

Quinebaug Valley Rail Trail Environmental Narrative

A. PROJECT DESCRIPTION

Beneficiaries

The Town of Southbridge is proposing to develop its portion of the Quinebaug Valley Rail Trail (QVRT) from Sturbridge in the northwest of Southbridge to Dudley in the southeast. The QVRT will bring many health and economic benefits to Southbridge, as well as provide a key link to a larger regional bike trail network for Southern Worcester County, even connecting into Connecticut. The proposed alignment of the rail trail will also provide connections to key destinations in Southbridge, such as the:

- Central Business District
- Route 131 commercial corridor
- Globe Village neighborhood (currently being revitalized)
- American Optical Complex (currently being revitalized)
- Optical Heritage Museum / 12 Crane Street
- Town Common
- West Street School and Recreation Area
- Westville Dam Recreation Area
- Existing residential neighborhoods and multi-family complexes

In terms of private investment, Twelve Crane Street Corp, the owner and operator of 12 Crane Street, has provided a letter stating that they are investing approximately \$3 million into the property because of the proposed development of the QVRT. Additional private investment is anticipated once funding is secured for the full design and construction of the proposed project.

Proposed Construction

The work being proposed is to design and construct a new multi-use path (bicycle and pedestrian) through Southbridge. The *Quinebaug Valley Rail Trail Feasibility Study* was completed by BSC Group, Inc., in February 2022, and the resulting proposed alignment of the Southbridge portion of the QVRT will be approximately 5 miles in length, including 21,000 linear feet along an abandoned rail line, and 5,250 linear feet on-road as a separated path with short sections of “share the road” bicycle accommodations. Existing timber bridges along abandoned rail bed will remain in place. This approach for the Southbridge portion of the QVRT development is consistent with many other trails throughout the Commonwealth of Massachusetts. Please see the USGS Locus Map and Quinebaug Valley Rail Trail Feasibility Study attachments for additional detail.

The scope of work for the proposed EDA investment includes final design and the preparation of and bid-ready documents for the construction of the trail. This will require topographic survey, wetland delineation, environmental permitting, preparation of preliminary/final designs, approvals from various local, state and/or federal agencies, bidding and construction including oversight, and record drawings.

Preliminary schematics showing the general layout and location of the existing site conditions and of the proposed trail segments are included in Appendix B.

Need and Purpose

Trails are important community amenities that attract people and dollars and help to spur economic development. Trails provide communities with a valuable amenity that translates into increased housing values and supports neighborhood revitalization. Local businesses that are well-connected to trails attract bicycle tourists and more dollars. The proposed investment to design and construct the QVRT in Southbridge with connections to neighboring communities will allow the region to bring in more outdoor recreation tourism and will help offset the decline in tourism experienced by local attractions such as Old Sturbridge Village. The need to further help travel, tourism, and outdoor recreation sectors in the region is demonstrated by the recent recipients of regional micro-enterprise assistance grants, which included a hotel in Sturbridge, a brewery, a restaurant, a business that provides event related services, and a tourism-related publishing business. Moreover, increasing access and visibility to the outdoors – one of the greatest assets in Central Massachusetts – will allow the region to promote what has proven to be a sustainable form of tourism.

Alternatives to the Proposed Project

Hamilton Street Alternative

Connecting the end of the abandoned railbed portion of the trail that terminates at the intersection of River Street and Cross Street, to the Westville Dam recreation area presented several challenges including bicycle/pedestrian safety, impact to traffic operations along town streets and navigating through the intersection of West/Main/High/Mill/Hamilton Street. One alternative considered included the installation of separated bicycle lanes along Hamilton Street from the intersection with either Oliver Street or Cross Street to the intersection with Main Street. Hamilton Street consists of a bi-directional road with curb/sidewalk and on-street parking along either side and a majority of the length. To implement separated bike lanes would require elimination of on-street parking along a minimum of one side of the street, geometry modifications and reconstruction of the road and major geometric/signal upgrades at the intersection with Main Street, at a substantial cost to the project. As a result, this alternative was rejected.

“No Project” Alternative

The QVRT connection through the entirety of Southbridge will enable the larger QVTR to become a true regional rail trail system through multiple communities. The Central Massachusetts Regional Planning Commission’s 2012 *Central Thirteen Prioritization Project* identifies the QVRT as a Priority Preservation/Development Area and Regionally Significant Transportation Investment (RSTI). As an RSTI, the project is critical in supporting increased development of identified Priority Development Areas while recognizing the need to protect Priority Preservation Areas. In addition, the project has been identified as a priority corridor for enhancing interconnectivity for facilities which address transportation needs across the larger geographic region. Without the QVRT connecting link through the entirety of Southbridge described as the Preferred Alternative, the larger regional system could not be constructed and would consist of an abandoned/unutilized railroad bed and town streets without a clearly defined safe route of access, resulting in a denigrated riding/walking experience for trail users.

Preferred Alternative

The recommended trail alignment was selected as the preferred alternative because it provides a key link to a larger regional bike trail network for Southern Worcester County that will help realize the social and economic benefits envisioned for the QVRT. The approach of using the abandoned railroad bed with portions of on-road as a separated path is consistent with many other trails throughout the Commonwealth of Massachusetts.

B. HISTORIC/ARCHEOLOGICAL RESOURCES

The project area primarily consists of an urban mill-town environment and follows the Quinebaug River, with the majority of the proposed trail utilizing the existing roads and an abandoned railbed, currently owned by the Massachusetts Department of Transportation (MassDOT). As a result, historic sites are present in the vicinity of the project.

Based on a review of the Massachusetts Cultural Resource Information System (MACRIS), the Massachusetts Historical Commission's online database of historic properties and areas in the Commonwealth, the proposed trail traverses six (6) historic districts listed in the National Register of Historic Places:

1. Centre Village Historic District
2. Windsor Court Historic District
3. Maple Street Historic District
4. Twinehurst American Optical Company Neighborhood
5. Hamilton Woolen Company Historic District
6. Central Mills Historic District

A map showing the Area of Potential Effect (APE) for the proposed project as well as historic properties and cultural resources listed in MACRIS is included in Appendix C.

Due to the impacted area being limited to existing roads and an abandoned railbed, it is anticipated that no historical properties/cultural resources will be adversely affected. In accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), consultation with the Massachusetts State Historic Preservation Office will be performed during the permitting process. In addition, the following Tribal Historic Preservation Officers (THPO) and Tribal Leaders may be consulted:

- Stockbridge-Munsee Community of Mohican Indians (THPO)
86 Spring St, Williamstown, MA 12180
(413) 884-6029
- Wampanoag Tribe of Gay Head-Aquinnah (THPO)
20 Black Brook Road, Aquinnah, MA 02535
(508) 645-9265 x175
- Nipmuc Nation Tribal Council Inc.
25 Main Street
South Grafton, MA 01560
(774) 317-9138
- Mohegan Community & Government Center
13 Crow Hill Road
Uncasville, CT 06382
(800) 664-3426

C. AFFECTED ENVIRONMENT

Affected Area

A good portion of the project area is in an urban mill-town environment and follows the Quinebaug River from Southbridge's older Globe Village manufacturing area south to the town line at Dudley. With the majority of the proposed trail utilizing the existing roads and railbed, topography is fairly flat already. However, when the rail bed was originally developed, it required some filling or cutting into existing grades resulting in some areas of grade change to get up to or down to the rail bed from abutting roadways and property. The *Quinebaug Valley Rail Trail Feasibility Study* addresses these grade changes where access to the trail is proposed.

The Quinebaug River is a natural resource that historically generated the development of many businesses and mills in the town. Sawmills, gristmills, and textile mills in the 18th century led to the Town becoming a known hub for the manufacture of optical products. This boom in manufacturing started to gradually decline after the second world war, with the largest plant, American Optical, shutting down by 1984. This decline left the area with a large deficit in local jobs for residents and has contributed to a low median household income and a high percentage of residents living below the poverty line.

The Quinebaug River is an important natural feature of this project area and protecting its bank and associated wetlands and floodplains will be a primary concern in permitting the project. The river's bank and associated wetlands are very evident at the toe of slope of the existing railbed. Portions of the trail are located in areas shown as 100-year floodplain on FEMA FIRM maps, but closer analysis of the Base Flood Elevation and the railbed elevations indicates that trail improvement work will require minimal alteration of the floodplain and will therefore have minimal direct impacts and will not present an undue compensatory flood storage challenge.

Floodplain and wetland boundaries shown on the maps have been taken from the Town of Southbridge, MassGIS, and USGS using ArcView software. No wet-land flagging was done as part of this study. BSC has evaluated wetland boundaries from the Quinebaug Valley Rail Trail and Slope Stabilization plans from MassDOT, which showed flagging for wetlands along the railroad bed and existing trail between the Ashland Ave (Route 131) crossing and Dudley town line. The railbed is above Base Flood Elevation per FIRM Map for this entire stretch of trail with the exception of the final 150 feet (approximately). Work on this section of trail should not result in changes to the flood storage capacity of the floodplain associated with the Quinebaug River in this southeastern section of the project. The following site analysis describes the affected area of the proposed project.

Please see Appendix G: Quinebaug Valley Rail Trail Feasibility Study for site photos.

