the northwest with a slope mapped as between 2 and 10%.

Regarding meeting siting criteria, a small wetland is mapped approximately 100 feet to the north of the ROW. No river corridors, or FEMA floodplains are mapped in this area. No public water supply source protection areas are mapped in, or near, this ROW. Homes in this area are expected to be supplied with municipal water and private drinking water wells will be abandoned.

Assuming that a berm approximately 2-ft high by 30-ft wide could be constructed along the entirety of this section, up to a maximum of approximately 3,000 cy could be placed in this location. As the construction will be occurring through this area access will be good for placement and construction of the berm.

Public access to the disposal area is not controlled along the ROW.

Remaining issues to be resolved prior to selection:

- Actual limits of the ROW need to be determined.
- The area will need to be assessed by a wetland scientist to evaluate the limit of the mapped wetland and if any unmapped wetlands exist in this area.
- Approval/permitting for the removal of additional trees along the ROW to accommodate the berm width would need to be completed.
- The Town will need to approve any additional soil placement in this area beyond that generated during the water system extension in this ROW.

Route 279 at Austin Hill Road

This potential disposal area is shown on **Figure 4**. The potential disposal area is located in the southern portion of the AOC, south of the Walloomsac River. This area is the right of way/fee simple land? managed by VTrans for Route 279. Areas to the north and south of Route 279, and west of Austin Hill Road have been identified as a potential disposal options. Access roads will need to be constructed to the disposal locations. However, grades appear favorable to access road construction.

No portion of the water system extension will be located in the immediate area. All private wells located downgradient are contaminated with >100 ppt of PFCs. No public water source protection areas are nearby. The two areas are grassy slopes (mapped as slopes between 10 and 36%), with forest along the southern and northern edges. A wetland is mapped approximately 800 feet from the proposed disposal area.

A preliminary evaluation by the project engineer at MSK indicates that all of the excess soil (>23,000 cy) could potentially be disposed of in this area utilizing berms of 15 to 30 feet in height. Erosion control and permeant runoff control methods will need to be designed.

Public access to this area is controlled through fencing along the ROW. Also few homes are located in the immediate area limiting potential for casual contact by walkers and hikers.

Remaining issues to be resolved prior to selection:

- The area will need to be assessed by a wetland scientist to evaluate the limit of the mapped wetland and identify if unmapped wetlands exist in this area.
- A formal erosion control plan will likely be needed.
- The VTDEC will need to work with the Vermont Agency of Transportation to identify and secure any necessary Federal approvals to utilize the highway ROW for soil disposal.
- The AOT has requested that analytical testing of existing PFC concentrations at the disposal location(s) be completed prior to placing any soil. The VTDEC will need to work with the AOT to identify the number of samples and analytes needed to meet the VTrans request.
- The AOT has requested a release of liability for any soil accepted onto their ROW from this project which will need to be completed.
- Permitting requirements for the creation of a road into the ROW will need to be determined.

Bennington College Campus

This potential disposal option is located within the eastern portion of the AOC, north of the Walloomsac River and between the College access road and Matteson Road. **Figure 5** shows the approximate outline of the proposed fill area. The area appears to have been a gravel “borrow pit” in the past. The proposed water system extension will be located adjacent to this area. The area is currently wooded with slopes on the bottom of the pit area estimated to be 2 and 10%.

This is not public controlled property or a ROW of a state agency. No wetlands, river corridors, or FEMA floodplains are mapped in this area. No public water supply source protection areas are mapped in, or near, this area. Many of the homes in this area are contaminated with >100 ppt PFAS and will be connected to the water line extension. However, there are also a number of wells nearby on Rice Lane which do not contain PFAS contamination.

Based on a reported discussion with the College, the MSK project engineer estimates that up to 40,000 cy of soil could potentially be disposed of in this area. Infilling of the gravel pit from northwest to southeast resulting in similar slopes to those currently observed.

Public access to the disposal area is not controlled in this area. However, the configuration and location of this area naturally limits public access.

Remaining issues to be resolved prior to selection:

- The actual limits of the area in question will need to be identified and surveyed to calculate an accurate potential disposal volume.
- The area will need to be assessed by a wetland scientist to evaluate if unmapped wetlands exist in this area.
- The College administration will need to grant approval to place excess soil on their property.
- A formal, binding agreement between the VTDEC and College should be developed to clearly define liability and long term use of the surrounding area.

Bennington Landfill

This potential disposal area is located within the eastern portion of the AOC, north of the Walloomsac River and east of Route 7A. No portion of the water system extension will be located in this area.

A wetland is mapped approximately 90 feet east of the landfill. No river corridors, or FEMA floodplains are mapped in this area. No public water supply source protection areas are mapped in, or near, this area. Homes in this area are consistently contaminated with PFCs but are not expected to be supplied with municipal water as part of this water system extension project.

Public access to this area is highly controlled through fencing , signage and gated access. The landfill is also some distance from the project area.

Remaining issues to be resolved prior to selection:

- The Town has not identified what would be necessary to adequately address their liability concerns regarding accepting the excess soils.
- The actual area of the landfill to be utilized will need to be identified and surveyed to calculate an accurate potential disposal volume. It is unknown the maximum height of a potential soil pile would be allowed at the landfill. The VTDEC is currently in discussions with the Town to identify potential areas of the landfill.
- The VTDEC will need to coordinate with the EPA to secure approval for placement of soil at the site, which is under EPA jurisdiction.
- Private wells in the area are not being replaced. The VTDEC will need to decide how to address the concerns of residents who do not already have point-of-entry treatment systems (POETs).

