

SPOILS MANAGEMENT PLAN

BENNINGTON PFOA REMEDIATION TRENCH SPOILS DISPOSAL SITES

Prepared For:

VTANR/DEPT OF ENVIRONMENTAL CONSERVATION
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Updated: December 13, 2017 (Addendum C)
Updated: May 24, 2018 (Addendum D and E)

SPOILS MANAGEMENT PLAN
BENNINGTON NW EXTENSION PFOA REMEDIATION TRENCH SPOILS DISPOSAL SITES
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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND OVERVIEW

This Spoils Management Plan provides for the disposal of soils that are presumed to contain perflouroctanaic 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.

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.

Proposed is the permanent disposal of up to 50,000 cubic yards (CY) (approximately 44,000 CY) total spoils along properties adjacent to Walloomsac Road, Murphy Road, Silk Road, and Vail Road in the Town of Bennington, Bennington County, Vermont.

On November 1, 2017, this Spoils Management Plan was updated to include the Walloomsac-Pippin Knoll Roads Spoils Site (Addendum A).

On December 8, 2017, this Spoils Management Plan was updated to include the Riverside Drive Spoils Site (Addendum B).

On December 13, 2017, this Spoils Management Plan was updated to include the Riverside Drive Spoils Site (Addendum C).

On May 24, 2018, this Spoils Management Plan was updated to include the Polygraphic Lane and Asa Way Spoils Site (Addendums D and E).

1.2 PURPOSE AND NEED

Purpose:

The purpose of the project is to ensure a suitable location for the placement 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 VT ANR Criteria to Be Met

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 has determined that the following siting criteria is required to be met for each proposed spoils location:

1. Areas where water lines are being expanded within Corrective Action Area I (CAA I OU A) as identified in the Consent Order;
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. Six (6) potential spoils sites have been identified, which meet five of the six requirements. These spoils areas are located on private land except for a right of way (ROW) adjacent to Hill Shadow Farm. Criteria 2.0 states, "if possible", a spoils area is to be on public land/in public right of way. After extensive review, sites have been selected that are in close proximity to the areas where spoils are being generated. This selection process has required the review and assessment team and contractors to work closely with willing private landowners throughout the project area. As a part of the process, contractors request and receive written authorization from the landowners prior to placing spoils on private property.

2.1 WALLOOMSAC-HILL SHADOW FARM ROADS SPOILS SITE

This potential permanent placement area is located within CAA I OU A.

Vegetation:

The proposed area in the ROW adjacent to Hill Shadow Farm Road is primarily vegetated with White Pine and shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, III, or federal wetlands were found at this proposed spoils site. Streams and other aquatic features were also not found at the proposed site. This site drains from the southeast to the northwest.

Topography and Soils:

At this proposed spoils site, topography slopes gently to the northwest with a slope mapped between 2% and 8%. The Natural Resources Conservation Service (NRCS) has mapped this site to include the Stockbridge loam, 2 to 8% percent slopes (100.0% of proposed site). Erosion potential is slight for 100% proposed site. (The NRCS Erosion Hazards are described as “slight”, “moderate”, “severe”, and “very severe”.)

Best Management Practices:

All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the western downslope side of the proposed spoils area upslope of the vegetated area prior to any site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA I OU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. The Natural Resources Conservation Service maps 100.0% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by the site: 2,000 to 3,000 CY

2.2 WALLOOMSAC (east (a-c)) ROAD SPOILS SITE

This potential permanent placement area is located within CAA I OU A.

Vegetation:

This proposed spoils area south of Walloomsac Road has been regularly mowed and is primarily vegetated with field and meadow grasses.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. Immediately south and to the west of the proposed spoils areas and south of Walloomsac Road exists a forested wetland. This wetland is mapped as a Vermont Class II wetland. The wetland boundary has been flagged at the site and all project activities will occur 100 feet from the wetland boundary (outside of the 100 ft. buffer). This wetland system drains north under Walloomsac Road via culverts and into an intermittent stream channel located to the west of the most northern proposed spoils area at this site. This stream channel drains from the south to the north. All proposed project activities will occur 100 ft. from the top of the streambank of this intermittent stream channel. The proposed site drains from the south to a northwesterly direction.

Topography and Soils:

The proposed spoils areas at this site and south of Walloomsac Road slope to the south and west with a gentle slope mapped between 0% and 3%. The proposed spoils area north of Walloomsac Road slopes towards the northwest with a gentle slope mapped between 0% and 5%. NRCS has mapped this site to include the Georgia loam, 3 to 8 percent slopes, (67.5% of the proposed site), and the Massena silt loam, 0 to 3 percent slopes (32.5% of proposed site). Erosion potential is slight for 100% of the proposed sites, north and south of Walloomsac Road.

Best Management Practices:

All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. For this site, a construction entrance will be constructed and silt fence will be installed upslope of the 100 ft. buffer on the south and west of the proposed spoils areas prior to any site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA I OU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. This is not within a FEMA Flood Hazard Area. Project activities will not occur within the 100 ft. buffer located 100 feet from the wetlands and streams adjacent to the proposed project areas. (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 7,000 CY

2.3 MURPHY ROAD SPOILS SITE

This potential permanent placement area is located within CAA I OU A, south of the Walloomsac River and north of Route 279.

Vegetation:

The majority of this spoils site has been mowed and is primarily vegetated with field and meadow grasses with a small (1/2 acre) area of forested area to be removed (approximately 15-20 trees).

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, III, or federal wetlands were found at this proposed spoils site. Streams and other aquatic features were not found at the proposed site. Drainage from this site is from the east to the northwest.

Topography and Soils:

Topography slopes gently down to the northwest with a slope mapped between 8% and 15%. NRCS has mapped this site to include the Galway-Nellis-Farmington complex, 8 to 15% percent slopes, rocky (12.5% of the proposed site), and the Stockbridge loam, 8 to 15% percent slopes (87.5% of proposed site) (Appendix B). Erosion potential is slight for 87.5% of the proposed area with an increase to moderate for approximately 12.5% of the site.

Best Management Practices:

All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the western downslope side of the proposed spoils area prior to site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA I OU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. NRCS maps 87% of this proposed site as slightly erosive (Appendix B) (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 9,000 CY

2.4 SILK - BRIDGE ROADS SPOILS SITE

This potential permanent placement area is located within CAA I OU A, south of the Walloomsac River and north of Route 279.

Vegetation:

The majority of this spoils site is primarily vegetated with field and meadow grasses and herbaceous material indicative of upland areas.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, III, or federal wetlands were found at this proposed spoils site. Streams and other aquatic features were not found at the proposed site. Drainage from this site is from the west to east. A FEMA Flood Hazard Area exists on the adjacent side of Silk Road, but proposed site activity will be 100 feet from this Hazard Area.

Topography and Soils:

Topography slopes to the east with a slope mapped between 3% and 15%. NRCS has mapped this site to include the Copake gravelly fine sandy loam, 3 to 8 percent slopes (28.6% of the proposed site), the Stockbridge loam, 8 to 15 percent slopes (5.6% of the proposed site), the Georgia loam, 3 to 8 percent slopes (48.4% of the proposed site), and Massena silt loam, 3 to 8 percent slopes (17.5% of the proposed site). Erosion potential is slight for 100% of the proposed site.

Best Management Practices:

Applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the eastern downslope side of the proposed spoils area prior to site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA IOU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area. All proposed work will be 100 ft. from the Flood Hazard Area on the adjacent side of Silk Road. (met criteria);
5. This area is outside of public water supply source protection areas (met criteria);
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 8,000 to 9,000 CY

2.5 VAIL ROAD SPOILS SITE

This potential permanent disposal area is located within CAA IOU A, south of the Walloomsac River and south of Route 279.

Vegetation:

The majority of this spoils site is primarily vegetated with field and meadow grasses and herbaceous material indicative of upland areas. A federal jurisdictional emergent wetland exists immediately southeast of the proposed spoils area.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. A federal jurisdictional emergent wetland exists to the immediately southeast of the proposed spoils area. All three wetland criteria (hydrology, soils, vegetation) were met during this delineation. The wetland boundary adjacent to the proposed spoils area the proposed spoils area has been demarcated with flagging in the field and no material will be deposited within a 100 ft. buffer of this wetland. No Class I, II, or III state wetlands or streams were found at this proposed spoils site. Drainage from this site is from a northwesterly to southeasterly direction. A FEMA Flood Hazard Area does not exist at the proposed spoils site nor in the near vicinity.

Topography and Soils:

Topography slopes to the southeast with a slope mapped between 3% and 15%. NRCS has mapped this site to include the Stockbridge loam, 8 to 15 percent slopes (35.6% of the proposed site) and a Georgia loam, 3 to 8 percent slopes (64.4% of the proposed site). Erosion potential is slight for 100% of this proposed site.

Best Management Practices:

Applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the southeastern downslope side of the proposed spoils area just upslope of the 100 ft. wetland buffer prior to site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA IOU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. A federal wetland exists immediately southeast of the proposed spoils area. A 100 ft. buffer will separate the spoils area and wetland. A silt fence will insure that no sediment enters the 100 ft. buffer area. No streams or FEMA Flood Hazard Areas exist on or near the vicinity of the proposed spoils area. (met criteria);
5. This area is outside of public water supply source protection areas (met criteria);
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 9,000 to 10,000 CY

2.6 HARRINGTON ROAD SPOILS SITE

This potential permanent placement area is located within CAA I OU A, north of the Walloomsac River.

Vegetation:

The majority of this spoils site is primarily vegetated with field and meadow grasses and herbaceous material indicative of upland areas. The 100 year floodplain for the Walloomsac River exists downslope of this spoils site separated by a 100 ft. buffer.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No Class I, II, or III state and federal jurisdictional wetlands or streams were found at this proposed spoils site. Drainage from this site is from a northeasterly to southeasterly direction. A FEMA Flood Hazard Area exists in the near vicinity of the project area, but is separated by a 100 ft. buffer.

Topography and Soils:

Topography slopes to the southeast with a slope mapped between 8% and 15%. NRCS has mapped this site to include the Stockbridge loam, 8 to 15 percent slopes (100.0% of the proposed site). Erosion potential is slight for 100% of this proposed site.

Best Management Practices:

Applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the southwestern downslope side of the proposed spoils area just upslope of the 100 ft. floodplain buffer prior to site disturbance.