Existing Railbed Condition

The existing abandoned railbed begins along the north side of River Street at the intersection with Cross Street and continues southerly for approximately 177 feet to the intersection with Crane Street. Along this section of abandoned railbed, approximately 130 feet of old track/ties remain in place. From this point the abandoned railbed continues along the north side of Crane Street and behind several

buildings including the Optical Heritage Museum, for approximately 2170 feet where it intersects Hook Street at-grade. The old track/ties have been removed along this section.

Then the abandoned railbed continues southerly for approximately 250 feet where it intersects Central Street at grade. The old track/ties remain in place along this section. After that the abandoned railbed continues southerly for approximately 190 feet where it intersects Foster Street at grade. The old track/ties remain in place along this section.

From this point the abandoned railbed continues southerly for approximately 2000 feet to the intersection with Main Street at the rotary which is below the grade of the railbed. At one point, there was a bridge carrying the railroad over Main Street but has since been removed. The old track/ties remain in place along this section. Then the abandoned railbed continues southerly for approximately 325 feet to the intersection with Morris Street which is below the grade of the railbed. There is an existing steel girder bridge carrying the railroad over Morris Street supported on mortared stone abutments located either side of Morris Street. The old track/ties remain in place along this section.

From this point, the abandoned railbed, with old track/ties that remain in place, continues southerly for approximately 2600 feet to the intersection with Old North Woodstock Road where it connects to a short section of an existing 12' wide paved path that carries the path through the intersection. This portion of the path was installed when the intersection was recently upgraded. This paved section of the path runs parallel to Route 169/131 for approximately 715 feet where it crosses the signalized intersection of Route 169/131 and continues as a paved path for another 285 feet where it reconnects to the existing abandoned railbed.

After that the abandoned railbed continues easterly for approximately 2000 feet to the intersection with Route 131 at grade. The old track/ties remain in place along this section. Along this stretch, there is an existing mortared stone arch culvert at Lebanon Brook, located 850 feet east of the Old Woodstock Road intersection. From this point, the abandoned railbed continues southeasterly for approximately 7500 feet to the Dudley Town Line. There are two existing steel girder bridges with wood decking within this section that were installed by the Town. The first is located approximately 1862 feet east of the intersection with Route 131 and was installed in the year 2011 and the second located approximately 4350 feet east of the intersection with Route 131 and was installed in the year 2012.

Existing Bridges

There are several existing bridges within the study corridor including vehicular (on-road), railroad (off-road) and pedestrian/bicycle (off-road):

- Mill Street – there are two roadway bridges in this section:
 - The bridge closer to Main Street carries two lanes of vehicular traffic with hot mix asphalt sidewalk along either side (continuous east side) over the McKinstry Brook. This bridge is currently under design for specific repairs.
 - The bridge closer to River Street carries two lanes of vehicular traffic with cement concrete sidewalk either side over the Quinebaug River. This bridge is currently under design for specific repairs.

- River Street:
 - The River Street bridge is located between Mill Street and River Avenue and carries two lanes of vehicular traffic with cement concrete sidewalk either side over the Quinebaug River.
- Morris Street:
 - Located above the roadway and along the existing abandoned railbed, this is a steel girder bridge with the track ties and rails still in place.
 - Abandoned Railbed, southern section:
 - Located approximately 1862 feet east of the intersection with Route 131 and constructed by the Town (DPW) in the year 2011, this single span girder pedestrian bridge structure supports a wood deck and railing (Refer to Appendices for plans).
 - Located approximately 4350 feet east of the intersection with Route 131 and constructed by the Town (DPW) in the year 2012, this second pedestrian bridge structure is also a single span girder with wood deck and railing (Refer to Appendices for plans).

On-Road Conditions

There are several streets within the study corridor. Following is a description of these streets starting from the north.

- Marjorie Lane:
 - Classified as local with a paved width of approximately 24 feet that supports bi-directional vehicular travel, this road provides access to several residents and serves as the primary entrance to the Westville Dam. There is an existing 700-foot-long walking trail that connects Marjorie Lane to the Westville Dam Trail and eventually the athletic fields behind the West Street Elementary School.
- West Street:
 - Classified as urban minor arterial or rural major collector with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides access to the West Street Elementary School and the athletic fields.
- Mill Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel along a majority of its length with sections restricted to one-way vehicular travel and a sidewalk along at least one side, this road provides a connection from the West Street/Main Street intersection to River Street.
- River Street:
 - Classified as local with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides a connection from Mill Street to Crane Street.
- Crane Street:
 - Classified as local with a paved width of approximately 35 feet that supports bi-directional vehicular travel and provides a connection to the abandoned railbed.

- Hook Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Central Street:
 - Classified as urban minor arterial or rural major collector with a paved width of approximately 35 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Foster Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Main Street:
 - Classified as rural minor arterial or urban principal arterial with a paved width of approximately 30 feet that supports bi-directional vehicular travel and a sidewalk either side. There once was a railroad bridge over Main Street at this location but it was removed decades ago.
- Morris Street:
 - Classified as local with a paved width of approximately 20 feet with vertical stone abutment walls either side that support an existing steel girder bridge and the abandoned railbed over the roadway. This road supports bi-directional vehicular travel and has a height restriction.
- East Main Street (Route 169/131):
 - Classified as rural minor arterial or urban principal arterial with a paved width that varies from 32-35 feet that supports bi-directional vehicular travel with a sidewalk along one side. The intersection of Route 169 and 131 is controlled by fully actuated traffic signals.
- North Woodstock Road (Route 169):
 - Classified as urban minor arterial or rural major collector with a paved width of 33 feet with a sidewalk along one side that supports bi-directional vehicular travel.

Coastal Zones

The project is not located within a designated coastal zone subject to the Coastal Zone Management Act.

Wetlands and Floodplains

The project area is dominated by the Quinebaug River and its floodplain. The northwestern-most segment utilizes existing ADA Riverwalk trails along the bank behind the West Street School and connects to the US Army Corps of Engineers' Westville Dam. The existing trail is located within feet of the bank of the Quinebaug River and has a narrow, naturally vegetated buffer. The preferred route between the West Street School and Crane Street utilizes surface streets and avoids any wetlands in these sections. As the trail enters the railroad right of way (ROW) at Crane Street, it traverses Riverfront Area (200' from the mean annual high-water mark) associated with the Quinebaug, though the railbed is on a terrace 30 to 40' above the river. Moving east-southeast, the railroad ROW meanders away from the river through densely-developed residential areas of Southbridge, crossing Cohasse Brook

which is culverted under a rotary on Route 131 at Route 169, and continues along the river course, within the 200' Riverfront Area, but separated from the river by East Main Street and existing residential and commercial development.

The preferred route crosses Lebanon Brook, a perennial stream with associated Riverfront Area with some associated Bordering Vegetated Wetland (BVW). The ROW occurs within Buffer Zone to BVW in this vicinity. After crossing Route 131 with a proposed at-grade pedestrian crossing, the last 1.5 miles of the historic railroad ROW will be entirely within Riverfront Area associated with the Quinebaug River and an unnamed perennial stream near the southeast end of the project. Along this stretch of the project, floodplain wetlands including BVW and associated Buffer Zones encompass the ROW. BVW wetlands include deep marsh, wooded swamps, and scrub-shrub swamps in this section of the project. A Potential Vernal Pool (PVP 23213) occurs on the south side of the ROW within BVW just west of the Accurate Metal Sales facility. The 100-year floodplain associated with these streams are also regulated as Bordering Land Subject to Flooding under the Massachusetts Wetlands Protection Act and may be subject to review under the Town of Southbridge Zoning Bylaw, Section 9.1 Floodplain Zoning Overlay District.

Floodplain and wetland boundaries shown on the maps are based on MassGIS data including MassDEP Wetlands and FEMA 100-year floodplain data layers. Wetlands were not delineated or flagged as part of this study. Wetland boundaries delineated for the Quinebaug Valley Rail Trail and Slope Stabilization plans from MassDOT are included, which show flagging for wetlands along the railroad bed and existing trail. The proposed trail may utilize land within the floodplain area but will not require fill. With the trail mainly being located on existing roadways and the railroad bed, there should be little to minimum impact on surrounding wetland and floodplain areas.

Climate Change

The shared-use path will pass through downtown Southbridge and parallel to existing commercial corridors, thereby providing a means for residents and visitors to access local services, jobs, and commerce without the need for a car, thus reducing greenhouse gas emissions. The proposed trail alignment along an abandoned railbed and existing roadways will also avoid impacts to undeveloped or environmentally sensitive lands and waters (e.g., greenfields and wetlands).

Vegetation and Wildlife Resources

The QVRT passes through mixed land use areas. The preferred route to the northwest is a predominantly urbanized area with typical open canopy and early successional and young forest vegetation. Moving to the south and east, a more naturalized vegetation characterizes the ROW from the crossing at Ashland Avenue and continuing along the river to the Dudley town line. Forest vegetation includes birch, maple and oak over-story with occasional mature White Pine.

Invasive plant species are a significant component of the understory within the Riverfront Area, especially along the south-east portions of the project area. Multiflora Rose (*Rosa multiflora*), Burning Bush (*Euonymus sp.*), and bush honeysuckles (*Lonicera sp.*) are common.