Airport

Remaining issues to be resolved prior to selection:

Where would disposal occur?

FAA involvement?

Close to wells that have non-detects or detections less than 20 ppt.

A number of issues associated with all potential disposal areas will need to be addressed prior to selecting a disposal location(s). We believe that at a minimum the following must be properly evaluated:

- 1) Erosion control plans will be needed for each disposal area.
- 2) Truck weights and traffic concerns regarding crossing the Walloomsac. Due to covered bridges being the only crossings in the project area, getting large dump trucks across the Walloomsac to a disposal area on the opposite side will require driving additional distances through Bennington. A disposal location on each side of the River may be appropriate.

Please contact me directly by phone at (802) 244-5051 x6007 or by e-mail at larosas@wseinc.com if you have any questions or require further information.

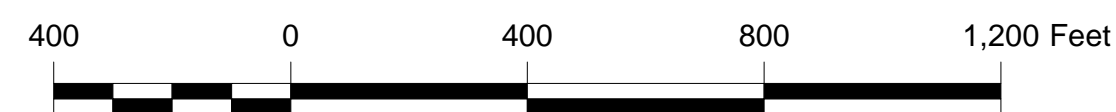
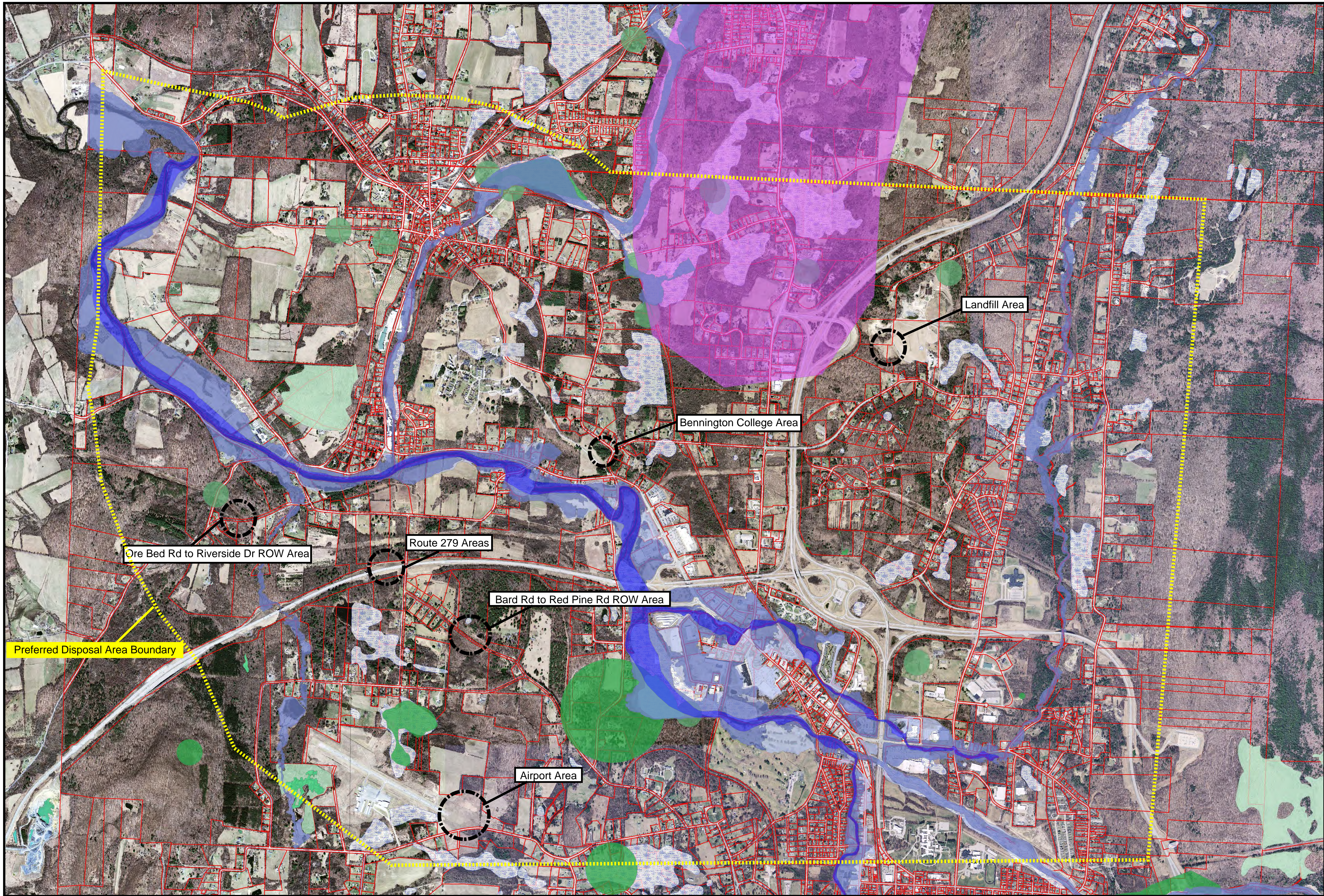
Sincerely,

WESTON & SAMPSON



Steven LaRosa
Senior Project Manager
Enclosures

\\wse03.local\\wse\\projects\\vt\\vtdec bf 2015-2016\\phase h - chemfab - n. bennington\\excess soils\\061617 excess soils location evaluation.docx



Vermont Department of
Environmental Conservation

Bennington and North Bennington
Excess Soil Disposal Option Analysis

June 2017

Data Sources:

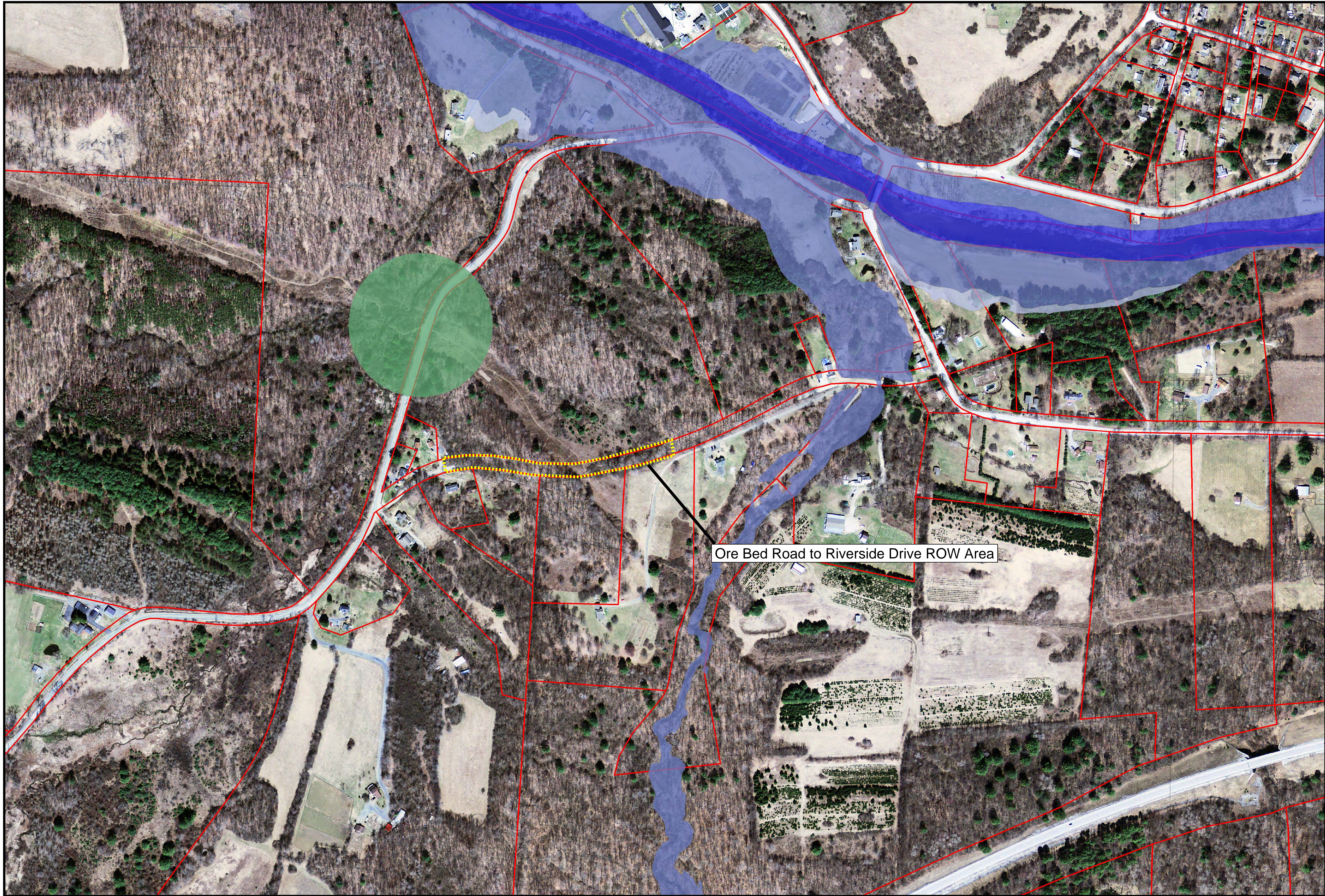
Weston & Sampson Engineers
Vermont Center for Geographic Information (1)
FEMA Flood Hazard Maps (2)

Disclaimer:

This information is for planning purposes only and should not be considered exact. Field inspection and verification is required. This data was created from aerial maps.

- Flood Hazard
- Flood Hazard
- Floodway
- Significant Natural Communities
- Biological Hotspots
- Wetland
- Parcel Boundary

FIGURE 1



Vermont Department of Environmental Conservation

Bennington and North Bennington

Excess Soil Disposal Option Analysis

June 2017

Data Sources:

Weston & Sampson Engineers
Vermont Center for Geographic Information (1)
FEMA Flood Hazard Maps (2)

Disclaimer:

This information is for planning purposes only and should not be considered exact. Field inspection and verification is required. This data was created from schematic maps.

Legend:

- Flood Hazard
- Flood Hazard
- Floodway
- Significant Natural Communities
- Biological Hotspots
- Wetland
- Parcel Boundary

Ore Bed Rd to Riverside Dr Option

FIGURE 2





Bard Road to Red Pine Road ROW Area

Vermont Department of Environmental Conservation

Bennington and North Bennington
Excess Soil Disposal Option Analysis

June 2017

Data Sources:

Weston & Sampson Engineers
Vermont Center for Geographic Information (1)
FEMA Flood Hazard Maps (2)

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- Flood Hazard
- Flood Hazard
- Floodway
- Significant Natural Communities
- Biological Hotspots
- Wetland
- Parcel Boundary

Ore Bed Rd to
Riverside Dr Option

FIGURE 2



APPENDIX B – ADDITIONAL EXPECTED ENVIRONMENTAL IMPACTS AND MITIGATION FOR SELECTED SITE

1.0 TERRESTRIAL AND BIOLOGICAL RESOURCES

1.1 VEGETATION

The project area consists of grass-covered banks along the side of VT Rt. 279. Adjacent to the proposed disposal area, mixed deciduous and coniferous forest begins.