VT ANR Criteria:

1. This placement option is located within CAA I OU A as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. A 100 year floodplain exists immediately southwest of the proposed spoils area. A 100 ft. buffer will separate the spoils area and the 100 year floodplain. A silt fence will insure that no sediment enters the 100 ft. buffer area. No wetlands or streams exist within 150 ft. of the proposed spoils site. Drainage from this spoils site would not enter these wetlands or streams that are greater than 150 ft. from the spoils site. (met criteria);

5. This area is outside of public water supply source protection areas (met criteria);
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

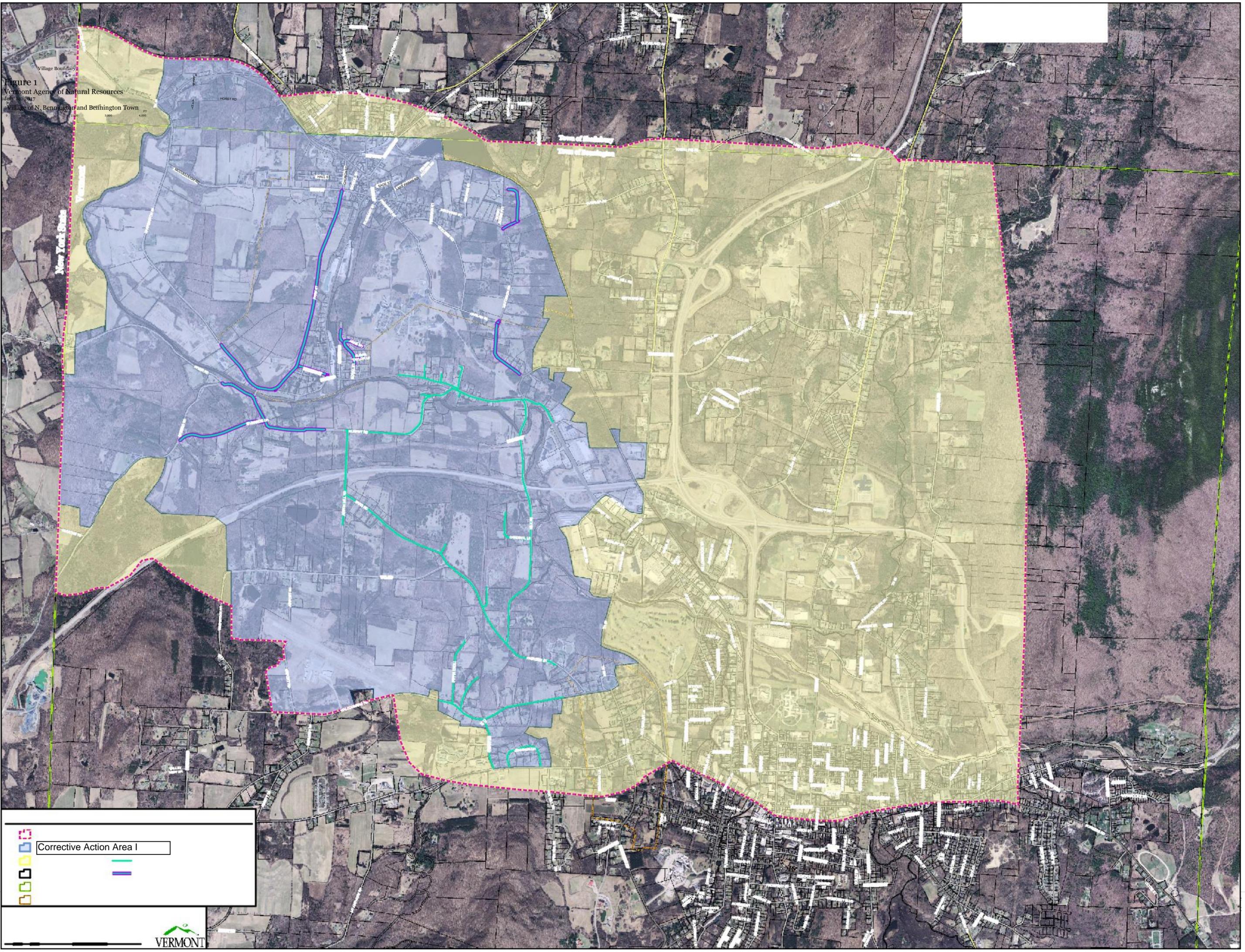
Spoils accommodated by this site: 2,000 CY

2.6 CONCLUSION

The purpose of the project is to ensure a suitable location for placement 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. This Spoils Management Report addresses five permanent locations that are suitable for the excess soil for this water main and service line project. All six sites have met 5 of the 6 VT ANR siting criteria. Criteria 2.0 has not been met at each site because each location is privately owned except for the ROW adjacent to Hill Shadow Farm Road. In the VR ANR guidance, Criteria 2.0 includes the wording, "if possible". All publicly owned land and public ROW's have been analyzed for this spoils management project, but have not been found to be suitable locations. An extensive review of the project area has shown that private land is more suited as spoils sites for this project in Correction Area I. These sites were carefully selected due to their proximity to the generation of the spoils material and that the fact that they met 5/6 of the VT ANR siting criteria.

APPENDIX A
CORRECTIVE ACTION AREA I

Figure 1
Vermont Agency of Natural Resources
July 14, 2017
Village of N. Bennington and Bennington Town

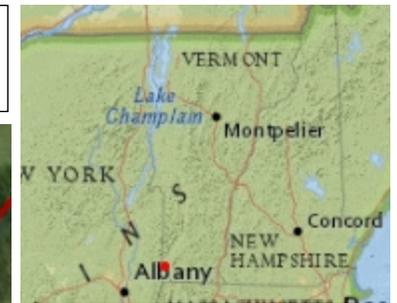


Legend:

- Village Boundary
- Corrective Action Area I
- [Unlabeled]
- [Unlabeled]

APPENDIX B

MAP & PHOTOS OF EACH SPOILS SITE LOCATION



LEGEND

Wetland - VSWI

- Class 1 Wetland
- Class 2 Wetland
- Buffer

Flood Hazard Areas (Only FEMA)

- AE (1-percent annual chance flood)
- A (1-percent annual chance floodpl.)
- AO (1-percent annual chance zone feet)
- 0.2-percent annual chance flood ha

- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary

Spoils Site
(2000 to 3000 CY +/-)

1: 3,826

October 12, 2017



NOTES

Map created using ANR's Natural Resources Atlas

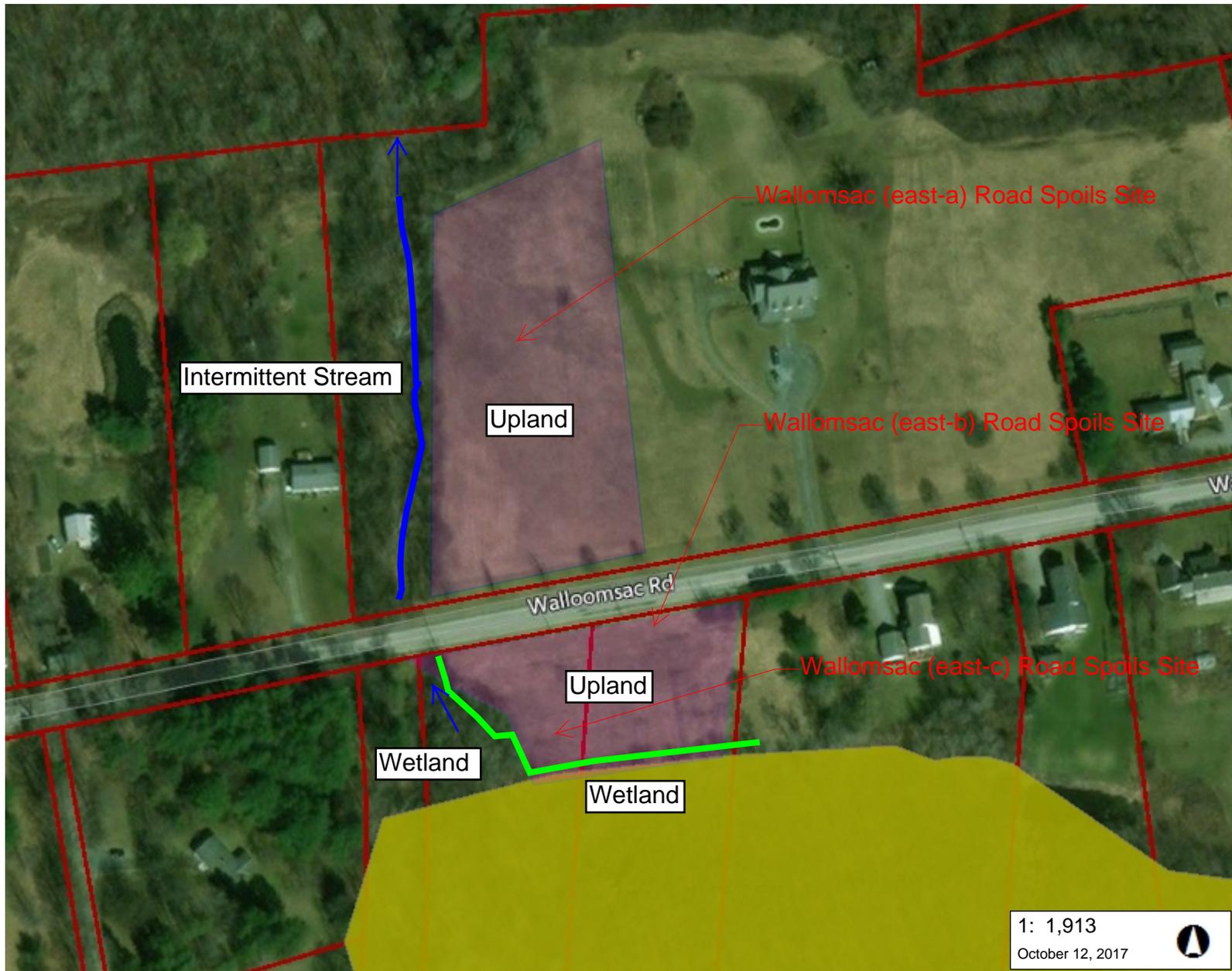
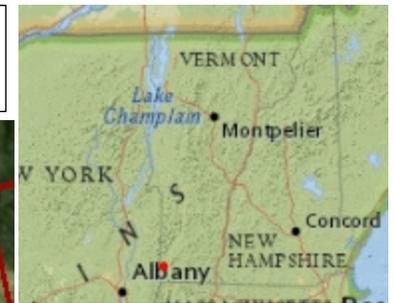
MS&K, Inc.

194.0 0 97.00 194.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere
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1" = 319 Ft. 1cm = 38 Meters
THIS MAP IS NOT TO BE USED FOR NAVIGATION

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LEGEND

- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Flood Hazard Areas (Only FEMA)
 - AE (1-percent annual chance flood)
 - A (1-percent annual chance floodpl.)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary
- Permanent Spoils Sites (7000 CY +/-)
- Wetland Boundary
- Intermittent Stream
- Direction of Flow