Evidence of common wildlife was observed during a January site visit. Bird species typical of suburban Massachusetts forests were observed, as were track and sign of common mammals including moles,

small rodents, fox, and raccoon. Important wildlife habitat features were common throughout the project area, including standing dead trees (snags), trees with large cavities, areas with open water in the winter, potential turtle nesting areas, stream bed riffle zones, gravel stream bottom, and pools that may function as vernal pools throughout the floodplain forest adjacent to the Quinebaug River.

Endangered Species

The project area between the at-grade crossing of Ashland Avenue and the Dudley town line are located within Natural Heritage & Endangered Species Program (NHESP) Priority Habitat (PH 756) and Estimated Habitat (EH 604). A formal information request will be required to determine what species listed under the Massachusetts Endangered Species Act (MESA) are known to occur in this area.

It is probable that this project will occur within habitat for the Northern Long Eared Bat (NLEB) and another species of interest to the US Fish & Wildlife Service (USFWS), the Monarch Butterfly. The northern long-eared bat is currently listed as threatened under the federal Endangered Species Act and presumed to be present throughout most of Massachusetts. Projects with a federal nexus are required to consult with USFWS regarding potential impact to this species, using the tool available in USFWS' on-line IPaC system. Using this tool, most projects are determined to have no adverse effect on the northern long-eared bat. When the potential for adverse effects is identified, time-of-year restrictions on construction activities generally are sufficient to avoid these effects. A new rule pertaining to the status of the northern long eared bat will be published 2022 for public comment, and the final rule is anticipated to be adopted late in the year. The results of this process may change the current IPaC-based consultation process and accepted mitigation measures.

In 2020, the USFWS concluded that listing the monarch under the Endangered Species Act (ESA) is warranted but precluded by higher priority listing actions. Based on the USFWS' priorities and workload, the USFWS intends to propose listing the monarch in Fiscal Year 2024, if listing is still warranted at that time. In the meantime, the monarch is designated as a candidate under the ESA. Candidate species are not protected under the ESA, but the USFWS reviews their status annually, and could decide to initiate the listing process sooner than 2024.

Land Use

Land use along the rail trail corridor includes a mix of commercial, residential, and manufacturing. Since the old rail bed, which is now abandoned, once served older manufacturing and commercial areas, there are still pockets of land zoned and used for manufacturing and industrial uses. These areas are located primarily along the northern section of the rail bed, abutting the northern section of downtown. Typical uses include manufacturing, distribution, and several abandoned former manufacturing buildings.

The central section of the rail trail will run through downtown Southbridge. The primary abutting uses include retail, commercial and multi-family housing. Many of the business and parcels owners are struggling economically in this area. The rail trail is expected to draw residents and visitors into this area to help boost the local economy. Visitors and tourists using the rail trail will see these abutting retail stores, restaurants, and cafes, and may be attracted to stopping to use them. In addition, there are a number of residential neighborhoods, multi-family housing structures, and a housing authority property abutting or within close proximity to the rail trail. Many of these residential units are occupied

by lower income citizens, and the rail trail will provide a much-needed passive recreational amenity as well as an alternative mode of transportation for these residents.

South of the downtown area, the rail trail passes the old American Optical manufacturing campus. Manufacturing at this facility ceased in the 1980's. Since then, portions of the campus have been repurposed, and include a hotel, conference center, and training facility. Recent investments include renovating some of the older buildings for housing. The rail trail will be a valuable amenity for this campus and is expected to stimulate even more investment in the transformation of this older manufacturing campus to meet current market interests and investment.

South of the American Optical Campus is the Route 131 commercial corridor. The rail trail parallels this corridor, and uses along this corridor include a grocery store, support retail, restaurants, and services. The rail trail will provide a means to access these commercial businesses without the need of using a vehicle. Improving access to these commercial businesses will help their economic viability. In addition, visitors and tourists using the rail trail will see these abutting retail stores, restaurants, and cafes, and may be attracted to stop and visit them.

The very northern and southern portions of the rail trail go through wooded areas, recreational areas, and land adjacent to the Quinebaug River. As such, these portions of the rail trail are very scenic, and connect to other trails and open space amenities. In addition, these areas offer an opportunity for interpretive signage to explain the value of the abutting ecology.

There are historic elements along the entire length of the rail bed. Where possible, historic elements will be preserved and interpreted to add interest, education and another attraction to use the new trail.

Zoning

As with the land use, the zoning along the rail trail corridor includes a mix of commercial, residential, and manufacturing districts.

Starting in the northwestern section of the proposed trail near Sturbridge, the project area is comprised mostly of Residential and some manufacturing to the north.

Moving easterly into the downtown area, the zoning becomes more of a mixture with Residential 2 and 3, General Business, Retail, Office Research, and Manufacturing all being present.

Traveling further into downtown Southbridge, the predominant zoning is Central Core along the which supports business in the downtown area. There are small sections of Manufacturing, Residential, and Office Research along with General Business.

Continuing further to the southeast, there is a mixture of General Business, Residential, and Retail zoning.

Lastly, the southernmost section of the Study Area is dominated by the Manufacturing zoning district, with only a few Residential and Office Research areas zoned. Not much development has occurred in the southernmost section.

Solid Waste Management

Quantities of solid waste are unknown since the nature of the private investment that will be generated by the proposed project is unknown at this time. During construction, it is anticipated some of the existing materials such as the remaining rails and stone “bed” or ballast will be recycled. It is also anticipated that no unusual or hazardous solid waste will be generated by the rail trail and that only typical waste will be generated by users (pedestrians and bicyclists) of the rail trail.

Hazardous or Toxic Substances

A Phase I Environmental Site Assessment was completed for the abandoned railroad bed portion of the site by Fuss & O’Neill in February 2022 – please see Appendix D.

The preliminary Phase I analysis of soil conditions along the old rail corridor shows the potential of typical contamination which can be successfully addressed using Massachusetts Department of Environmental Protection (DEP) Best Management Practices for the remediation or mitigation of any identified contaminants along the rail corridor.

Water Resources

No groundwater will be utilized at this site and no discharges to groundwater are anticipated. A National Pollution Discharge Elimination System (NPDES) permit will be required for any discharges to surface waters.

Within the project area, Lebanon Brook (Segment ID: MA41-11) is listed as a Category 2 water on the U.S. Environmental Protection Agency’s (EPA) Section 303(d) list of impaired waters. Cohasse Brook (Segment ID: MA41-12) is listed as a Category 5 waterbody with the following impairments: benthic macroinvertebrates, Escherichia Coli (E. Coli), and sedimentation/siltation. The Quinebaug River is also listed as a Category 5 waterbody (Segment ID: MA41-02) with the following impairments: debris, trash, algae, and turbidity.

Water Supply and Distribution System

The proposed rail trail will not utilize local domestic or industrial/commercial water resources.

Wastewater Collection and Treatment Facilities

The proposed project is not anticipated to generate wastewater and other discharges.

Environmental Justice (Executive Order 12898)

The project does not have a disproportionately adverse human health or environmental impacts relative minority or low-income populations. In Massachusetts, a neighborhood is defined as an Environmental Justice (EJ) population if any of the following are true:

1. The annual median household income is not more than 65 percent of the statewide annual median household income
2. Minorities comprise 40 percent or more of the population

3. 25 percent or more of households lack English language proficiency
4. Minorities comprise 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income

Based on the MA Executive Office of Energy and Environmental Affairs (EEA) Environmental Justice Mapper, which uses population data from the 2020 Census, the project area encompasses Census Blocks classified as EJ populations based on the income criterion (#1 above), minority population criterion (#2 above) and minority and income criteria (#4 above). The EEA Languages Spoken Mapper indicates that after English, the most prevalent language spoken in Southbridge and the project area is Spanish.

The project is a transportation enhancement project and will improve pedestrian and bicycle transportation conditions in the project area for all populations. Specifically, this project will improve overall pedestrian safety, and will increase environmental equity of access to public and private resources such as the Southbridge Town Common, the West Street School and Recreation Area, the Westville Dam Recreation Area, the central business district, and the Route 131 commercial corridor. In order to better involve the community in the project and ensure meaningful opportunities for participation, publicly distributed materials will be made available in the predominant languages during final design and permitting.

Transportation (Streets, Traffic and Parking)

There are several streets within the project area. Existing capacities of these streets will not be exceeded as a direct or indirect result of this project implementation, particularly in terms of car and truck traffic. Land use in the vicinity of the trail such as residential, school, and commercial uses, will not be adversely affected by the proposed project.

The following is a description of these streets starting from the north.

- Marjorie Lane:
 - Classified as local with a paved width of approximately 24 feet that supports bi-directional vehicular travel, this road provides access to several residents and serves as the primary entrance to the Westville Dam. There is an existing 700-foot-long walking trail that connects Marjorie Lane to the Westville Dam Trail and eventually the athletic fields behind the West Street Elementary School.
- West Street:
 - Classified as urban minor arterial or rural major collector with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides access to the West Street Elementary School and the athletic fields.
- Mill Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel along a majority of its length with sections restricted to one-way vehicular

travel and a sidewalk along at least one side, this road provides a connection from the West Street/Main Street intersection to River Street.