1.2 WILDLIFE HABITAT

No significant wildlife habitats were discovered within the project area

1.3 THREATENED AND ENDANGERED SPECIES

Northeastern long-eared bat:

- A determination has been made that the project area does not include habitat suitable for the endangered northern long-eared bat (see Appendix E).

No other rare, threatened or endangered species were discovered in the project area.

1.4 SOIL COMPOSITION

Soils in the project area include Georgia Loam, 3-8% slopes and 8-15% slopes; and Massena Silt Loam 3-8% slopes.

2.0 AQUATIC RESOURCES

2.1 FLOODPLAINS

All options considered, including the proposed, were >100 feet from any FEMA mapped flood hazard areas.

2.2 WETLANDS

The project is in close proximity to one unnamed Class II stream-associated wetland and one small (<1/8 Ac) Class III wetland. See Appendix C for wetlands analysis. See Figure 1 for project areas indicating a >50 ft. buffer between any deposit of spoils and these two wetlands.

3.0 CULTURAL RESOURCES

The use of the proposed Route 279 site will be cleared by VTrans under Section 106 of the National Historic Preservation Act.

3.1 ARCHAEOLOGICAL RESOURCES

There are no anticipated impacts to archaeological resources associated with the project.

3.2 HISTORICAL RESOURCES

There are no anticipated impacts to historical resources (above-ground) associated with the project.

4.0 LAND USE AND ZONING

4.1 AFFECTED ENVIRONMENT

The affected area includes a portion of Vermont State Right-of-Way on both sides of VT Route 279. The project area begins at the intersection of Rt. 279 and Austin Hill Road and extends 800 ft. west along the highway.

4.2 ENVIRONMENTAL CONSEQUENCES

Trench spoils from the proposed water main extension are expected to contain PFOA. Results from 46 soil samples around North Bennington indicate maximum soil PFOA contamination of 45 ppb and an average of 9.58 ppb – well below the VT soil screening value of 300 ppb (see Appendix A). Recent soil samples collected near had slightly higher soil concentration (approximately 75 ppb), but still below the VT soil screening value.

5.0 INFRASTRUCTURE

5.1 UTILITIES

No utilities will be affected or required as a part of this project.

5.2 TRAFFIC AND PARKING

The proposed disposal area will be accessed from Austin Hill Road, so traffic along VT Rt. 279 will not be affected. Construction is expected to last twelve months, with an average of 17 trips per day to the disposal site.

6.0 POTENTIAL HAZARDS

6.1 AIR QUALITY

There are no anticipated air quality impacts associated with the project.

6.2 NOISE

There are no anticipated noise impacts associated with the project.

**Interim Measures
Corrective Action Plan
For
Public Water System (PWS)
Extensions
Corrective Action Area I
Operable Unit A
North Bennington and Bennington**

August 11, 2017

**Interim Measures Corrective Action Plan For
Public Water System (PWS) Extensions- Corrective Action Area I
Operable Unit A
North Bennington and Bennington**

August 11, 2017

1.0 Introduction/ Executive Summary

1.1 *Purpose*

This Corrective Action Plan (CAP) authorizes an interim measure corrective action for the selected drinking water remedy in Corrective Action Area I-Operable Unit A (CAA 1-OU A). The selected remedy is the extension of public water systems (PWS) to residences and businesses as shown on the map in Figure 1. Approximately 200 homes or businesses will be connected to municipal water. The use of an interim measures CAP is authorized by the Investigation and Remediation of Contaminated Properties Rule (IROCPR) § 35-506(b)(1)(B).

This CAP is necessary to meet requirements related to corrective action plans in the following documents:

- The State of Vermont Consent Order (Consent Order) with Saint-Gobain Performance Plastics (Saint-Gobain), which was entered into State Superior Court on July 26, 2017, and
- The Vermont Agency of Natural Resources (ANR) Rule, “Investigation and Remediation of Contaminated Properties Rule (IROCPR), effective July 27, 2017”. Approval of this CAP allows for water line extensions to begin this construction season.

Other CAPs as required in Appendix A of the Consent Order will be prepared separately. More details about the corrective action work items and schedule are provided in [Appendix A of the Consent Order](#).

1.2 *Summary of Site Investigation Work*

Site investigative work was conducted by multiple parties, including consultants on behalf of Saint Gobain, the ANR, the U.S. Environmental Protections Agency (EPA), and a group of Colleges and Universities. Investigative work included surficial and bedrock mapping; borehole geophysics, measurements of groundwater elevation; and the collection of drinking water samples, groundwater samples from monitoring wells and springs, surface water and samples, sludge samples, and soil samples. This investigative work included the development of a Conceptual Site Model (CSM) provided by Saint Gobain, which, among other things, identified potential sources and pathways for PFOA found in groundwater. The CSM incorporated the data collected from the site investigative work to evaluate the complete PFOA transport

pathway from source to sensitive receptor, that is, primarily people drinking the water, which required multiple numerical models to assess fate and transport through air, the unsaturated zone, and groundwater. A more detailed summary of the site investigation work can be found in [Appendix D of the Consent Order](#), and [the CSM](#). As noted in Appendix D of the Consent Order, the ANR has determined that additional investigation of the Site is required and additional refinement of the CSM is necessary prior to the ANR's concurrence with the conclusions contained within the CSM.