1: 1,913
October 12, 2017

97.0 0 48.00 97.0 Meters
 WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 159 Ft. 1cm = 19 Meters
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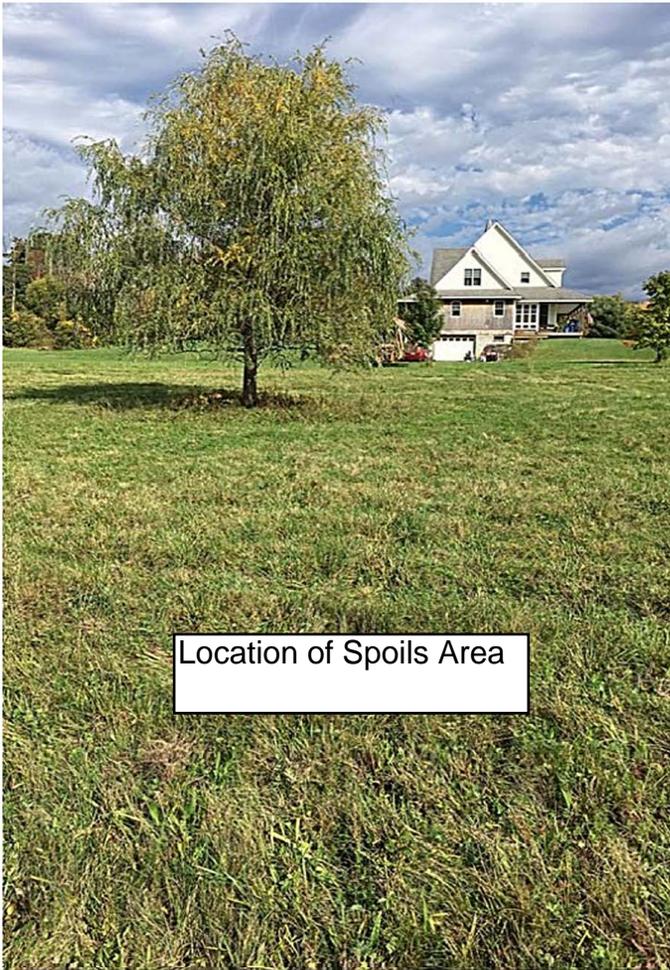
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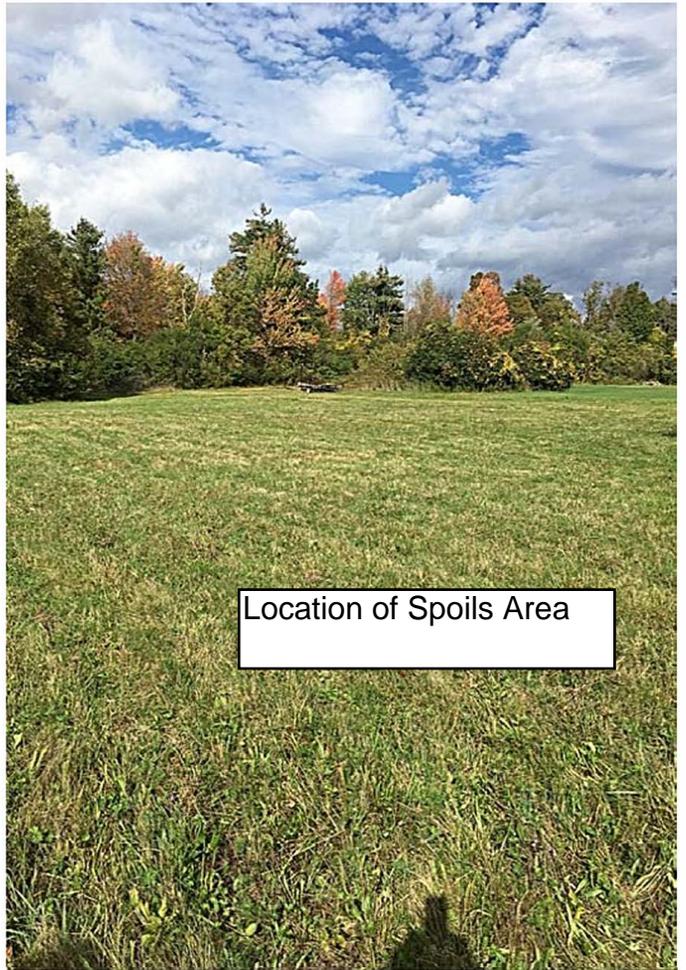
MS&K, Inc

Walloomsac (east) Road Spoil Site (north of Walloomsac Road)



Location of Spoils Area

View to an easterly direction



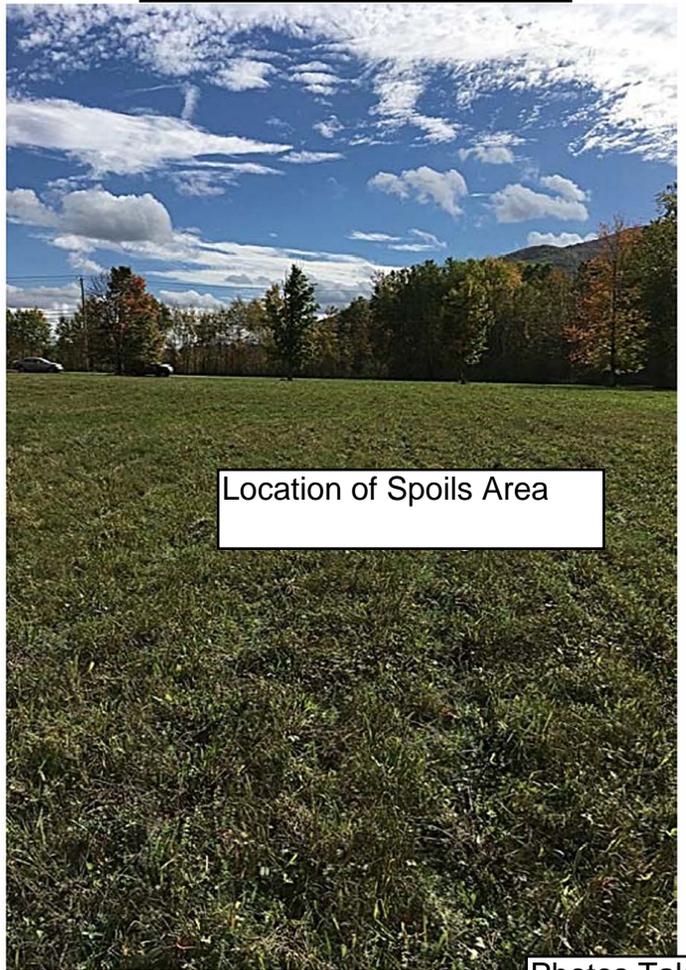
Location of Spoils Area

View to a northerly direction



Location of Spoils Area

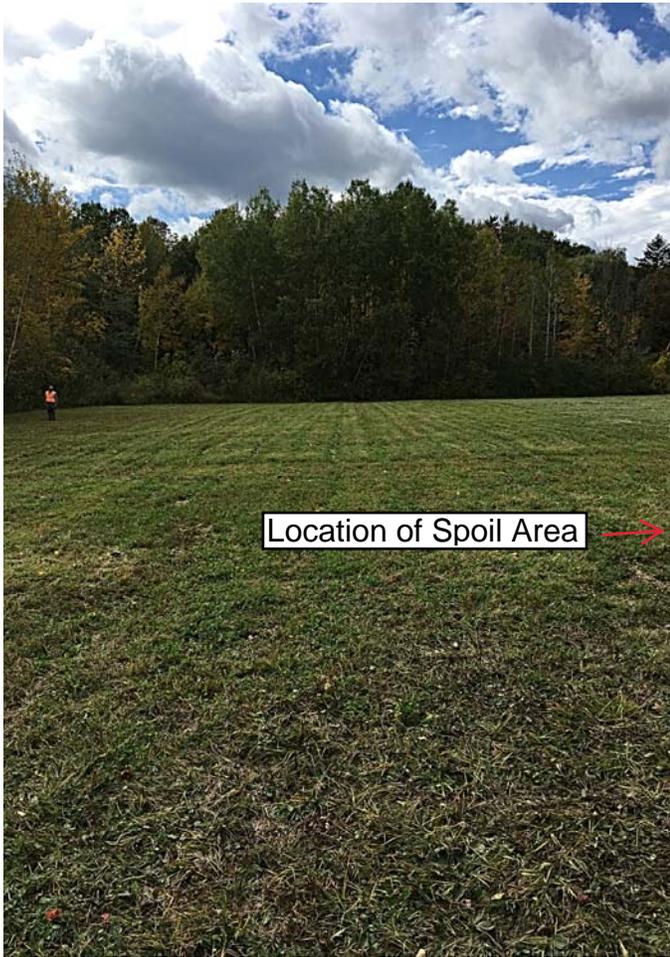
View to a northerly direction



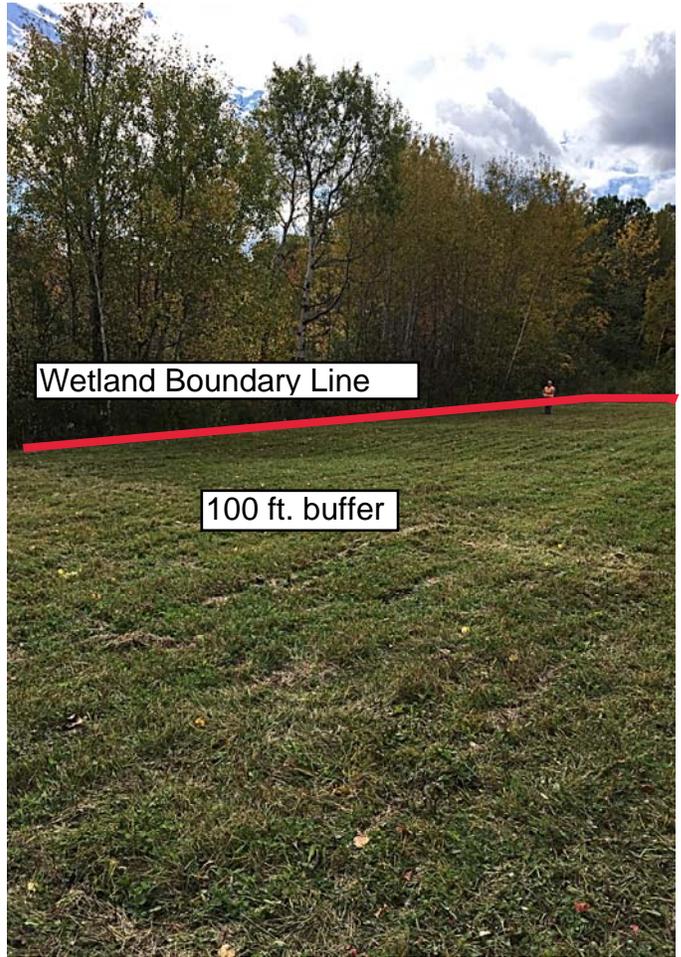
Location of Spoils Area

View to a southerly direction

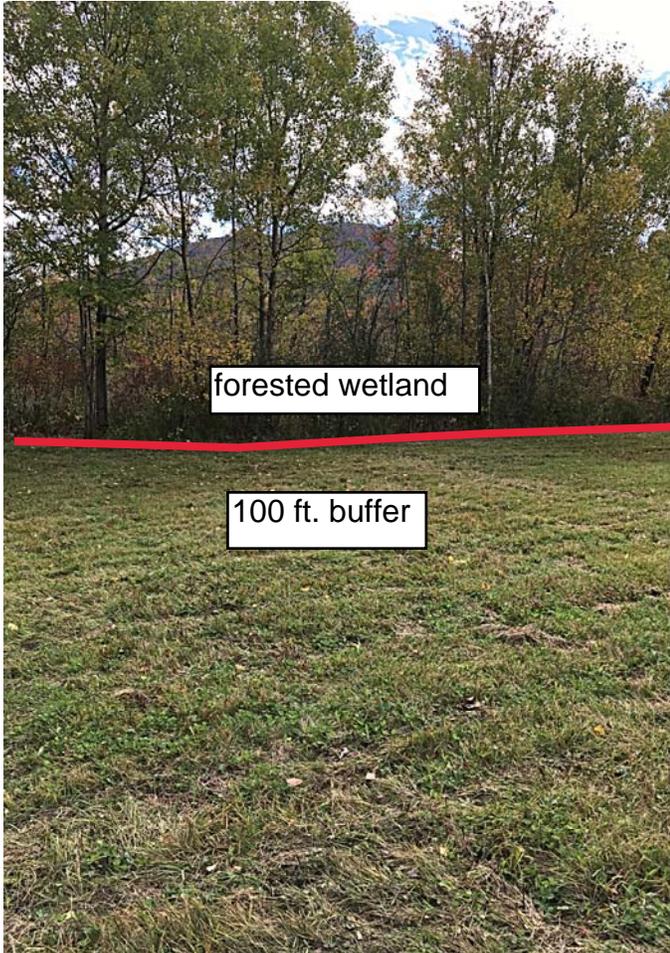
Walloomsac (east-a) Road Spoils Site (south of Walloomsac Road)