- River Street:
 - Classified as local with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides a connection from Mill Street to Crane Street.
- Crane Street:
 - Classified as local with a paved width of approximately 35 feet that supports bi-directional vehicular travel and provides a connection to the abandoned railbed.
- Hook Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Central Street:
 - Classified as urban minor arterial or rural major collector with a paved width of approximately 35 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Foster Street:
 - Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Main Street:
 - Classified as rural minor arterial or urban principal arterial with a paved width of approximately 30 feet that supports bi-directional vehicular travel and a sidewalk either side. There once was a railroad bridge over Main Street at this location but it was removed decades ago.
- Morris Street:
 - Classified as local with a paved width of approximately 20 feet with vertical stone abutment walls either side that support an existing steel girder bridge and the abandoned railbed over the roadway. This road supports bi-directional vehicular travel and has a height restriction.
- East Main Street (Route 169/131):
 - Classified as rural minor arterial or urban principal arterial with a paved width that varies from 32-35 feet that supports bi-directional vehicular travel with a sidewalk along one side. The intersection of Route 169 and 131 is controlled by fully actuated traffic signals.
- North Woodstock Road (Route 169):
 - Classified as urban minor arterial or rural major collector with a paved width of 33 feet with a sidewalk along one side that supports bi-directional vehicular travel.

Air Quality

As a shared-use path (bicycle and pedestrian) construction project, greenhouse gas and other air emissions will be limited to the construction period of the project and are anticipated to be minor. Construction-related emissions will be reduced using ultralow sulfur diesel fuel (ULSD) and anti-idling requirements. The proposed project site is not classified as a “non-attainment” area for any criteria pollutants.

Once the trail is constructed, it will provide a non-motorized option to circulate through the community, as such, the use of the trail is expected reduce the reliance on cars and to improve air quality in the community.

Noise

A short-term increase in noise levels with the project area will be associated with the active construction period when heavy equipment is in use. Construction specifications for the contractor will include control of noise through the fitting of equipment with appropriate mufflers as part of the required pollution controls. There will be no long-term change to the level of local ambient noise the project area currently emits or receives.

Permits

The shared-use path alignment is close to the Quinebaug River and environmentally regulated areas, but a permitting analysis suggests that the expected permitting requirements are reasonable and attainable. The following permits are anticipated to be obtained as part of the final design phase of the proposed project:

RARE SPECIES

A Massachusetts Endangered Species Act (MESA) checklist will be filed with the Massachusetts Natural Heritage & Endangered Species Program (NHESP) to determine the state-listed wildlife species that the project may impact and to determine what will be required to avoid an illegal “Take” of a state-listed species. A US Fish & Wildlife Service Information for Planning and Consultation (IPAC) inquiry --will be filed concurrently to ensure compliance with the federal Endangered Species Act.

WETLAND PERMITTING

Permitting under the Massachusetts Wetlands Protection Act (M.G.L. c. 131 §40) and its implementing regulations (310 CMR 10.00 et seq.) will require wetland delineation along the project length where the proposed route is located within 200’ of perennial streams and 100’ of other jurisdictional wetlands. A Notice of Intent will be prepared and filed with the Southbridge Conservation Commission and MassDEP.

MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA) REVIEW

Review under the Massachusetts Environmental Policy Act (M.G.L. c. 30, §§ 61 through 62L) and its implementing regulations (301 CMR 11.00) will provide meaningful opportunities for public review of the potential environmental impacts of the proposed project and to assist in using (in addition to applying any other applicable statutory and regulatory standards and requirements) all feasible means to avoid Damage to the Environment or, to the extent Damage to the Environment cannot be avoided, to minimize and mitigate Damage to the Environment to the maximum extent practicable. The MEPA

review process includes consultation with the State Historic Preservation Office, the Massachusetts Historical Commission. An Environmental Notification Form will be prepared and filed with the MEPA Office.

National Pollutant Discharge Elimination System (NPDES) Construction General Permit

Permitting under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit Authorization, Clean Water Act, 33 U.S.C. §1251 et. seq. A General Permit for Stormwater Discharges and Construction Dewatering Activities/Stormwater Pollution Prevention Plan (SWPPP) is anticipated because the project involves greater than one acre of land disturbance. This permit will be required of the General Contractor hired to construct the rail trail.

Public Notification/Controversy

The public will be notified of the project through the MEPA notifications process including publication of a notice in the paper of record and notification of affected agencies. The Town of Southbridge has not received any information to indicate that there is controversy or objections to the proposal.

Cumulative Effects

No direct impacts are proposed on the ecosystems surrounding the project. The proposed trail may utilize land within the floodplain area but will not require fill. With the trail mainly being located on existing roadways and the railroad bed, there should be little to minimum impact on surrounding wetland and floodplain areas. Overall, the cumulative effects on the environment are minor. No other impacts or potential cumulative impacts have been identified.

D. MITIGATION

The following is a summary of mitigation measures proposed by the Project:

- Incorporation of construction period Best Management Practices (BMPs) to minimize the effects of construction on sensitive resource areas
- Construction of stormwater management elements
- Minimizing disturbance by using existing disturbed sites and marginal areas, roadways and sidewalks to the greatest extent practicable

The majority of the proposed multi-use pathway will be constructed in upland areas and will require minor earthwork and vegetation clearing. The applicant will minimize disturbance by using existing disturbed sites, roadways and sidewalks to the greatest extent practicable and provide a public benefit on land with little potential for other uses (abandoned railbed).

E. LIST OF ATTACHMENTS

The following is a list of attachments to the Environmental Narrative as described in the sections above.

- Appendix A: Applicant Certification Clause
- Appendix B: Rail Trail Segments
- Appendix C: Historic Resources Map
- Appendix D: Phase I Environmental Site Assessment
- Appendix E: USGS Locus Map
- Appendix F: Environmental Resources Map with FEMA Floodplain
- Appendix G: Quinebaug Valley Rail Trail Feasibility Study

Appendix A: Applicant Certification Clause

Appendix A: Applicant Certification Clause

The applicant represents and certifies that it has used due diligence to determine that the description of the project site described herein is accurate with respect to the presence or absence of contamination from toxic and hazardous substances. The term "site" includes the entire scope of the project, including future phases of the project and all areas where construction will occur.

1. Is the site currently, or has it in the past 50 years, been used for any of the following operations or activities:
 - a. Generation of hazardous substances or waste?
 Yes No
 - b. Treatment, storage (temporary or permanent), or disposal of solid or hazardous substances or waste?
 Yes No
 - c. Storage of petroleum products?
 Yes No
 - d. Used/waste oil storage or reclamation units?
 Yes No
 - e. Research or testing laboratory?
 Yes No
 - f. Ordinance research, testing, production, use, or storage?
 Yes No
 - g. Chemical manufacturing or storage?
 Yes No
 - h. Weapons or ammunition training, use, or testing?
 Yes No
 - i. Iron works/foundry?
 Yes No
 - j. Railroad yard?
 Yes No
 - k. Industrial or manufacturing operation?
 Yes No

If any of the above operations ever occurred at the site, and if appropriate cleanup or other mitigation actions were performed in accordance with the local, State, and federal laws, please attach documentation of these actions.

2. Do wells draw from an underlying aquifer to provide the local domestic water supply?
 Yes No

Appendix A: Applicant Certification Clause

3. Has a federal, State, or local regulatory authority ever conducted an environmental assessment, environmental impact statement, or a preliminary assessment/site inspection, or similar environmental surveyor inspection report at the site? If yes, please list here and attach copies of these reports or results.

Yes No

1) Phase I Environmental Site Assessment: Quinebaug Valley Rail Trail, prepared by Fuss & O'Neill.
Please see Appendix D: Phase I Environmental Site Assessment.

4. Have any environmental or OSHA citations or notices of violation been issued to a facility at the site? If yes, please attach copies.

Yes No

5. Have any unauthorized releases of hazardous substances occurred at any facility at the site which resulted in notification of the EPA's National Response Center?

Yes No

6. Is any material containing asbestos or lead paint located at the site? If yes, please attach information concerning State and federal regulatory compliance.

Yes No

7. Is there any equipment (electrical transformers, etc.) containing polychlorinated biphenyls (PCB) on the site? If yes, please attach a description of the equipment.

Yes No

8. Are there underground or above ground storage tanks on the site? If yes, please attach a detailed description, including the number of underground storage tanks on the site, whether the tanks have been inspected (or removed) and the results of such inspections.

Yes No

9. Has the site been tested for radon? If yes, please attach results.

Yes No

10. Have there been, or are there now any environmental investigations by federal, State or local government agencies that could affect the site in question? If yes, please attach available information.

Yes No


Appendix A: Applicant Certification Clause

The applicant acknowledges that this certification regarding hazardous substances and/or waste is a material representation of fact upon which EDA relies when making and executing an award. EDA reserves the right to terminate any award made in conjunction with the representations contained herein if, at any time during the useful life of the project, EDA becomes aware of the presence of hazardous materials or waste at the site, or that hazardous materials or waste have been inappropriately handled thereon.

Further, if it is determined at any time that the presence of hazardous materials or waste, or handling thereof, has been misrepresented, EDA may pursue other available legal remedies against the applicant.