1.3 *Remedial Objectives*

The major remedial objective of this CAP is to provide a long-term remedy that protects human health by eliminating the pathway for people to drink water contains PFOA in concentrations at or above 20 parts per trillion (ppt), or wells that are believed to be at risk and PFOA levels are below 20 ppt where PWS extension work ("Water Line Extension Work"), has been planned, designed, and permitted within CAA 1-OU 1 (the Project Area).

1.4 *Remedial Alternatives Considered to Protect Human Health (Eliminate Drinking Water Pathway)*

Barr Engineering, on behalf of Saint-Gobain, prepared a comparative analysis of corrective action for eliminating drinking water pathways and addressing groundwater. This document is [Appendix C of the Consent Order](#).

For remedies to protect human health, that is, eliminate the drinking water pathway, they evaluated three options:

- Long-term Operations of Point-of-Entry Treatment Systems (POETs)
- Extension of existing community PWS distribution mains
- Drinking water replacement wells

Their comparative analysis of these options was performed using the criteria specified in 40 C.F.R. § 300.430(e)(9)(iii), which is also consistent with the requirements within Subsection 35-503 (Evaluation of Corrective Action Alternatives) in the IROCPR:

- Overall protectiveness to human health and the environment;
- Compliance with applicable, relevant, and appropriate requirements;
- Short-term effectiveness;
- Long-term effectiveness and permanence;
- Reduction of contaminant mass, mobility, and toxicity through treatment;
- Implementability;
- Cost; and
- Community acceptance.

1.5 *Description of Selected Corrective Action*

As specified in the ANR decision document (Appendix D of the Consent Order), the preferred corrective action is to connect impacted water supply wells with PFOA concentrations at or above 20 ppt and other potentially at-risk wells to the municipal water supply, where technically feasible and cost effective.

The Town of Bennington and the Village of North Bennington hired consulting firms, MSK Engineering and Otter Creek Engineering, respectively, to perform this evaluation, working in close consultation with the applicable state programs to ensure any proposed Water Line Extension Work was designed to comply with all applicable health-based and environmental requirements. CAA 1 OU A are those areas where it is technically feasible and cost effective to extend water lines. Figure 1 shows the proposed water-line extensions within CAA 1.

The scope of work associated with the extension of the PWS includes installation of water service lines to the existing internal plumbing within the home or business and restoration of property disturbance. The remedy does not include water usage costs to the PWS or refurbishment or replacement of existing internal plumbing and other items as further set forth in the Consent Order.

This CAP only includes areas where waterlines have been permitted to be extended within the CAA 1 OU A. A separate CAP will address the remedies to protect human health in CAA 1 OU B.

2.0 **Performance Standards**

The performance standard for this CAP is completion of the Water Line Extension Work, which requires the extension of municipal water service to all homes and businesses as required by the Consent Order within CAA 1 OU A.

Compliance with this performance standard shall be documented by submittal to ANR the required information specified in the two respective PWS Construction Permits (listed below), including record drawing, signed and stamped by a professional engineer, and a letter certifying conformance with all permit conditions from the professional engineering firm responsible for observation of construction.

Public Water System Construction Permit Project C-3478-17.0

Water System: North Bennington Water Department WSID # VT0005017

Permitee: Village of North Bennington

Project Name: Distribution main extensions to provide water service to properties
with on-site wells contaminated with PFOA and PFOS.

Permit Issued: June 5, 2017

Public Water System Construction Permit Project C-3495-17.0

Water System: Bennington Water Department WSID # VT0005016

Permitee: Bennington Town

Project Name: Distribution main extensions to provide water service to properties
with on-site wells contaminated with PFOA and PFOS.

Permit Issued: July 12, 2017

A copy of the public water system construction permit Project C-3478-17.0 (Expansion of North Bennington water system) can be found in Attachment A. A copy of the public water system Construction permit Project C-3495-17.0 (Expansion of Bennington water system) can be found in Appendix B.

3.0 Remedial Construction Plan

Detailed engineering designs, including preliminary engineering reports, design drawings, and technical specifications for the Water Line Extension Work have been developed for North Bennington and Bennington. These designs are referenced in Section A.5 of Permits C-3478-17.0 and C-3495-17.0, and include a Vermont licensed professional engineer signature of review for the PWS extensions as required in IROCP § 35-505 (4)(b). The respective water supply construction permits provide a summary description of the proposed modifications, and extension of two PWS systems. The [bid packages for North Bennington and Bennington, which include the respective designs, are available online](#) and at the offices of the Town of Bennington. The proposed Water Line Extension Work for Bennington is divided into four bid packages.

4.0 Waste Management Plan

All excess excavation materials generated during this project must be managed in accordance with a plan approved by ANR. For purposes of waste management planning, all soils and groundwater within CAA 1 OU A will be assumed to contain PFOA at levels that could affect groundwater at levels above Vermont's Standard for PFOA.

An approved waste management plan must be in place before construction of the waterlines can take place. Evaluation of final options is ongoing. Currently, up to approximately 35,000 cubic yards of excess soils may be generated from these two water line projects. Soil disposal locations are limited to locations within CAA 1 OU A, disposal facilities permitted to receive PFOA-containing soils, or other locations approved by ANR. Disposal of PFOA containing-soils within CAA 1 OU A is considered acceptable for the following reasons:

- PFOA concentrations in soils are not a direct contact concern. All of the soil samples collected to date, including those closest to the former Water Street facility, were significantly below the Vermont Department of Health Advisory level of 300 ug/kg, or part per billion (ppb), for human direct contact. All soil samples collected to date are below 70 ppb, with most being less than 10 ppb. Therefore, PFOA containing-soils within CAA 1 OU are not a direct contact issue.
- Soils within CAA 1 OU A are presumed to contain PFOA at levels that can impact groundwater to levels above Vermont groundwater standards. Therefore, moving soils around in this area will not contaminate groundwater that is currently below Vermont's standards to levels that could go above Vermont's standards.
- PFOA is already present in groundwater and the potential human exposure pathway will be eliminated by the corrective action measures for CAA 1 OU A.