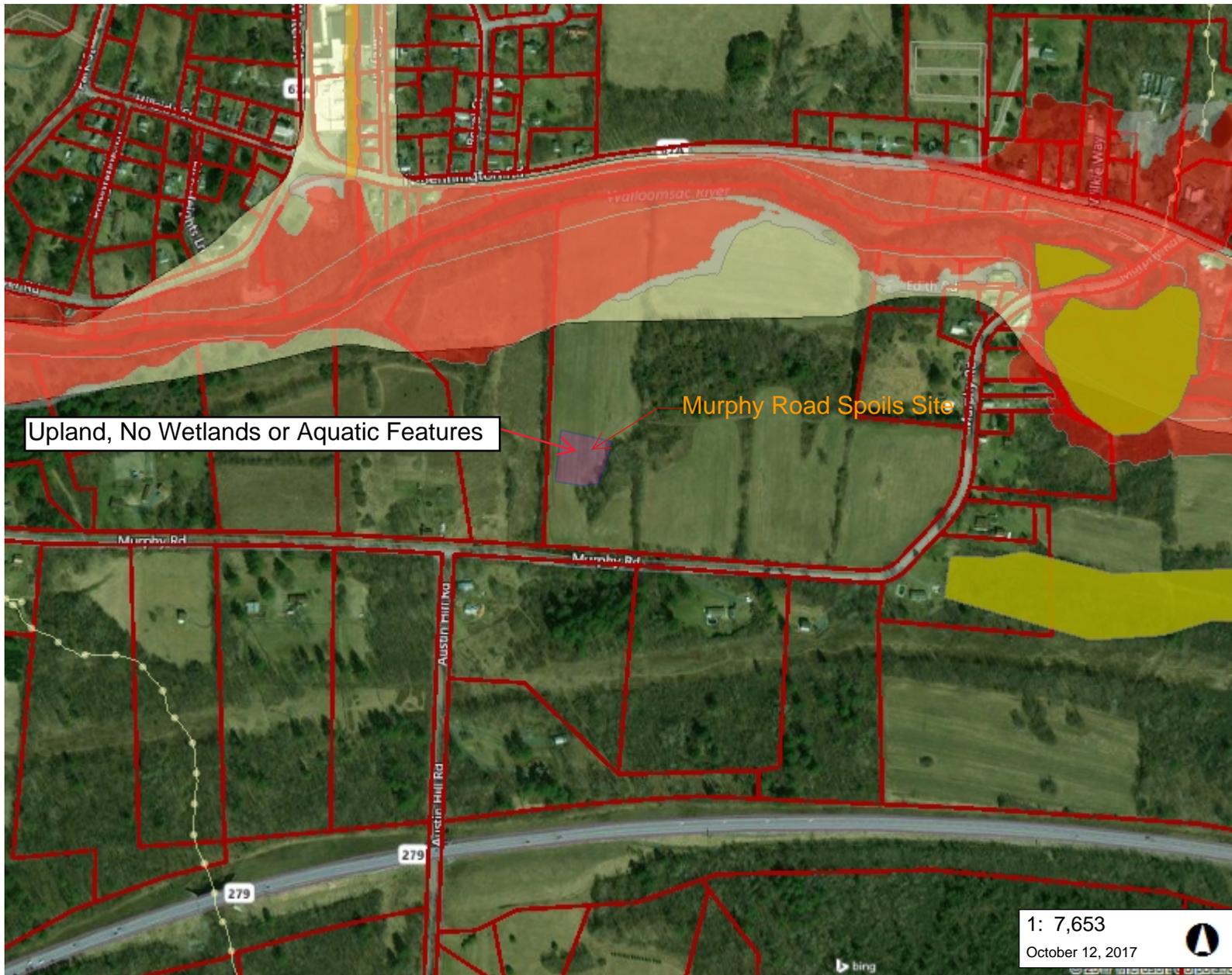
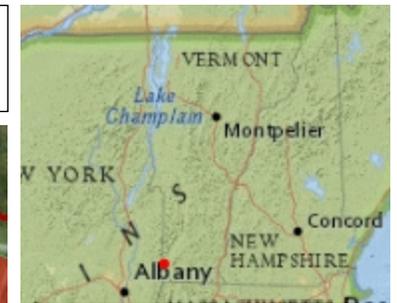
View to a westerly direction



View to a southwesterly direction



View to a southerly direction



LEGEND

- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- M
- AE (1-percent annual chance floodplains)
- A (1-percent annual chance floodplains)
- AO (1-percent annual chance zone of shallow flooding 1-3 feet)
- 0.2-percent annual chance flood hazard zone
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary
- Proposed Spoils Site (9000 CY +/-)

1: 7,653
October 12, 2017

389.0 0 194.00 389.0 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere
© Vermont Agency of Natural Resources
1" = 638 Ft. 1cm = 77 Meters
THIS MAP IS NOT TO BE USED FOR NAVIGATION

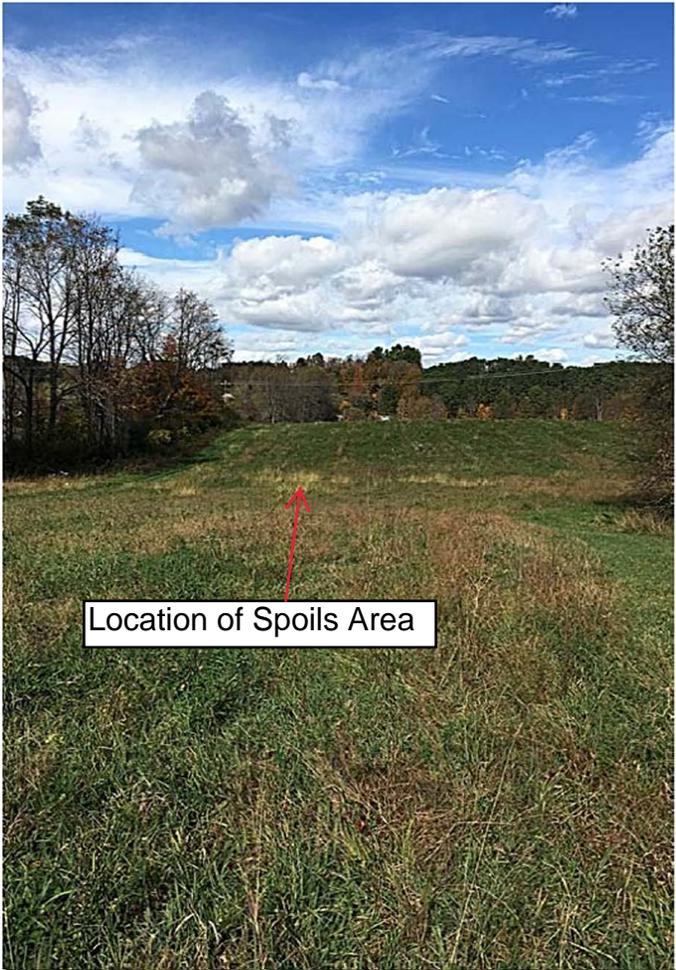
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NOTES

Map created using ANR's Natural Resources Atlas

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Murphy Road Spoils Site



Location of Spoils Area

View to a northerly direction



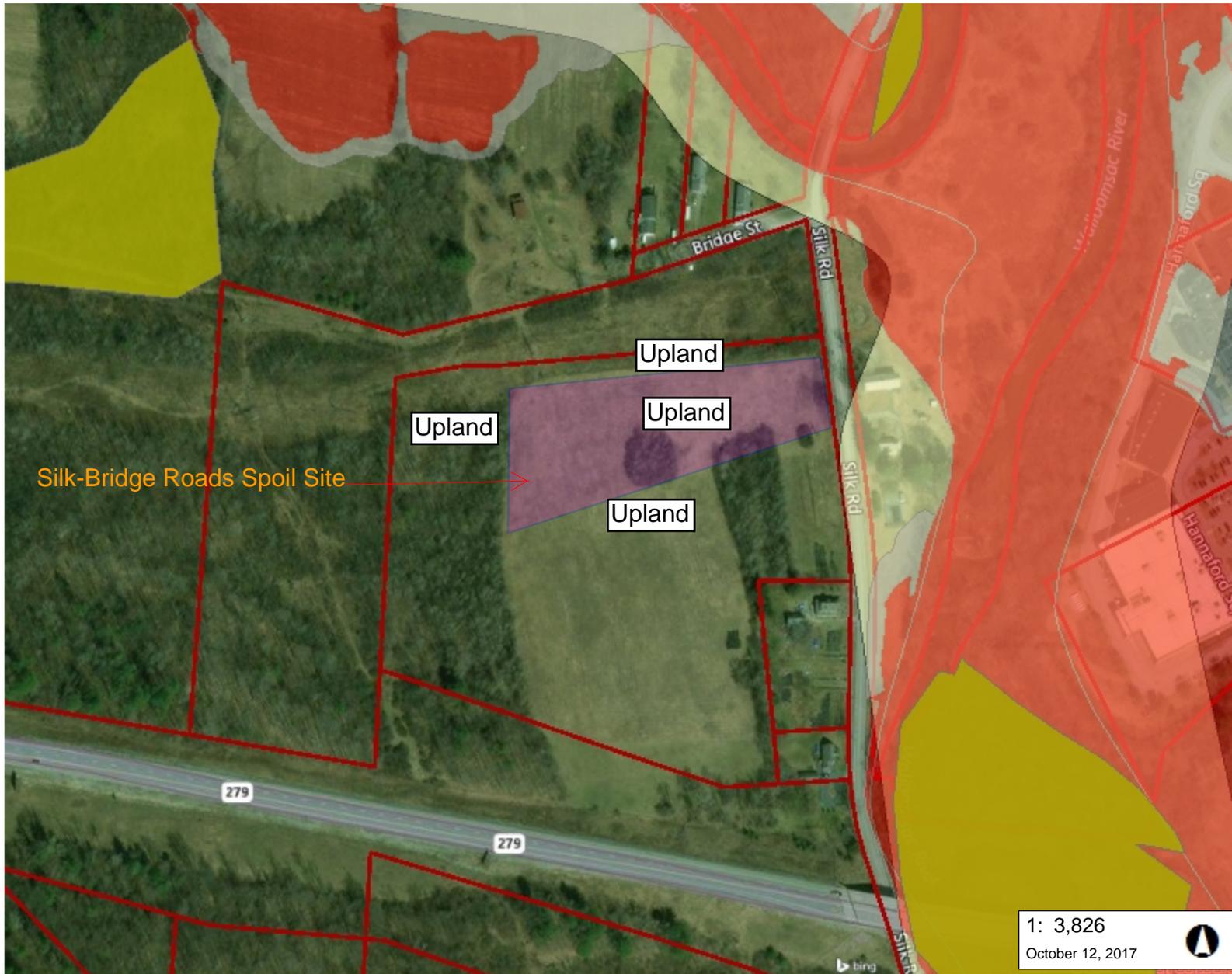
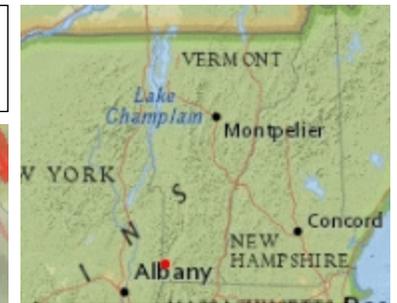
Location of Spoils Area

View to a northerly direction



Trees to be Removed

View to a northerly direction



LEGEND

- Wetland - VSWI**
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Flood Hazard Areas (Only FEMA)**
 - AE (1-percent annual chance floodpl)
 - A (1-percent annual chance floodpl)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary
- Permanent Spoils Sites (8000 to 9000 CY +/-)**

1: 3,826
October 12, 2017

194.0 0 97.00 194.0 Meters
 WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 319 Ft. 1cm = 38 Meters
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NOTES