Town of Southbridge
Applicant's Name

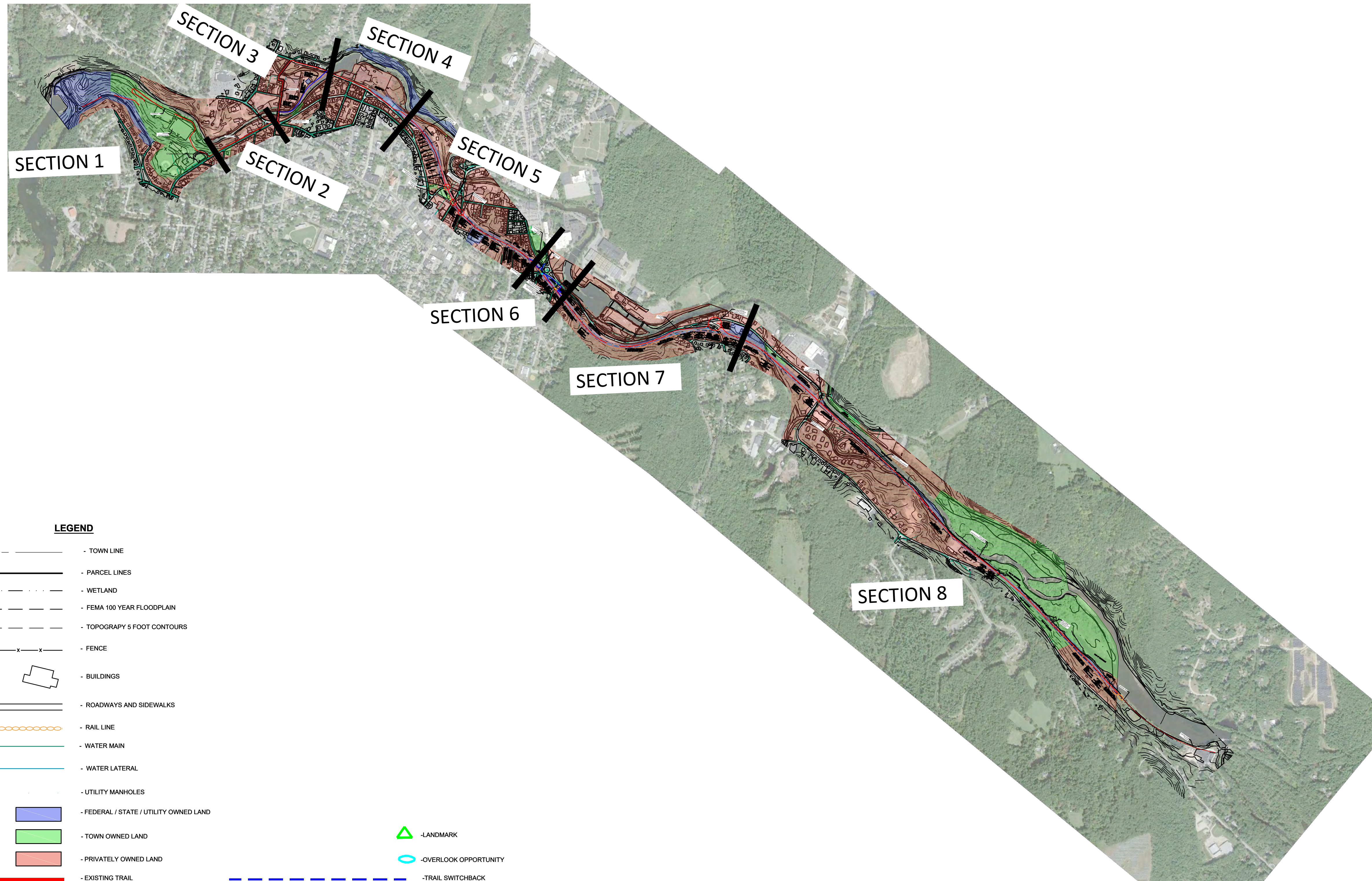
Michael McCall, Town Manager
Name and Title of Applicant's Authorized Representative


Signature of Applicant's Authorized Representative

2/9/2022
Date

Appendix B

Appendix B: Rail Trail Segments



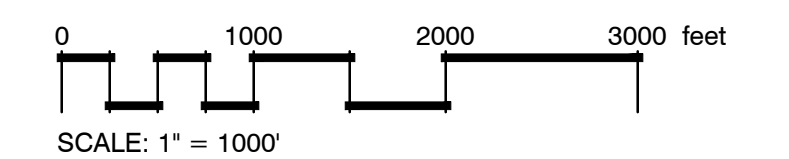
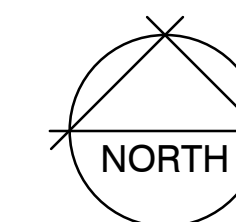
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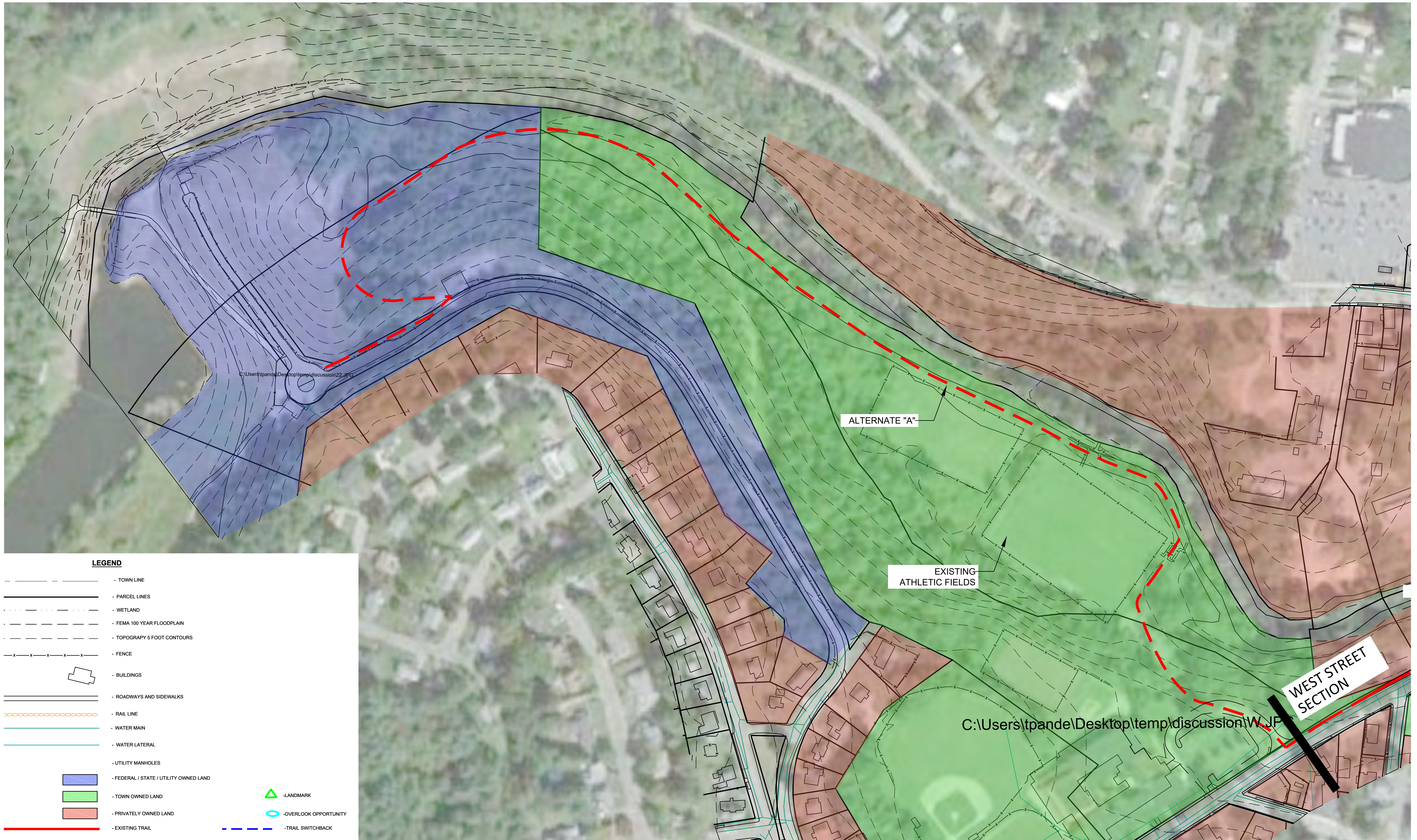
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- WETLAND
- FEMA 100 YEAR FLOODPLAIN
- TOPOGRAPHY 5 FOOT CONTOURS
- FENCE
- BUILDINGS
- ROADWAYS AND SIDEWALKS
- RAIL LINE
- WATER MAIN
- WATER LATERAL
- UTILITY MANHOLES
- FEDERAL / STATE / UTILITY OWNED LAND
- TOWN OWNED LAND
- PRIVATELY OWNED LAND
- EXISTING TRAIL
- FUTURE TRAIL ROUTE AND/OR ALTERNATIVE
- LANDMARK
- OVERLOOK OPPORTUNITY
- TRAIL SWITCHBACK
- BRIDGE

REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022

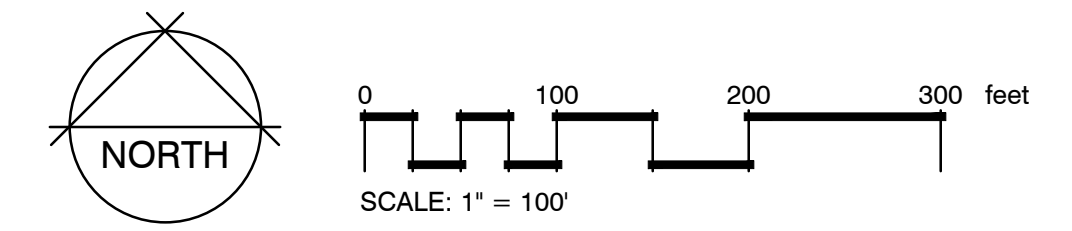




REPORT SECTIONS - Westville Dam to West Street Section

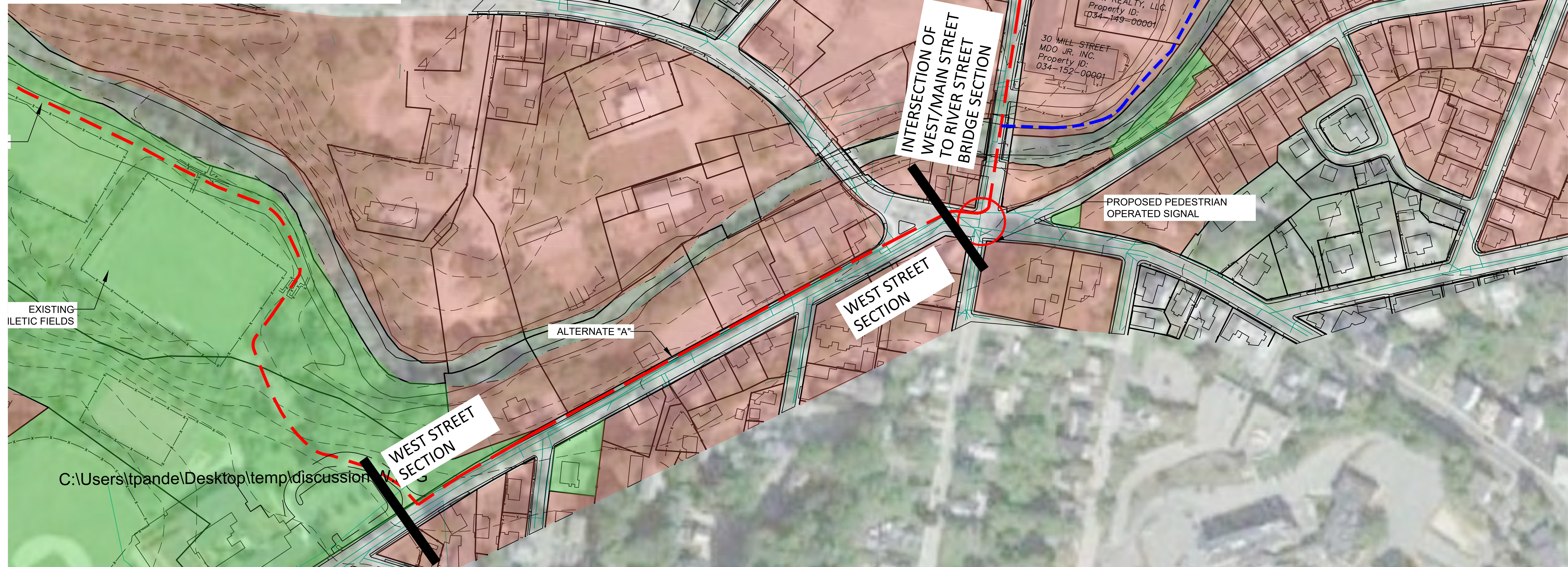
QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 28, 2022



LEGEND

- TOWN LINE
- PARCEL LINES
- WETLAND
- FEMA 100 YEAR FLOODPLAIN
- TOPOGRAPHY 5 FOOT CONTOURS
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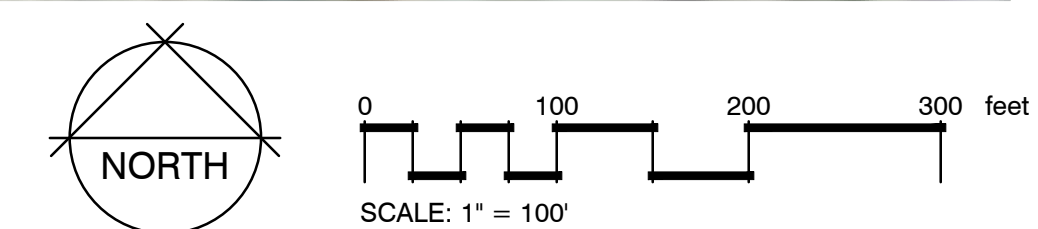


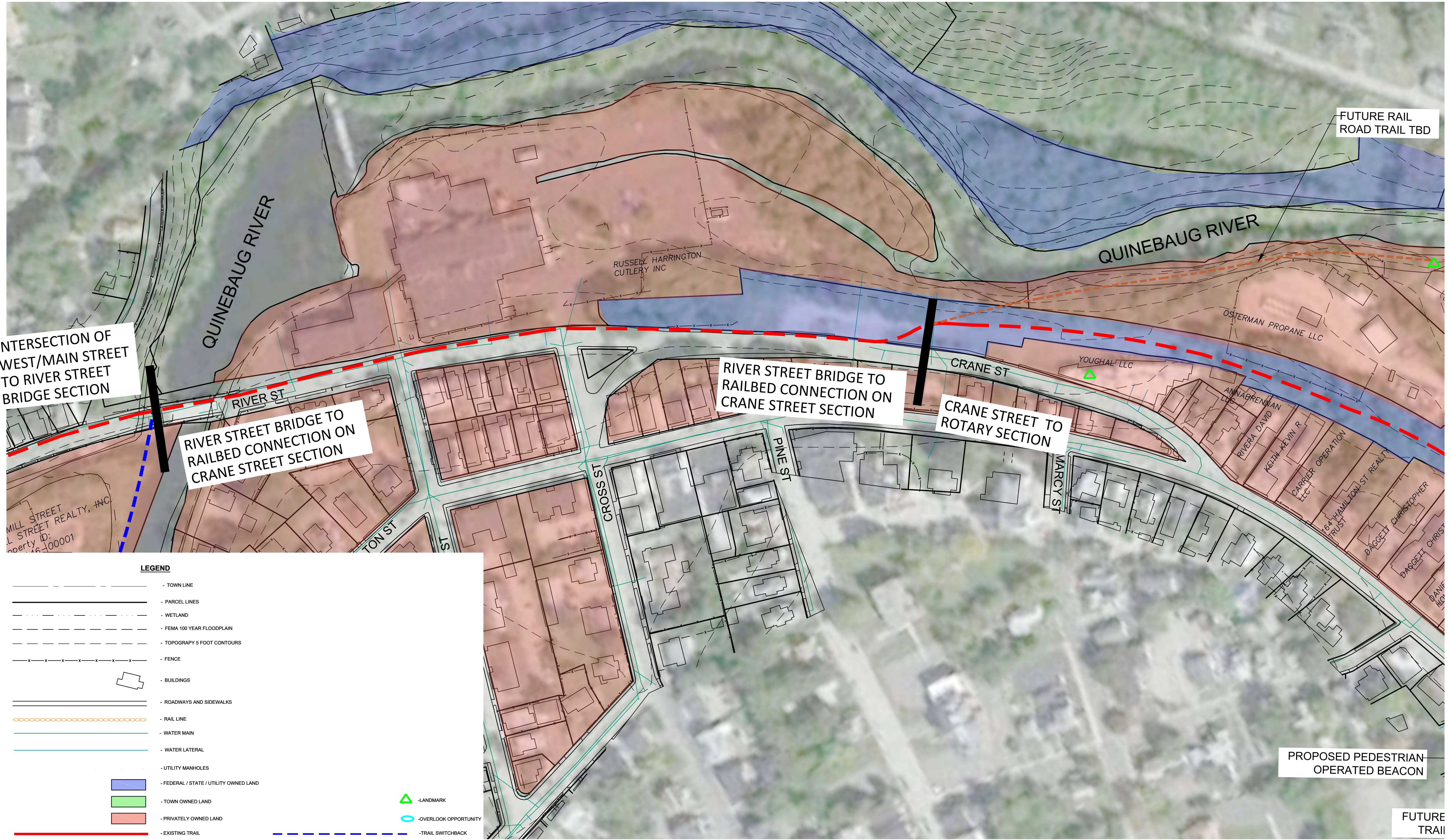
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REPORT SECTIONS - West Street Section | Intersection of West/Main Street to River Street Bridge Section