The preferred alternative for soils removed during water line installation is to put these soils back into the water line trench. This will occur when soil geotechnical conditions are

appropriate for this to happen. When this is not possible, additional soils must remain within CAA 1 OU A. Attachment C contains a document that evaluated possible disposal locations of excess soils within CAA 1 OU A. At this time, the three disposal locations being considered are the following:

- Right-of-Way between the end of Riverside Drive and Ore Bed Road (Approximately 1,000 feet).
- Right-of-Way between end of Bard Road to the end of Red Pine Road (Approximately 1,500 feet)
- Area to the north and south of Route 279 and west of Austin Hill Road. This location is on Vermont Agency of Transportation right-of-way.

Because federal funds were used in the construction and acquiring the right-of-way for Route 279, an environmental assessment must be performed for the proposed disposal location within the Route 279 right-of-way west of Austin Hill Road before Federal Highway Administration (FHA) can approve of these soils going to this location. Once FHA issues their approval document, the Vermont Agency of Transportation can authorize use of this right-of-way for disposal of excess soils generated during construction of PWS extensions.

In addition, it is possible that the permittees and their contractors could identify in their waste management plan(s) other potential permanent and temporary soil disposal locations. However, such locations must be approved by ANR prior to moving soils to these locations.

Groundwater may be encountered during the installation of the water lines and it is possible that the excavated trenches for the water line will need to be de-watered. If de-watering is needed, the waste management plan must address how the water will be managed and will not make site conditions worse. Possible management options including re-charging the water in area where the water was removed or storing the water in tanks for treatment (that is, remove the PFOA using carbon canisters) prior to discharge. Any management or discharge of groundwater must comply with the applicable requirements.

At this time, no additional contamination besides PFOA are anticipated to be encountered. However, a preliminary site investigation was performed at two locations where petroleum underground storage tanks are, or were, present. The results of this preliminary site investigation are pending. If contamination besides PFOA is found as result of the preliminary site investigation in an excavation area associated with the Water Line Extension Work or during the actual construction of this work, then the procedures outlined in the VT DEC document "Guidance for Construction of Public Works Projects," effective date March 2002, must be followed for that given reach of waterline work where this contamination is present.

5.0 Implementation Schedule

Construction of the Water Line Extension Work for both North Bennington and Bennington are scheduled to begin in the Fall of 2017. The current goal is to have all the waterlines completed by the Fall of 2018.

6.0 Corrective Action Maintenance Plan

The two water systems are responsible to maintain their water systems per their respective operating permits, and all other applicable requirements, to ensure that they are providing water to their users that meet the requirements of the Federal Safe Drinking Water Act and the Vermont Water Supply Rule. Once the construction of the water line extensions is completed, the water systems are required to obtain an amended PWS permit to operate and provide an updated operation and maintenance manual to account for the expansion of their systems.

7.0 Institutional Controls

As specified in the Consent Order, the groundwater within CAA 1 OU A, following the completion of the municipal water line extension work, will be reclassified as Class IV non-potable groundwater in areas served by the municipal water line in accordance with the IROCPR and state groundwater protection rules.

8.0 Quality Assurance and Quality Control (QA/QC Plan)

The QA/QC requirements are included in the design plans and technical specifications for each water system.

9.0 Proposed contractors and subcontractors

At this time, the contractors to construct the water line have not yet been selected. Request for Proposals were sent out for both water line projects in early August 2017. Selection of these contractors is scheduled to occur in late August of 2017 with contractors being signed in early September of 2017.

10.0 Corrective Action Completion Report

As indicated in Section 2 (Performance Standards), there is a condition in the respective PWS construction permits requiring stamped and signed record drawings and a letter certification by the licensed professional engineering firm responsible for observation of construction to be submitted to the Secretary for review and verification.

11.0 Public Notice

Attachment D contains the public notice that will be sent to individuals located within CAA 1 OU A using the mailing lists that the MSK Engineering and Otter Creek Engineering used to notify individuals and properties about their interest to be connected to a municipal water system. Notice shall be provided to all property owners impacted by this CAP on a form provided by the Secretary. A copy of this CAP will be electronically posted for 30 days for public comment.

- [Figure 1](#) Map showing Proposed Waterline Extension within Corrective Action Area 1
- [Attachment A](#) Public Water System Construction Permit Project C-3478-17.0
North Bennington
- [Attachment B](#) Public Water System Construction Permit Project C-3495-17.0
Bennington
- [Attachment C](#) Weston and Sampson Letter dated June 16, 2017 (Bennington and North
Bennington Water System Extension Excess Soils Disposal Option Analysis
- [Attachment D](#) Public Notice

APPENDIX D

Summary of Laboratory Results Surface Soil Sampling - PFOA Detections North Bennington, VT March 2016