Map created using ANR's Natural Resources Atlas

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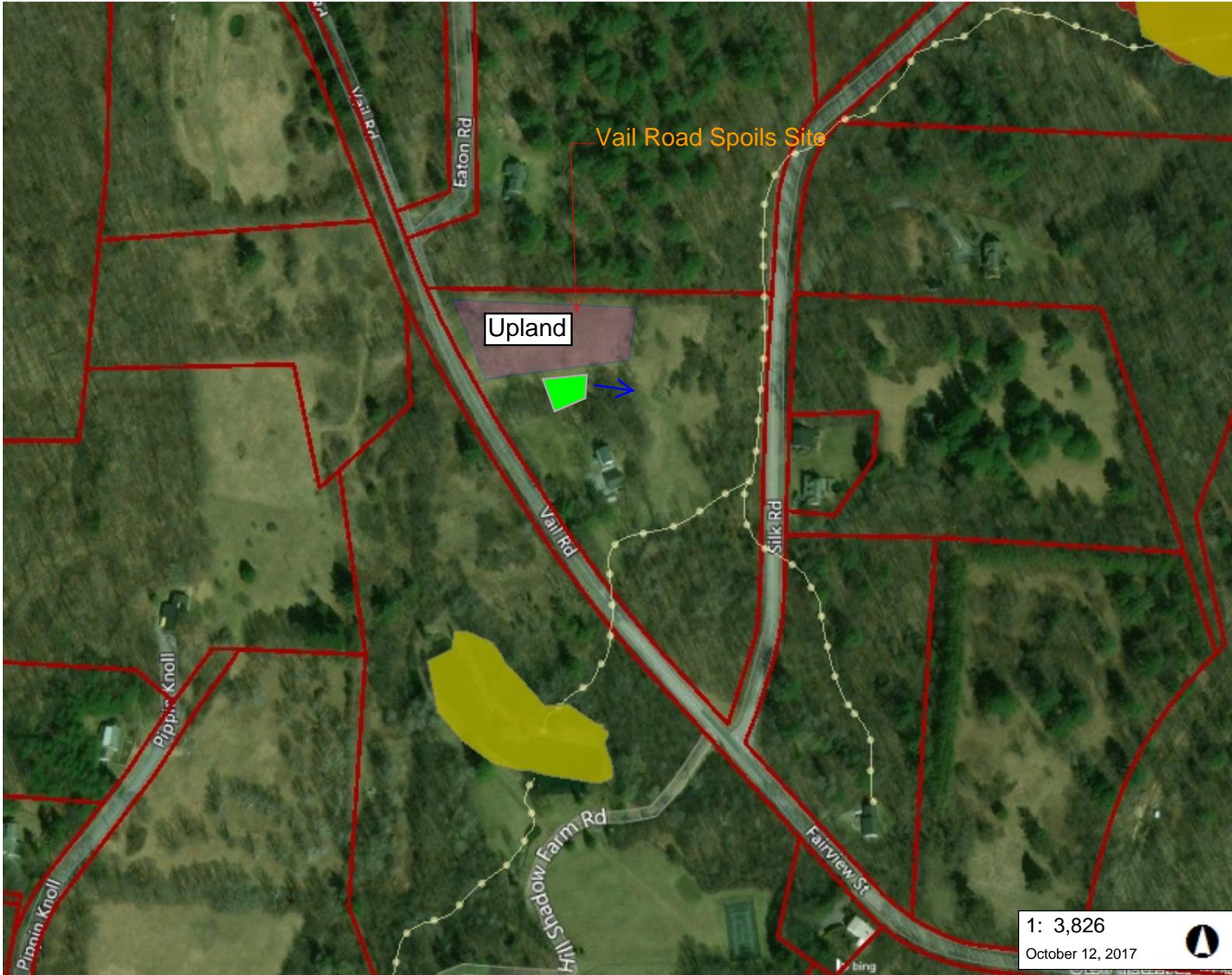
Silk-Bridge Roads Spoils Site



Spoils Site Location

View to a westerly direction

Photos Taken:
10-10-2017



LEGEND

- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Flood Hazard Areas (Only FEMA)
 - AE (1-percent annual chance floodpl.)
 - A (1-percent annual chance floodpl.)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary
- Permanent Spoils Sites (9000 to 10,000 CY +/-)
- Delineated Wetland
- Direction of Flow

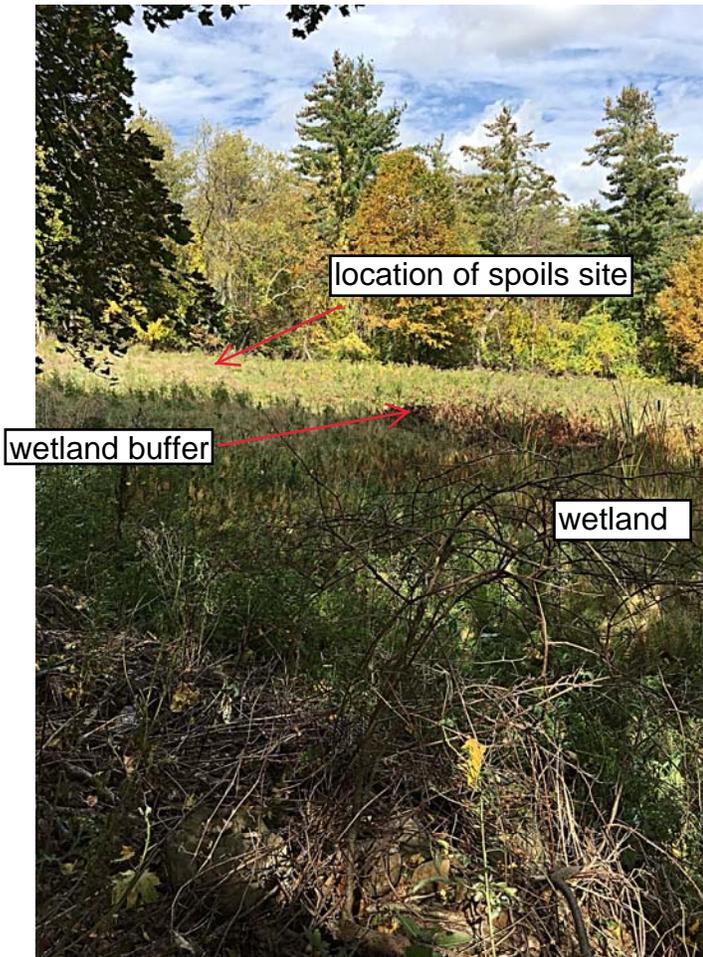
1: 3,826
October 12, 2017

194.0 0 97.00 194.0 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 319 Ft. 1cm = 38 Meters
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NOTES
Map created using ANR's Natural Resources Atlas
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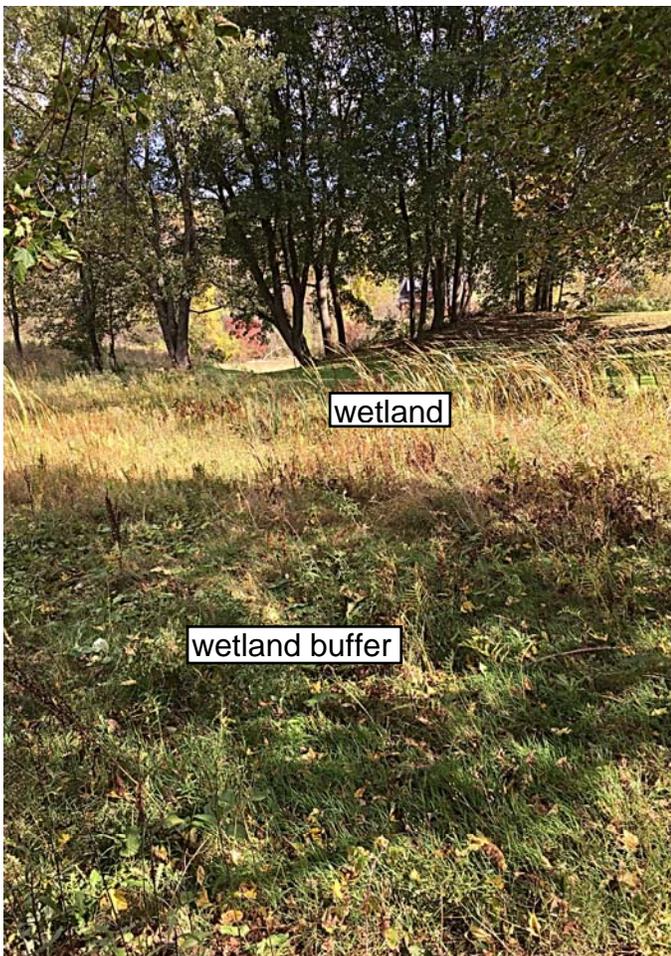
Vail Road Spoils Site



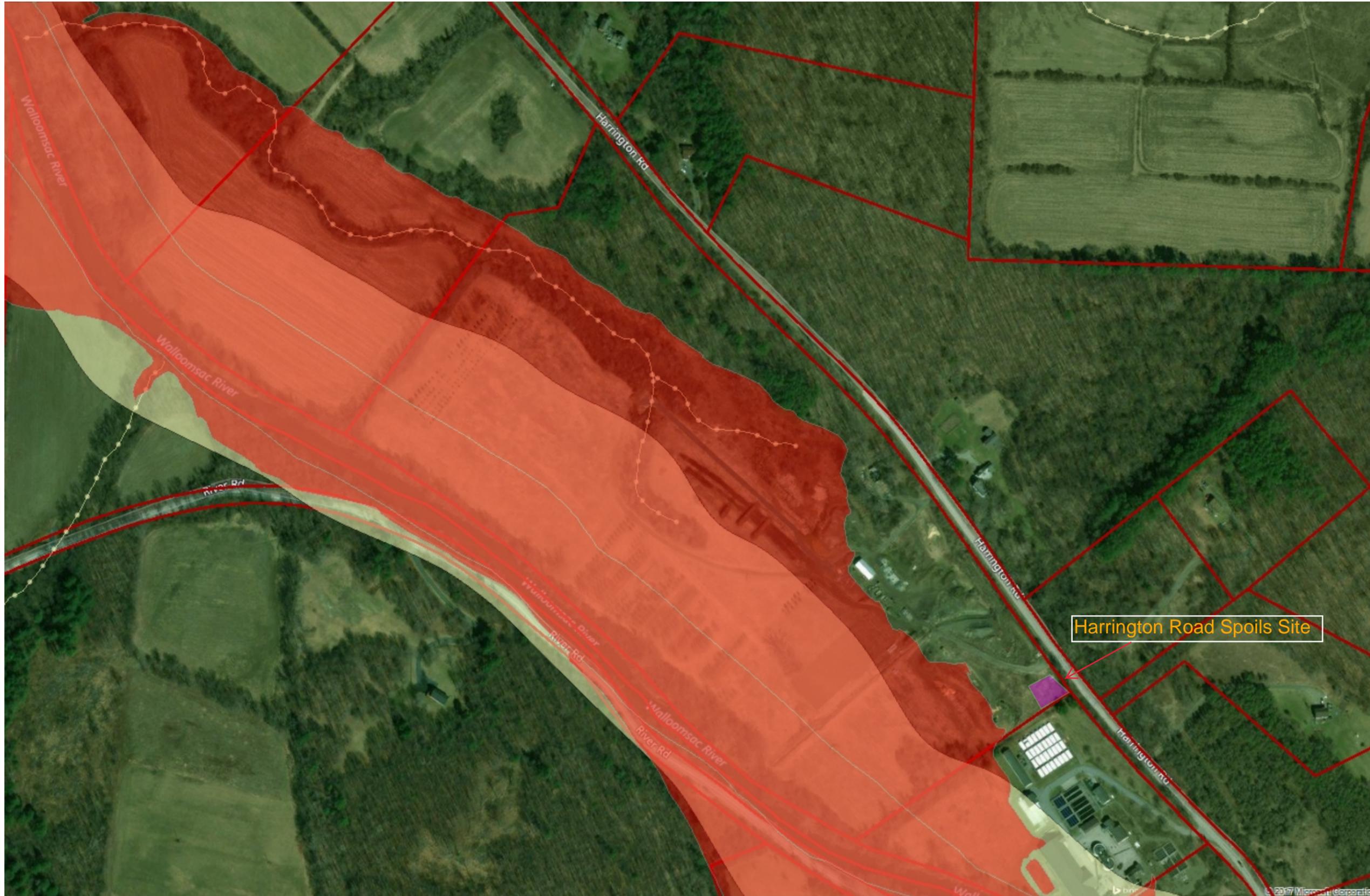
View to a northwesterly direction



View to a northeasterly direction



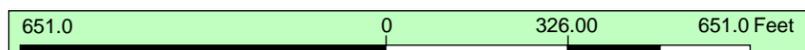
View to an easterly direction



LEGEND

- Flood Hazard Areas (Only FEMA-digitized)
- AE (1-percent annual chance floodplains with elevation data)
 - A (1-percent annual chance floodplains without elevation data)
 - AO (1-percent annual chance zone of shallow flooding)
 - 0.2-percent annual chance flood hazard zone
 - River Corridors (Jan 2, 2015)
 - Small Streams - 50ft Setback
 - Parcels (where available)
 - Town Boundary