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022





INTERSECTION OF WEST/MAIN STREET TO RIVER STREET BRIDGE SECTION

RIVER STREET BRIDGE TO RAILBED CONNECTION ON CRANE STREET SECTION

RIVER STREET BRIDGE TO RAILBED CONNECTION ON CRANE STREET SECTION

CRANE STREET TO ROTARY SECTION

FUTURE RAIL ROAD TRAIL TBD

PROPOSED PEDESTRIAN OPERATED BEACON

FUTURE TRAIL

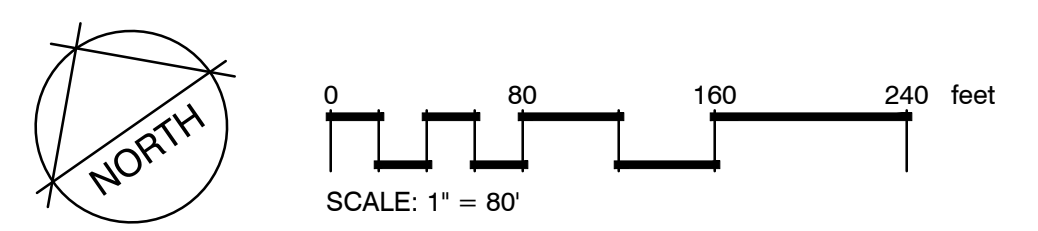
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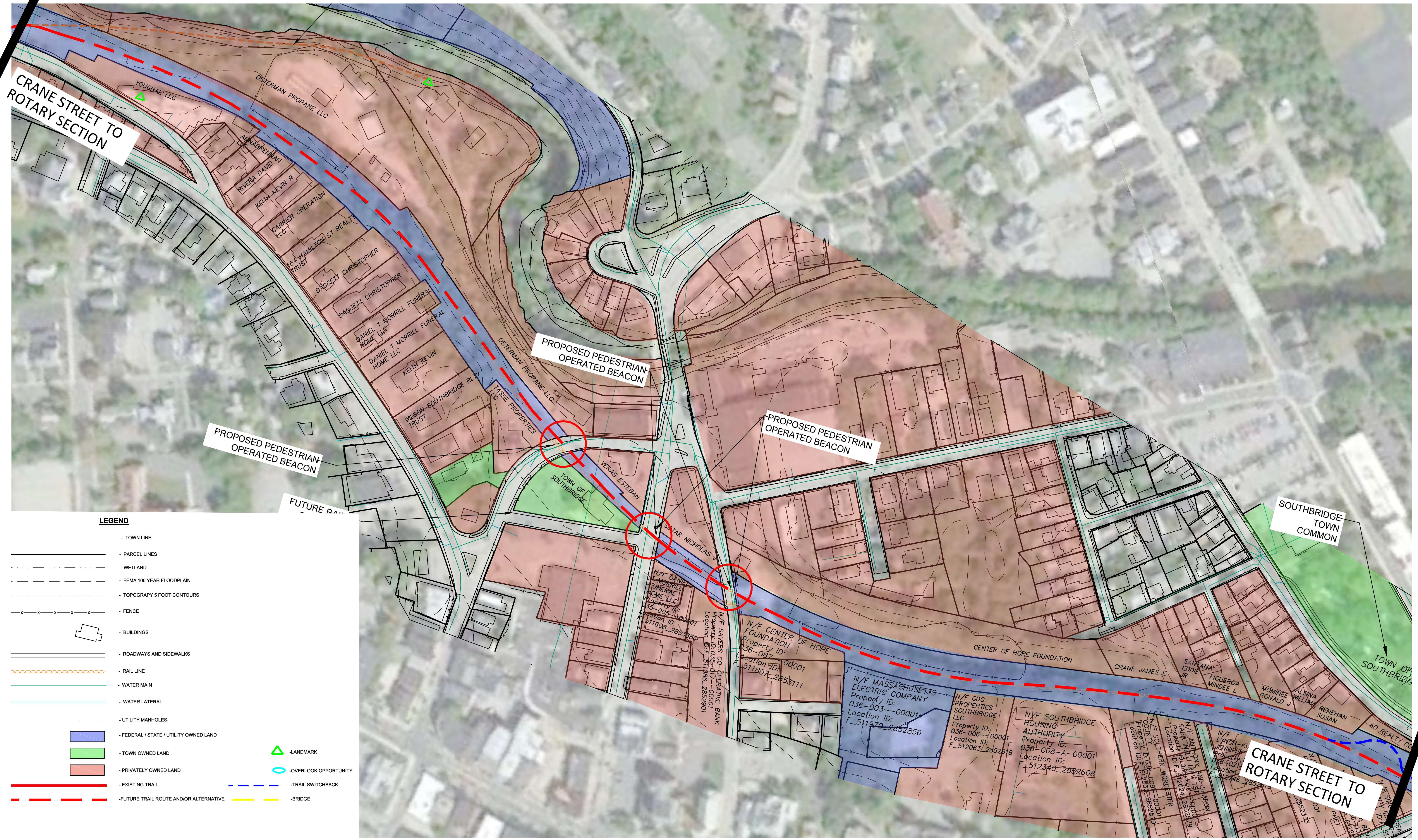
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- BRIDGE

REPORT SECTIONS - River Street Bridge to Railbed Connection on Crane Street Section