Sample Location	Sample Date	0 - 6" bgs (ng/g)	6" - 12" bgs (ng/g)	12" - 18" bgs (ng/g)	18" - 24" bgs (ng/g)	VT PFOA Soil Screening Value* (ng/g)
22 Asa Way	3/17/2016	0.82	0.39J	NS	NS	300
25 Asa Way	3/16/2016	0.97	1.2	8.2	7.7	300
Vacant Lot Asa Way	3/21/2016	2.9	4.1	2	1.2	300
1 College Drive: Bennington College						
Bennington College Garden	3/18/2016	1.1	0.65J	0.38J	0.67J	300
Bennington College Adjacent to Garden	3/18/2016	2.9	4.9	2.8	1.8	300
Bennington College Adjacent to Soccer Field	3/18/2016	3.6	3.6	3	1.7	300
Bennington College Jennings Meadow Trail	3/18/2016	2.1	2.8	2.6	2.3	300
132 Harrington Road: Pembroke Nursery						
Stockpile 1 - Topsoil Composite	3/22/2016	5.6	NS	NS	NS	300
Stockpile 2 - Topsoil Composite	3/22/2016	1.5	NS	NS	NS	300
Garden	3/22/2016	0.75	1.8	1.9	2	300
246/248 Harrington Road WWTP Sewer Sludge	3/22/2016	350 ng/L	NS	NS	NS	
1682 Harrington Road	Sampling Pending					300
29 Lever Street	3/22/2016	1.4	1.1	1.1	2.5	300
765 Murphy Road	3/17/2016	6.4	6.3	2.6	1.6	300
? Murphy Road (No Street Address)	Sampling Pending					300
2009 N. Bennington Road	3/22/2016	4.2	4.9	45	NS	300
Paran Lake - Fishing Access Area	3/23/2016	2	1.9	4.1	4.6	300
980 Park Street	3/21/2016	2.7	1.5	1.5	NS	300
8 Polygraphic Lane	3/21/2016	4.2	1.9	2.1	2.4	300
15 Polygraphic Lane	3/21/2016	0.84	1.1	NS	NS	300
59 River Road Playground Roadside	3/16/2016	0.74J	0.86	0.66J	ND	300
59 River Road Playground Slide	3/16/2016	ND	ND	NS	NS	300
180 River Street	3/23/2016	2	0.66J	ND	ND	300
6 Royal Street	3/17/2016	0.82	ND	ND	0.55J	300
5 Scarey Lane	3/17/2016	6.2	5.9	7.1	8.2	300
10 Scarey Lane	3/21/2016	4.1	1.4	2.3	3.6	300
15 Scarey Lane	3/17/2016	1.5	1.2	NS	NS	300
26 Scarey Lane	3/21/2016	1.1	0.33J	NS	NS	300
32 Scarey Lane	3/17/2016	1.3	0.9	0.35J	0.85	300
9 School Street: Village School						
Small Playground	3/18/2016	ND	ND	ND	ND	300
Large Playground	3/18/2016	ND	ND	ND	ND	300
Maple Tree	3/22/2016	1.3	3.1	2.9	NS	300
Northeast Parking Lot	3/22/2016	0.88	ND	0.75	NS	300
26 Susan Taylor Lane	3/21/2016	0.63J	0.86	1.5	1.6	300
37 Susan Taylor Lane	3/16/2016	5.8	3.5	2.5	NS	300
37 Susan Taylor Lane Garden	3/16/2016	8.2	7.3	5.2	2.9	300
492 Water Street - Paran Creek Access	3/24/2016	ND	1.3	ND	0.65J	300
1030 Water Street - Former Chemfab						
Riverside	3/23/2016	9.1	2.7	4.2	4.9	300
West Side	3/23/2016	11	3.6	3.1	4.1	300
BD East	3/23/2016	20	6.1	4.8	13	300
Vent W	3/24/2016	20	11	10	12	300
16 Wilkey Way	3/23/2016	2.9	3.3	4.6	5.7	300

PFOA - Perfluorooctanoic acid

units - ng/g - nanograms per gram or parts per billion

ng/L - nanograms per Liter or parts per trillion

ND - denotes Not Detected

NS - denotes Not Sampled due to auger refusal at 3 locations (2nd and 3rd attempts made adjacent to initial auger hole)

J - denotes Estimated Value

bgs - denotes below ground surface

* VT PFOA Soil Screening Value = 0.3 ng/kg = 300 ng/g

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MEMORANDUM

To: Jason Dolmetsch
From: Patricia Greene-Swift, Gilman & Briggs Environmental
Date: July 11, 2017
Re: Proposed Disposal Site, Bennington, VT Route 279

Introduction

This memorandum is in regard to the potential presence of wetlands, and potential bat trees that could be used by the endangered northern long-eared bat, on a parcel located north and south of Route 279, immediately west of Austin Hill Road, in Bennington. The north and south sides of Route 279 are proposed to be used as disposal sites for contaminated material from PFOA work sites in the future. As such, a proposed disposal site needs to be cleared of natural resource issues prior to the construction of new water mains in any area of PFOA contaminated soil.

Methods

Gilman & Briggs used looping search method in areas where trees were greater than 4 inches DBH and examined all trees that could potentially be used by northern long-eared bat. Tree characteristics searched for were cracks, loose bark, holes in trees and bark where a bat could scooch under, scars with openings, and fissures that naturally occur in bark (i.e. black locust trees or shagbark hickory).

Potential wetlands were remotely searched for using the Vermont ANR Natural Resource Atlas color infrared layer, wetland layer, black and white layer, soil layer, and stream layer. On site the wetland search began in the low topographic positions where drainage is likely, on both side of Route 279, proceeded to the areas inside the tree canopy, and then looped around the east side edges of an unnamed stream. Areas outside the fence associated with Route 279 were not searched as they are outside the potential disposal site.