■ Spoils Site
2,000 CY +/-



WGS_1984_Web_Mercator_Auxiliary_Sphere
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THIS MAP IS NOT TO BE USED FOR NAVIGATION

1: 3,907
1in = 326 ft.
1cm = 39 meters

NOTES
Map created using ANR's Natural Resources Atlas
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Harrington Road Spoils Site



location of spoils site, prior fill location

View to a northwesterly direction



location of spoils site, prior fill location

View to a southwesterly direction. Mowed area contains the 100 year floodplain.

ADDENDUM A

WALLOOMSAC - PIPPIN KNOLL ROADS SPOILS SITE

3.2 WALLOOMSAC - PIPPIN KNOLL ROADS SPOILS SITE

This potential permanent disposal area is located on the southwestern area of Corrective Action Area II, but is contiguous with areas demarcated as Corrective Action Area I (CAA I OU A).

Vegetation:

The proposed area located to the north of Walloomsac Road and to the west of Pippin Knoll Road is primarily vegetated with Common Buckthorn (*Rhamnus cathartica*), Silky Dogwood (*Cornus amomum*), and other shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, III, or federal wetlands were found at this proposed spoils site. Streams and other aquatic features were also not found at the proposed site. This site drains from the northeast to the southwest.

Topography and Soils:

At this proposed spoils site, topography slopes gently to the northeast to the southwest with a slope mapped between 2% and 8%. The Natural Resources Conservation Service (NRCS) has mapped this site to include the Stockbridge loam, 2 to 8% percent slopes (100.0% of proposed site). Erosion potential is slight for 100% proposed site.

Best Management Practices:

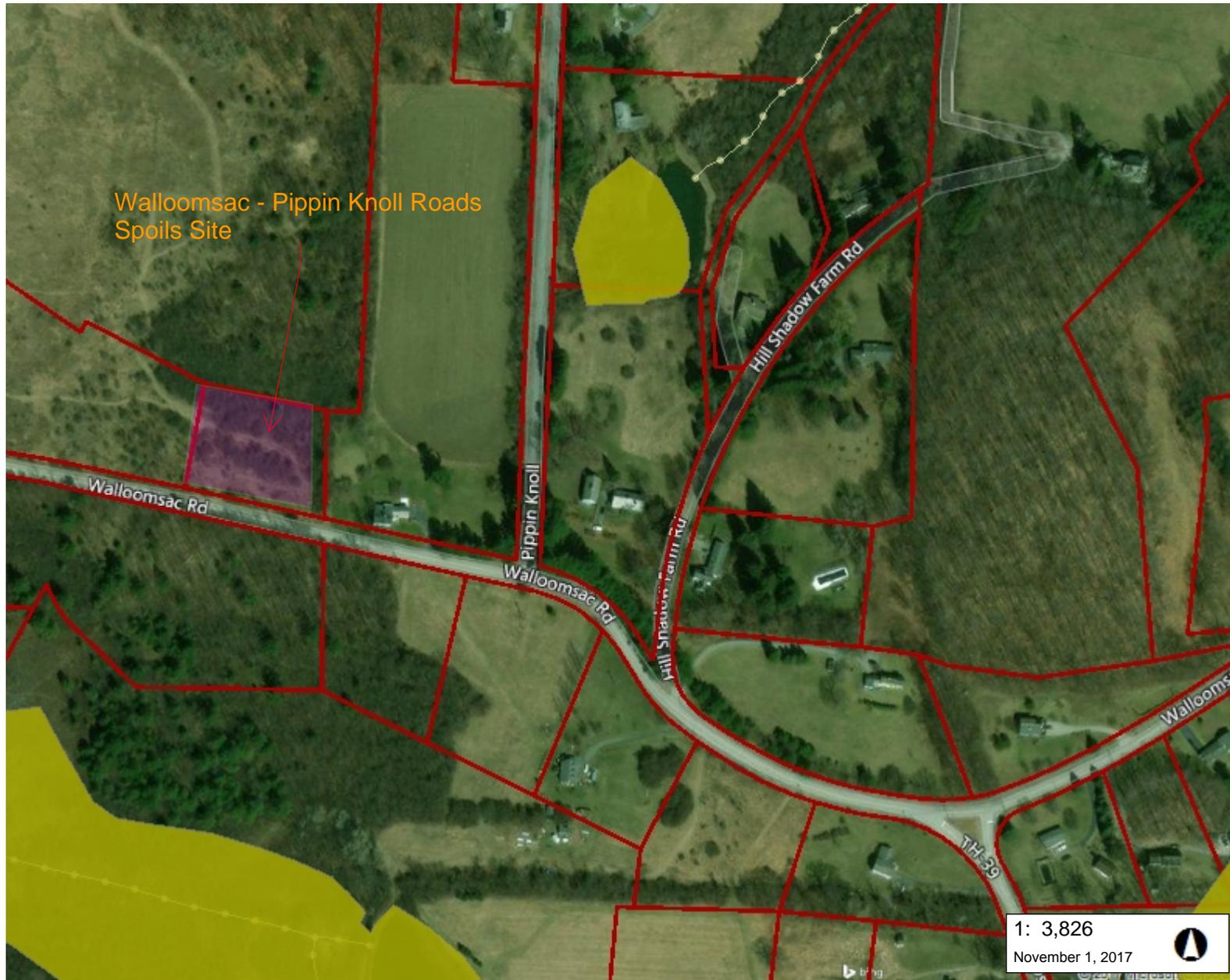
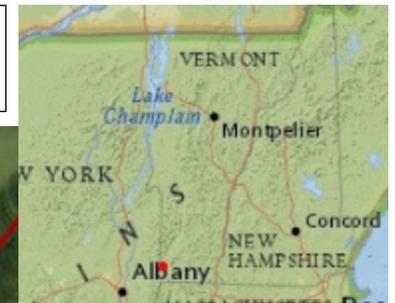
All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the western downslope side of the proposed spoils area upslope of the vegetated area prior to any site disturbance.

VT ANR Criteria:

1. This disposal option is located within the central area of Corrective Action Area II, but contiguous with areas demarcated as Corrective Action Area I (CAA I OU A);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. The Natural Resources Conservation Service maps 100% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 4/6

Spoils accommodated by the site: 7,000 to 9,000 CY



Walloomsac - Pippin Knoll Roads Spoils Site

LEGEND

- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Flood Hazard Areas (Only FEMA)
 - AE (1-percent annual chance flood)
 - A (1-percent annual chance floodpl.)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (where available)
- Town Boundary
- Spoils Site (7000 to 9000 CY +/-)

1: 3,826
November 1, 2017



NOTES

Map created using ANR's Natural Resources Atlas

MS&K, Inc.

194.0 0 97.00 194.0 Meters
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ADDENDUM B

RIVERSIDE DRIVE SPOILS SITE

3.3 RIVERSIDE DRIVE SPOILS SITE

This potential permanent disposal area is located on the southwestern area of Corrective Action Area I (CAA I OU A).

Vegetation:

The proposed area is located to the east and west of Riverside Drive in the Town of Bennington, VT. The spoils site is primarily vegetated with field grasses with a small patch of shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Vermont State Class I, II, III streams, aquatic features, or federal wetlands were found at the proposed spoils site. A tributary to the Walloomsac River is greater than 100 feet from the proposed spoils site. This site drains from the northwest to the southeast and towards a tributary of the Walloomsac River.

Topography and Soils:

At the proposed spoils site, topography slopes from the northwest to the southeast with a slope mapped between 8% to 15%. The Natural Resources Conservation Service (NRCS) has mapped this site to include the Macomber-Taconic complex, 8 to 15% percent slopes (100.0% of proposed site). Erosion potential is slight for 100% proposed site.

Best Management Practices:

All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and all bare soil will be stabilized as soon as practicable.

VT ANR Criteria:

1. This disposal option is located within Corrective Action Area I (CAA I OU A);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. The Natural Resources Conservation Service maps 100% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by the site: 7,000 to 9,000 CY

Spoils Site, Riverside Drive, Photo 1

View looking southeast to northwest where spoils would be placed.



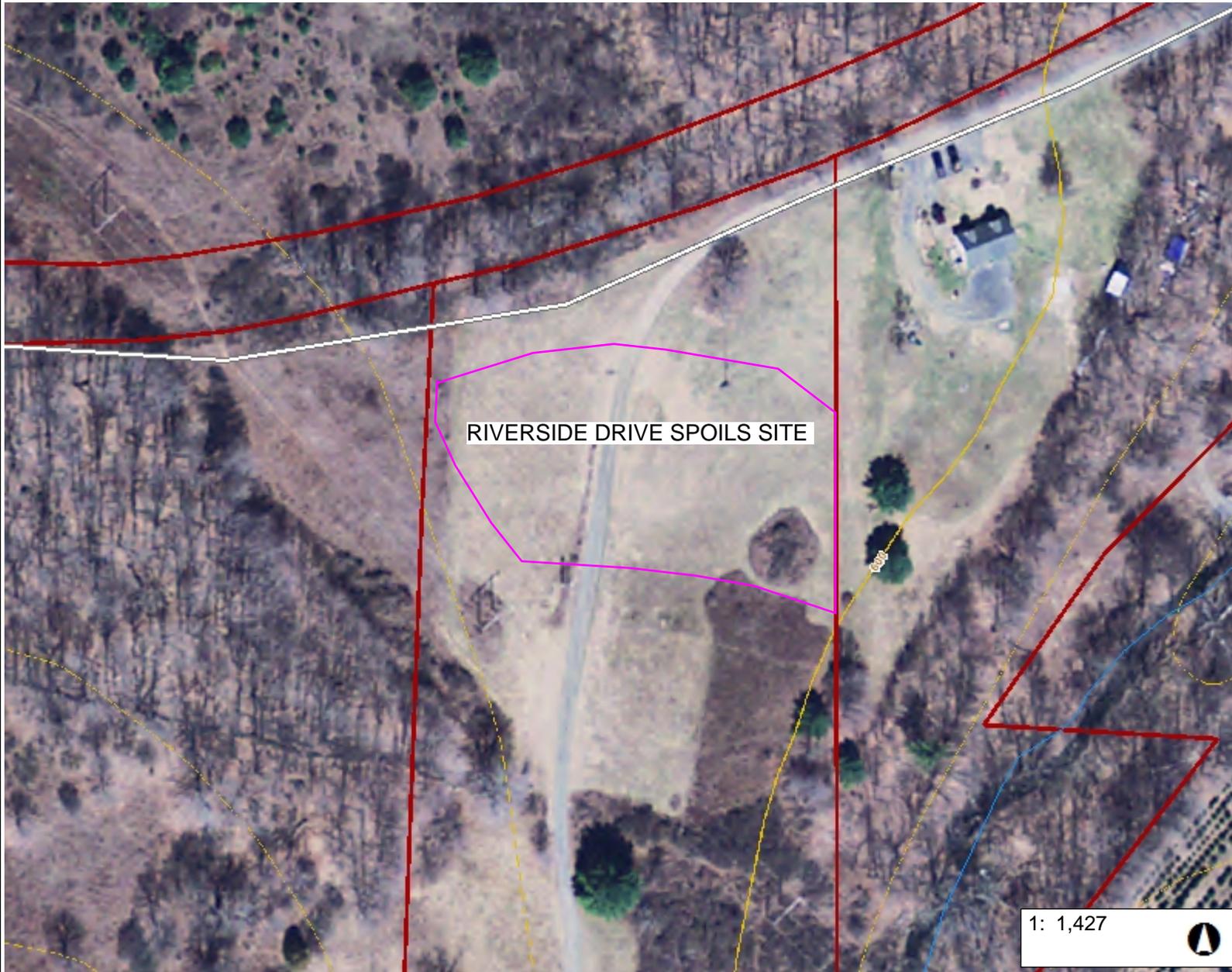
Photo Taken: December 8, 2017



Spoils Site, Riverside Drive, Photo 2

View looking southeast to northwest where spoils would be placed.

Photo Taken: December 8, 2017



LEGEND

-  Act250 Permits **INCOMPLET
- Roads**
-  Interstate
-  Principal Arterial
-  Minor Arterial
-  Major Collector
-  Minor Collector
-  Local
-  Not part of function Classification S
-  Waterbody
-  Stream
-  Parcels (where available)
-  Town Boundary
-  PROPOSED SPOILS AREA

NOTES

Map created using ANR's Natural Resources Atlas

December 8, 2017
 MS & K

73.0 0 36.00 73.0 Meters
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ADDENDUM C

RIVERSIDE DRIVE SPOILS SITE B

3.3 RIVERSIDE DRIVE SPOILS SITE B

This potential permanent disposal area is located on the southwestern area of Corrective Action Area I (CAA I OU A). Property owners have approved placement of spoils on their site.

Vegetation:

The proposed area is located to the south of Riverside Drive in the Town of Bennington, VT. The spoils site is primarily vegetated with field grasses and shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Vermont State Class I, II, III streams, aquatic features, or federal wetlands were found at the proposed spoils site. A tributary to the Walloomsac River and its floodplain are greater than 100 feet from the proposed spoils site. This site drains from the northwest to the southeast and towards a tributary of the Walloomsac River.

Topography and Soils:

At the proposed spoils site, topography slopes from the northwest to the southeast with a slope mapped between 8% to 15%. The Natural Resources Conservation Service (NRCS) has mapped this site to include the Macomber-Taconic complex, 8 to 15% percent slopes (100.0% of proposed site). Erosion potential is slight for 100% proposed site.

Best Management Practices:

All applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. Silt fence will be installed on the downslope side of spoils area and bare soil will be stabilized as soon as practicable.

VT ANR Criteria:

1. This disposal option is located within Corrective Action Area I (CAA I OU A);
2. This is private property;
3. This area has a gentle slope and with limited erosion potential. The Natural Resources Conservation Service maps 100% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not with a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria); and
6. All homes in this area will be supplied by the installation of new water main so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by the site: 3,000 to 5,000 CY

Riverside Drive Spoils Site B, Town of Bennington, VT



Proposed Spoils Area

View from Riverside Drive looking southeast.



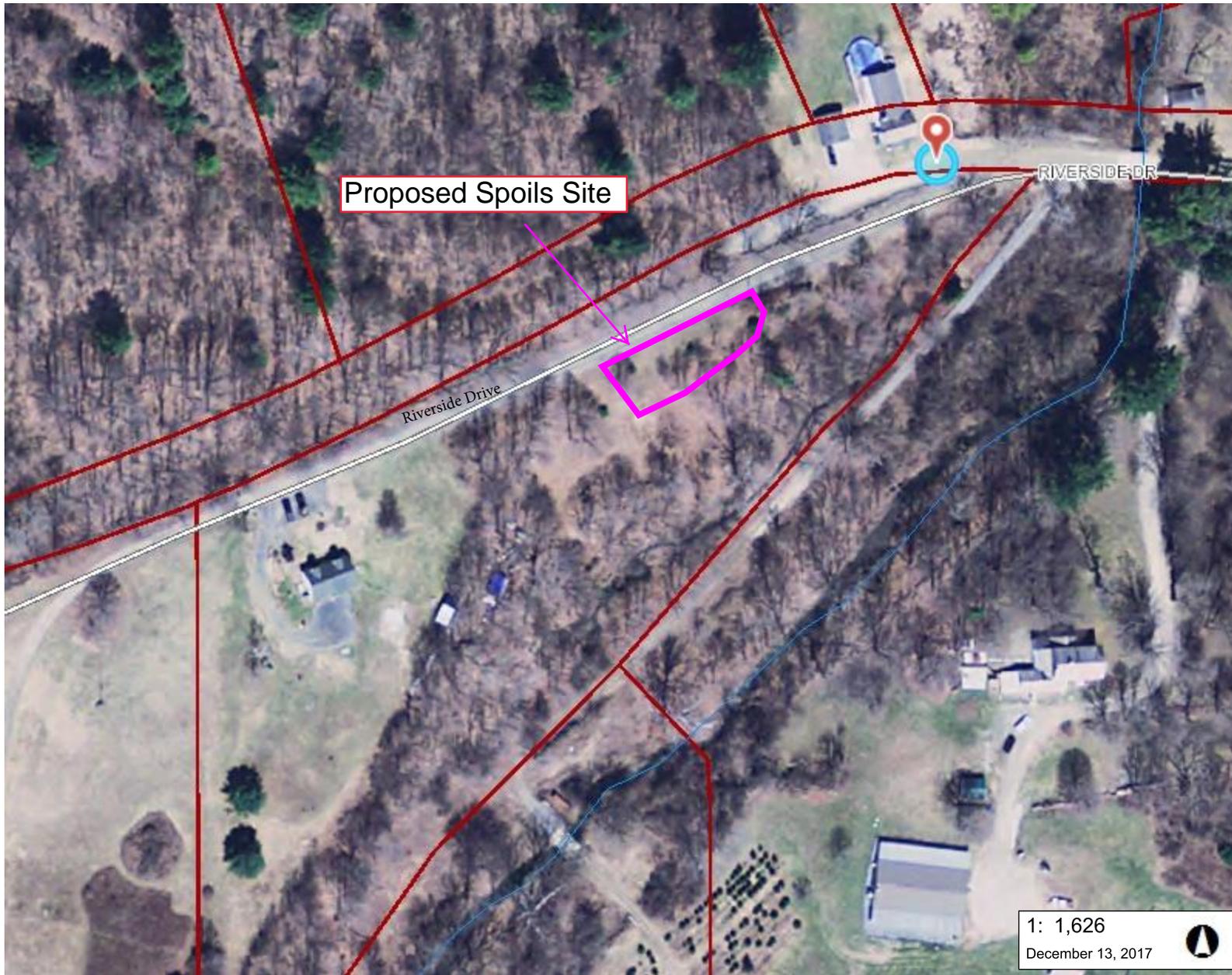
Proposed Spoils Area

View to the east.

Riverside Drive Spoils Site B, Town of Bennington, VT



View to the southwest.



Proposed Spoils Site

Riverside Drive

RIVERSIDE DR

1: 1,626

December 13, 2017



WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 136 Ft. 1cm = 16 Meters
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LEGEND

- Roads**
- Interstate
 - Principal Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local
 - Not part of function Classification S

- Waterbody
- Stream
- Parcels (where available)
- Town Boundary

Spoils Site B

NOTES

Map created using ANR's Natural Resources Atlas
MS & K
December 13, 2017

ADDENDUM D

POLYGRAPHIC LANE SPOILS SITE

3.5 POLYGRAPHIC LANE SPOILS SITE

This potential permanent disposal area is located within the central portion of CAA I OU A, north of the Walloomsac River.

Vegetation:

The majority of this spoils site is primarily vegetated with field and meadow grasses and shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, or III state and federal jurisdictional wetlands or streams were found at this proposed spoils site. This is an existing fill site for stumps and other brush. Drainage from this site is from a northeasterly to southwesterly direction.

Topography and Soils:

Topography slopes to the southeast with a slope mapped between 8% and 15%. NRCS has mapped this site to include the Stockbridge loam, 8 to 15 percent slopes (100.0% of the proposed site). Erosion potential is slight for 100% of this proposed site.

Best Management Practices:

Applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed along the southern boundary of the spoils site along River Road.

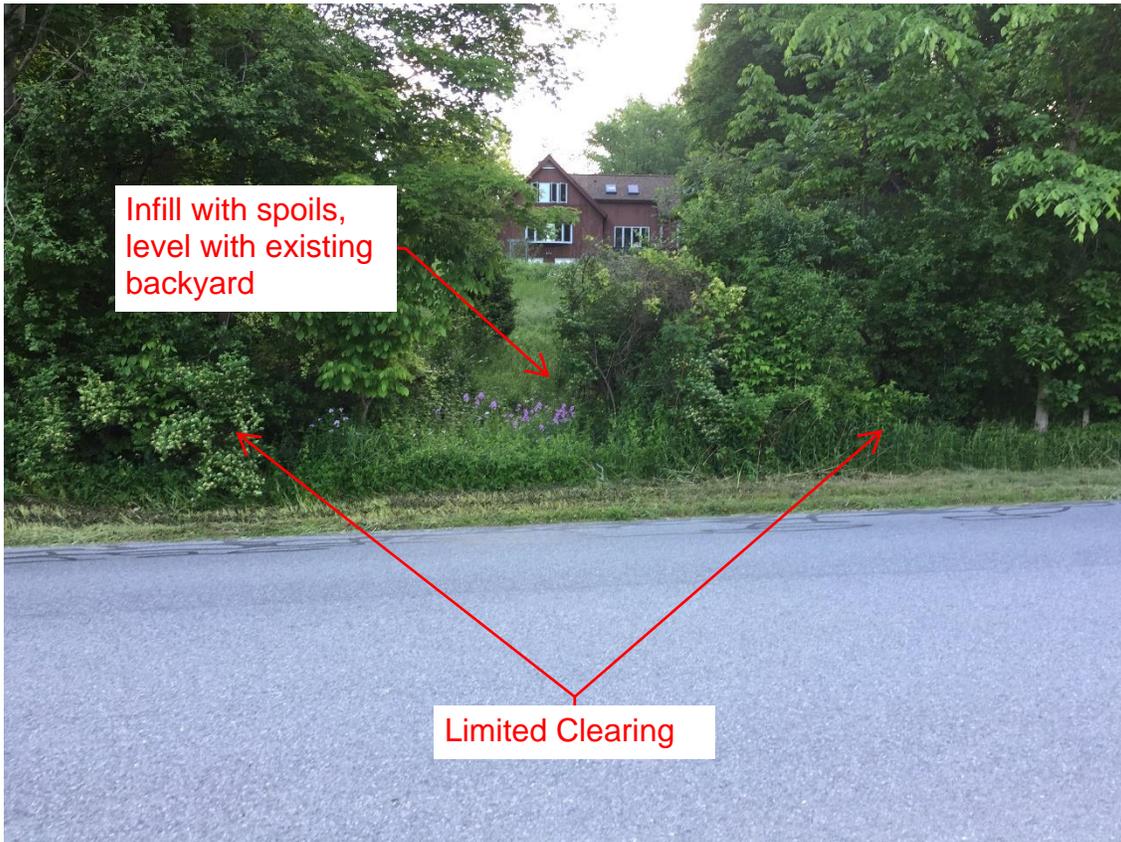
VT ANR Criteria:

1. This disposal option is located within the central area of Corrective Action Area I as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. A 100 year floodplain exists immediately southwest of the proposed spoils area. A 100 ft. buffer will separate the spoils area and the 100 year floodplain. A silt fence will insure that no sediment enters the 100 ft. buffer area. No wetlands or streams exist within 150 ft. of the proposed spoils site. Drainage from this spoils site would not enter these wetlands or streams that are greater than 150 ft. from the spoils site. (met criteria);
5. This area is outside of public water supply source protection areas (met criteria);

6. All homes in this area will be supplied by the installation of new water main or are currently served by a municipal water system so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 1,500 CY



From River Road, Looking North Towards 15 Polygraphic Lane



Looking West



Looking West



Looking Northwest

K:_DRAWING DATABASE\1901-1913\1913 POLYGRAPHIC LANE SPOIL SITE.DWG
 23 May 2018 07:16:10 AM



○ POLYGRAPHIC LANE SPOIL SITE
 0 30 60 Feet

Scale: 1:30



MSK
MSK ENGINEERING AND DESIGN, INC.
 P.O. BOX 139, 150 DEPOT STREET
 BENNINGTON, VERMONT 05201
 PH: (802) 447-1402 FAX: (802) 445-1281

REVISIONS	
NO.	DESCRIPTION

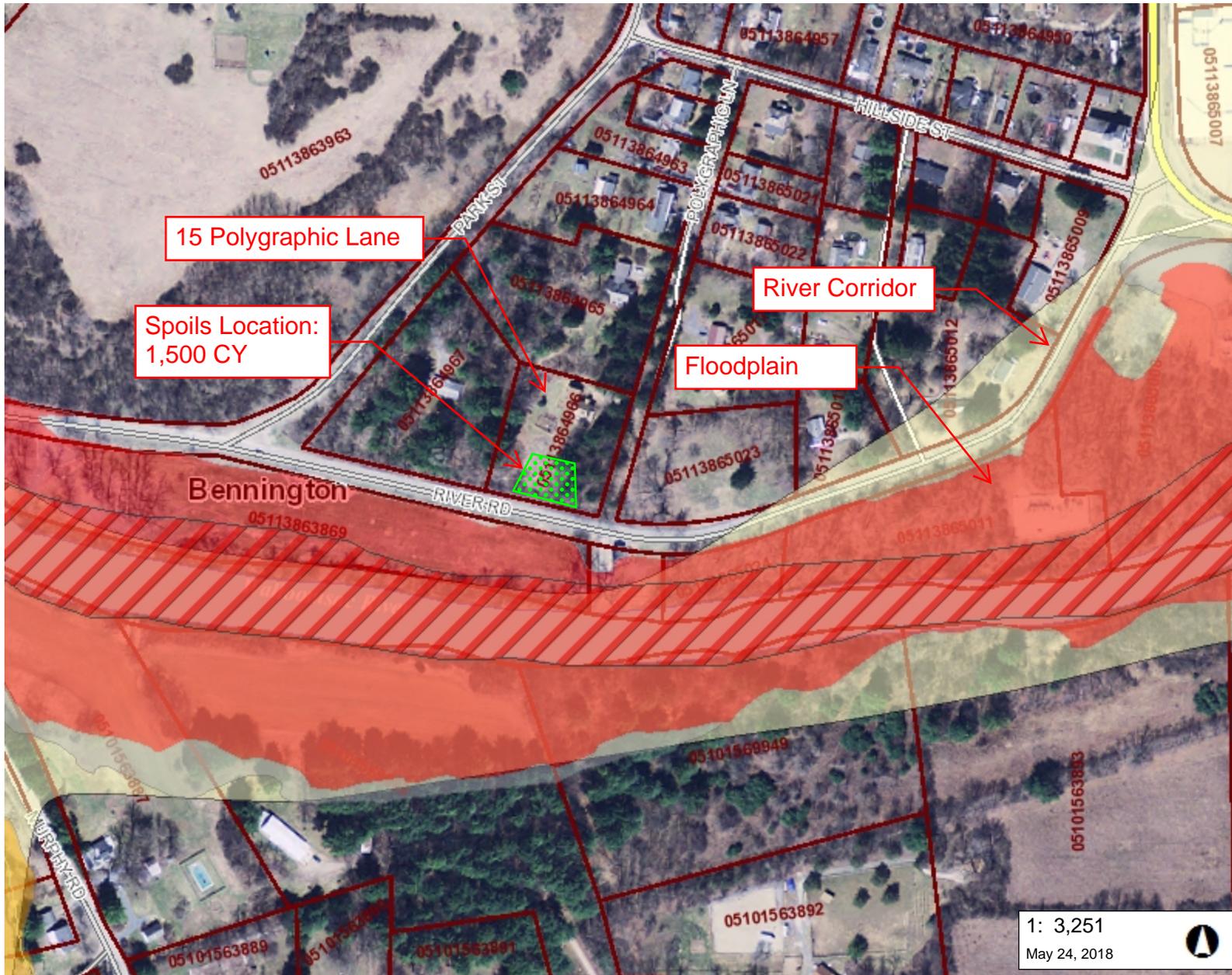
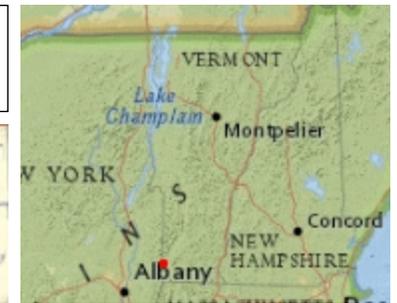
TOWN OF BENNINGTON
 MUNICIPAL WATER SYSTEM
 REMEDIAL EXPANSION
 BENNINGTON, VERMONT

DRAWINGS THIS SHEET
 POLYGRAPHIC LANE
 SPOILS SITE

NUMBER	DATE
1001-19.3	5/23/2018
DRAWN	CHECKED
MSK	JMD

SHEET NUMBER
EXH

DRAFT



LEGEND

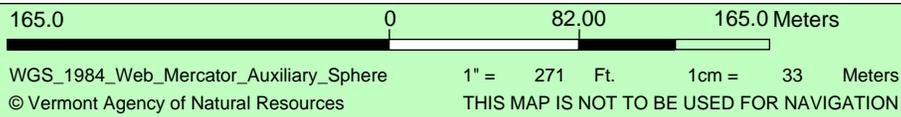
- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Wetlands Advisory Layer
- DFIRM Floodways
- Flood Hazard Areas (Only FEM)
 - AE (1-percent annual chance flood)
 - A (1-percent annual chance floodpl.)
 - AO (1-percent annual chance zone feet)
 - 0.2-percent annual chance flood ha
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (Standardized)
 - Roads
 - Interstate
 - Principal Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local
 - Not part of function Classification S
- Waterbody
- Stream
- Parcels (Non-Standardized)
- Town Boundary

1: 3,251
May 24, 2018



NOTES

Map created using ANR's Natural Resources Atlas



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ADDENDUM E

ASA WAY SPOILS SITE

3.5 ASA WAY SPOILS SITE

This potential permanent disposal area is located within the central portion of CAA I OU A, north of the Walloomsac River.

Vegetation:

The majority of this spoils site is primarily vegetated with field and meadow grasses and shrub-scrub vegetation.

Wetlands and Aquatic Features:

A qualified environmental scientist assessed the site for potential state and federal wetlands utilizing the methodology set forth in the U.S. Army Corps Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended, and in supplemental guidance documents. No hydrophytic vegetation, hydric soils, nor hydrological features were found at the proposed site. No Class I, II, or III state and federal jurisdictional wetlands or streams were found at this proposed spoils site. Drainage from this site is from a easterly to westerly direction.

Topography and Soils:

Topography slopes to the southeast with a slope mapped between 8% and 15%. NRCS has mapped this site to include the Groton gravelly fine sandy loam, 8 to 15 percent slopes (100.0% of the proposed site). Erosion potential is slight for 100% of this proposed site.

Best Management Practices:

Applicable standards and conditions in the Vermont Construction General Permit 3-9020 will be met and best management practices will be utilized for this project. A construction entrance will be constructed and silt fence will be installed on the western downslope side of the proposed spoils area.

VT ANR Criteria:

1. This disposal option is located within the central area of Corrective Action Area I as identified in the Consent Order (met criteria);
2. This is private property;
3. This area has a gentle slope with limited erosion potential. NRCS maps 100% of this proposed site as slightly erosive (met criteria);
4. This area has no wetlands, streams, rivers and is not within a FEMA Flood Hazard Area (met criteria);
5. This area is outside of public water supply source protection areas (met criteria);
6. All homes in this area will be supplied by the installation of new water so no wells will be affected (met criteria).

Criteria met: 5/6

Spoils accommodated by this site: 500 CY



From west side of site, looking north



From Asa Way, looking southwest



From Asa Way, looking southwest

Fill Volume: +/- 500 CY

ALL DRAWING DIMENSIONS UNLESS OTHERWISE SPECIFIED SHALL BE IN FEET AND DECIMALS THEREOF. DATE: 5/23/2018



ASA WAY SPOILS SITE
 0 30 60 Feet

Scale: 1:30



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 MSK ENGINEERING AND DESIGN, INC.
 P.O. BOX 139, 150 DEPOT STREET
 BENNINGTON, VERMONT 05201
 PH: (802) 447-7402 FAX: (802) 445-1291

REVISIONS	
NO.	DESCRIPTION

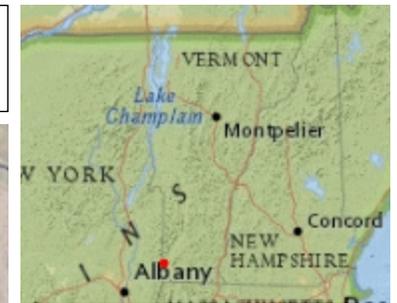
TOWN OF BENNINGTON
 MUNICIPAL WATER SYSTEM
 REMEDIAL EXPANSION
 BENNINGTON, VERMONT

DRAWINGS THIS SHEET
 ASA WAY
 SPOILS SITE

NUMBER	DATE
1001-19.3	5/23/2018
DRAWN	CHECKED
MSK	JMD

SHEET NUMBER
EXH

DRAFT



LEGEND

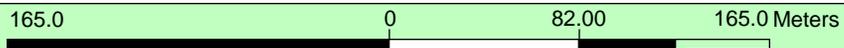
- Wetland - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
 - Buffer
- Wetlands Advisory Layer
- River Corridors (Jan 2, 2015)
- Small Streams - 50ft Setback
- Parcels (Standardized)
- Roads
 - Interstate
 - Principal Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local
 - Not part of function Classification S
- Waterbody
- Stream
- Parcels (Non-Standardized)
- Town Boundary

1: 3,251
May 23, 2018



NOTES

Map created using ANR's Natural Resources Atlas



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