Results

Bats: No potential northern long-eared bat trees were located on the parcel. Northern long-eared bat trees are characterized as interior forest trees over 4 inches in diameter that are cracked or have holes, loose bark, and/or a type of bark the bats could use by scooching underneath for cover from inclement weather at least 15 to 20 feet above ground, and trees with these characteristics were not found on site. Indiana bat tree roosts and potential maternity colony sites were not searched for since the Bennington area is located outside this species summer range.

Wetlands: Two wetlands were located on the south side of Route 279, Wetland A and Wetland B.

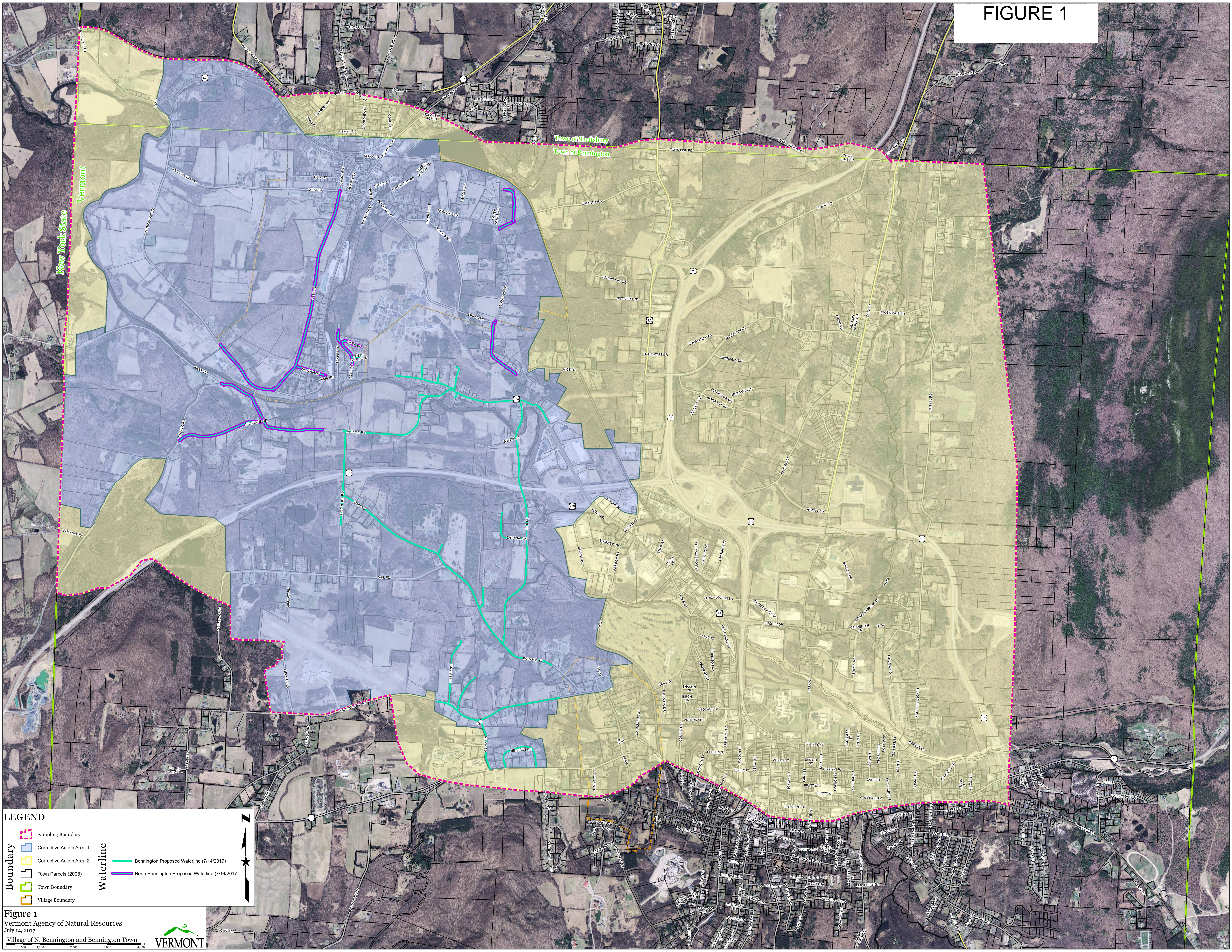
Wetland A is located at the toe of slope of Route 279 and is associated with drainage from Route 279 as well as drainage from the hillslope south of Route 279. Wetland A appears to drain into the small unnamed brook located along the west side of the parcel. Due to wetland A being contiguous to the small unnamed stream that flows under Route 279, it is likely a Class II stream-associated wetland. Two ACOE wetland delineation plots were recorded for this project on Wetland A.

Wetland B is a small (under 1/8 acre) wetland that had a small amount of flow during the site investigation, and this flow might during very high precipitation events reach Wetland A, which is 40 to 50 feet south of Wetland B. Wetland B, due to its potential small size is likely a Class III wetland. However, the size of the wetland could not be confirmed as a fence separates the proposed project site from private land (located immediately south of the subject parcel) which limited access to further investigation.

Please see the image below for Wetland A and Wetland B locations.



FIGURE 1



LEGEND

	Sampling Boundary
	Corrective Action Area 1
	Corrective Action Area 2
	Town Parcels (2008)
	Town Boundary
	Village Boundary

Waterline

	Bennington Proposed Waterline (7/14/2017)
	North Bennington Proposed Waterline (7/14/2017)

FIGURE 2