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022

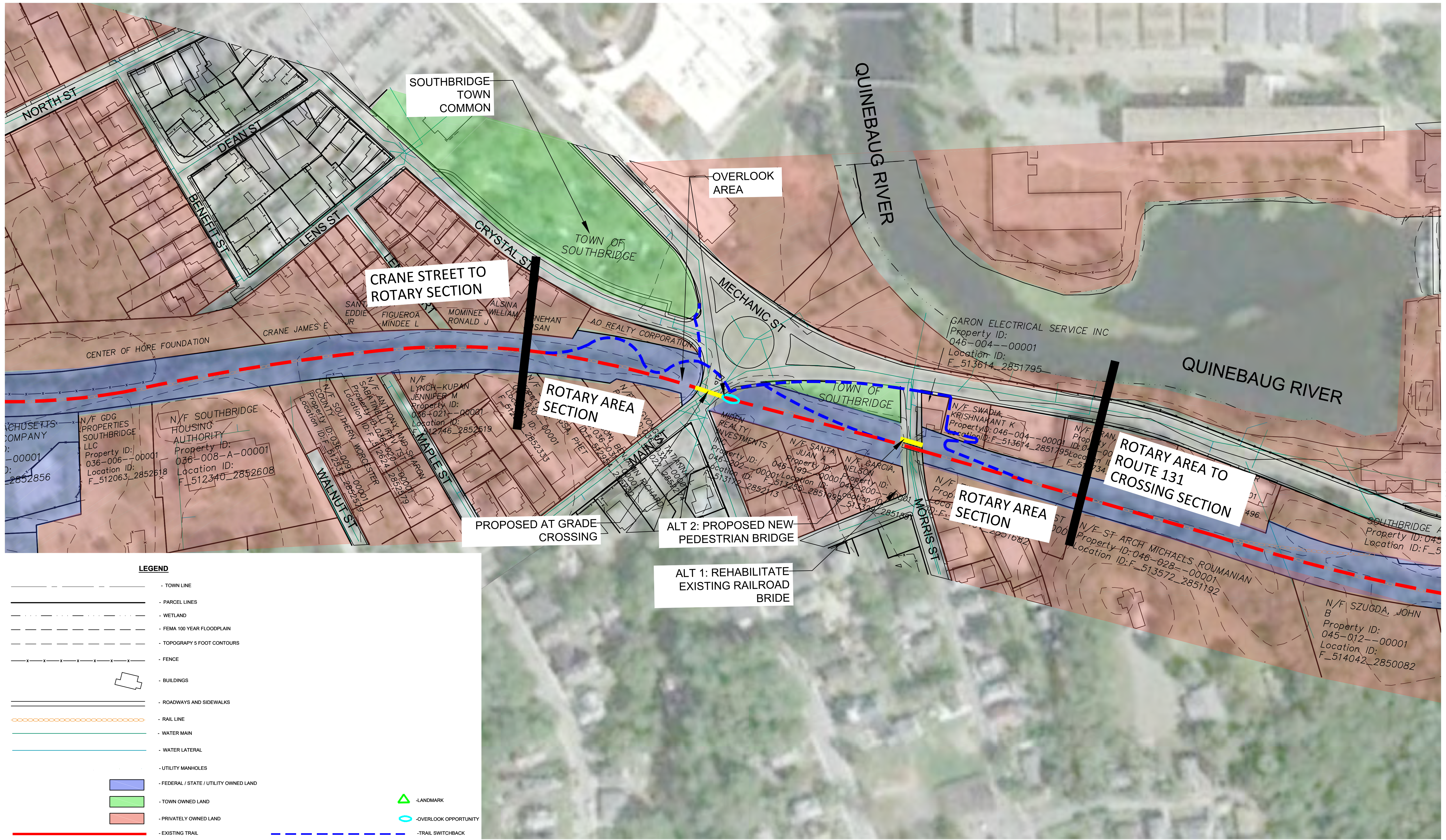




REPORT SECTIONS - Crane Street to Rotary Section

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022

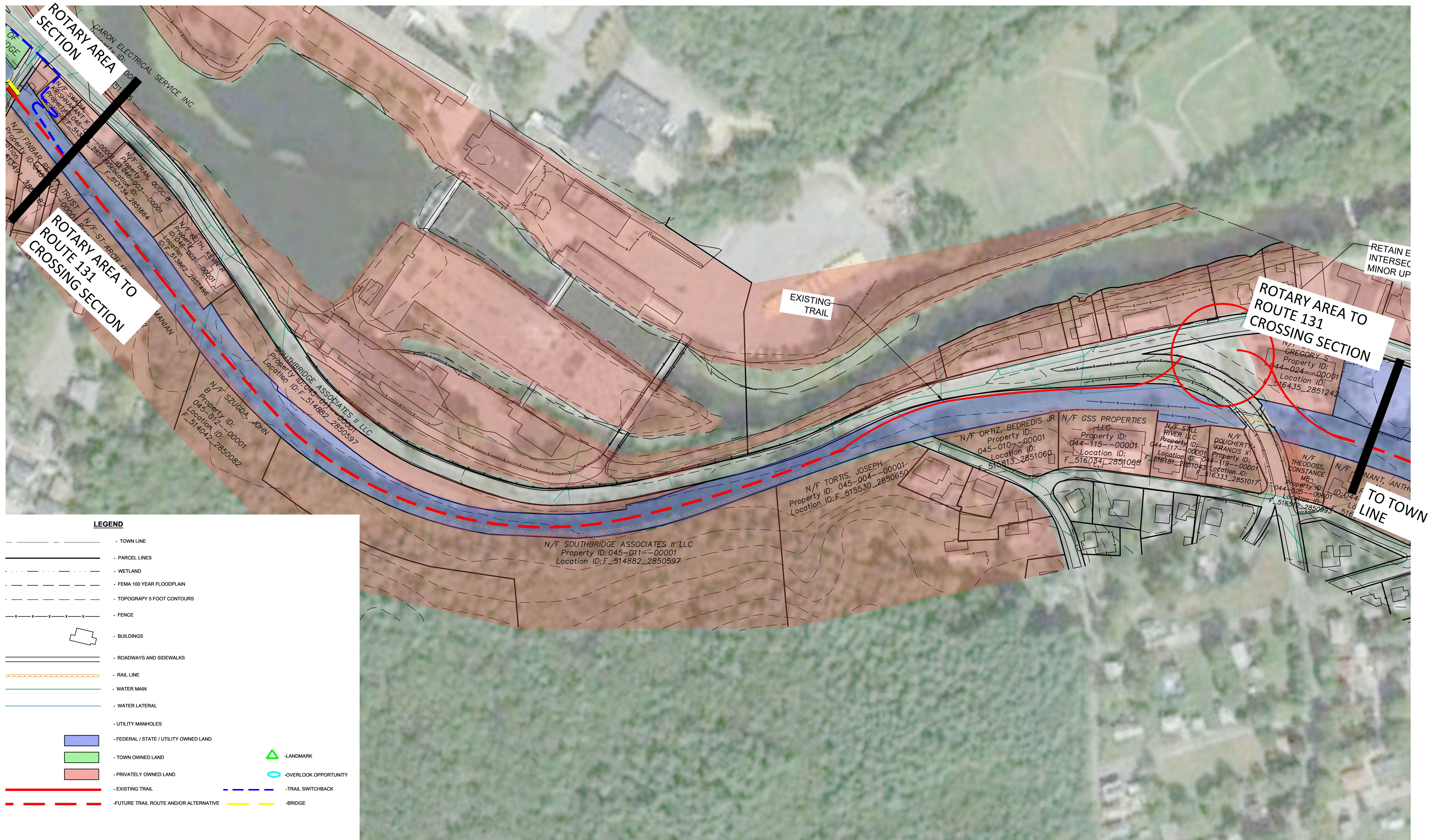


REPORT SECTIONS - Rotary Area Section

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 12, 2022

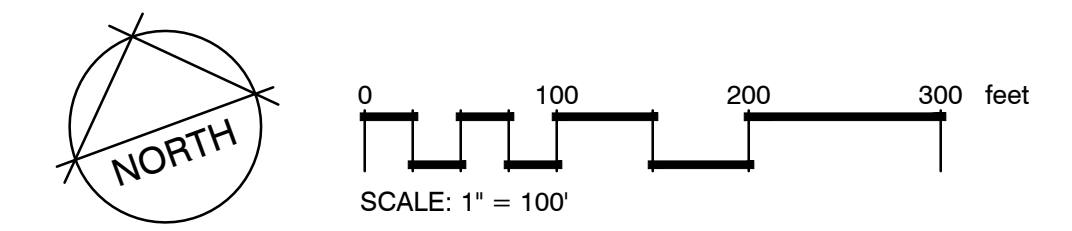
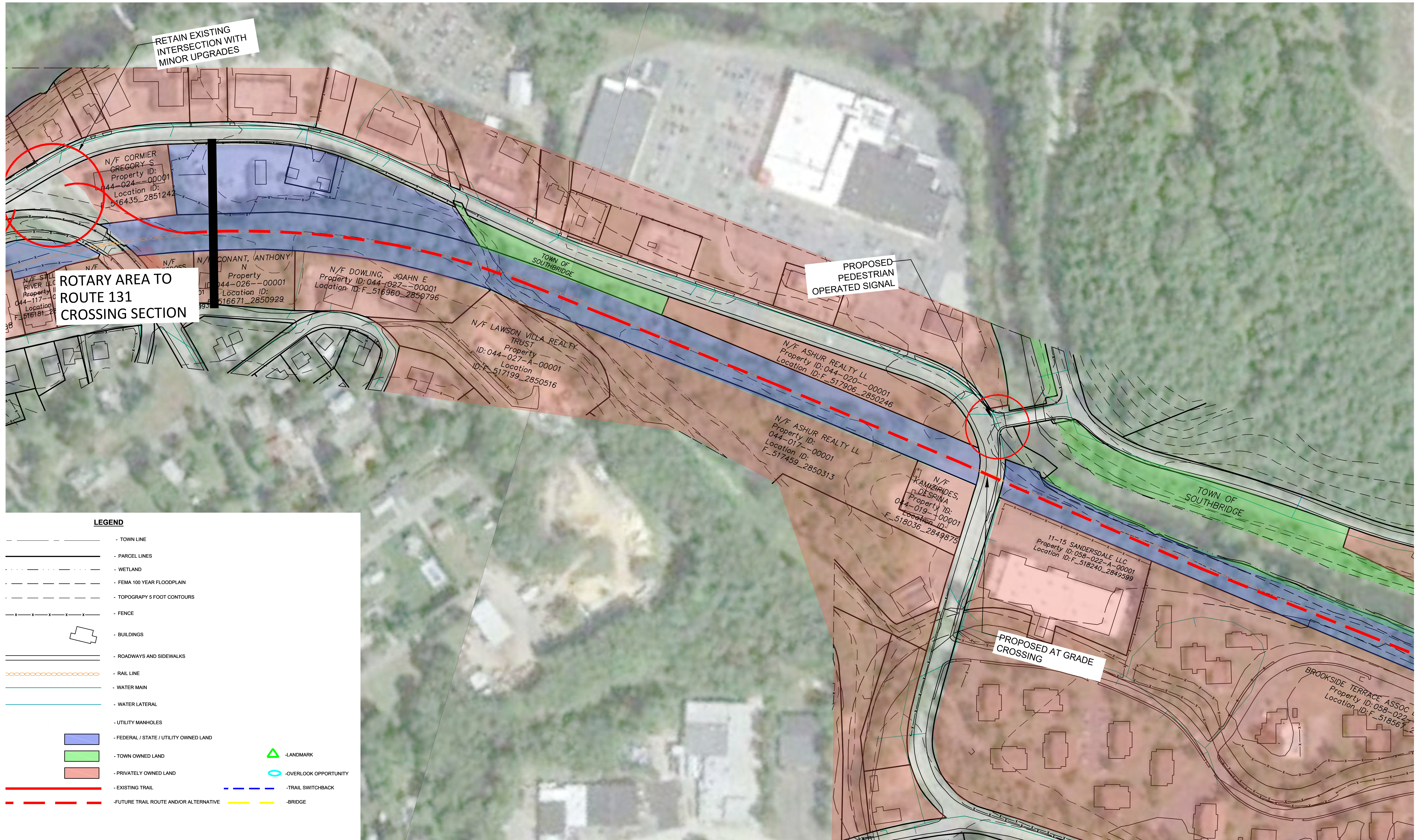
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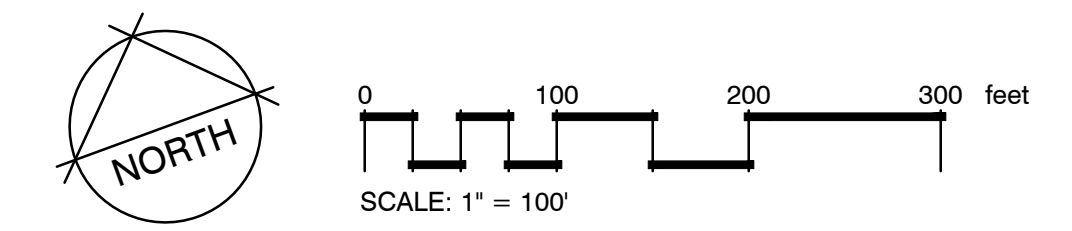
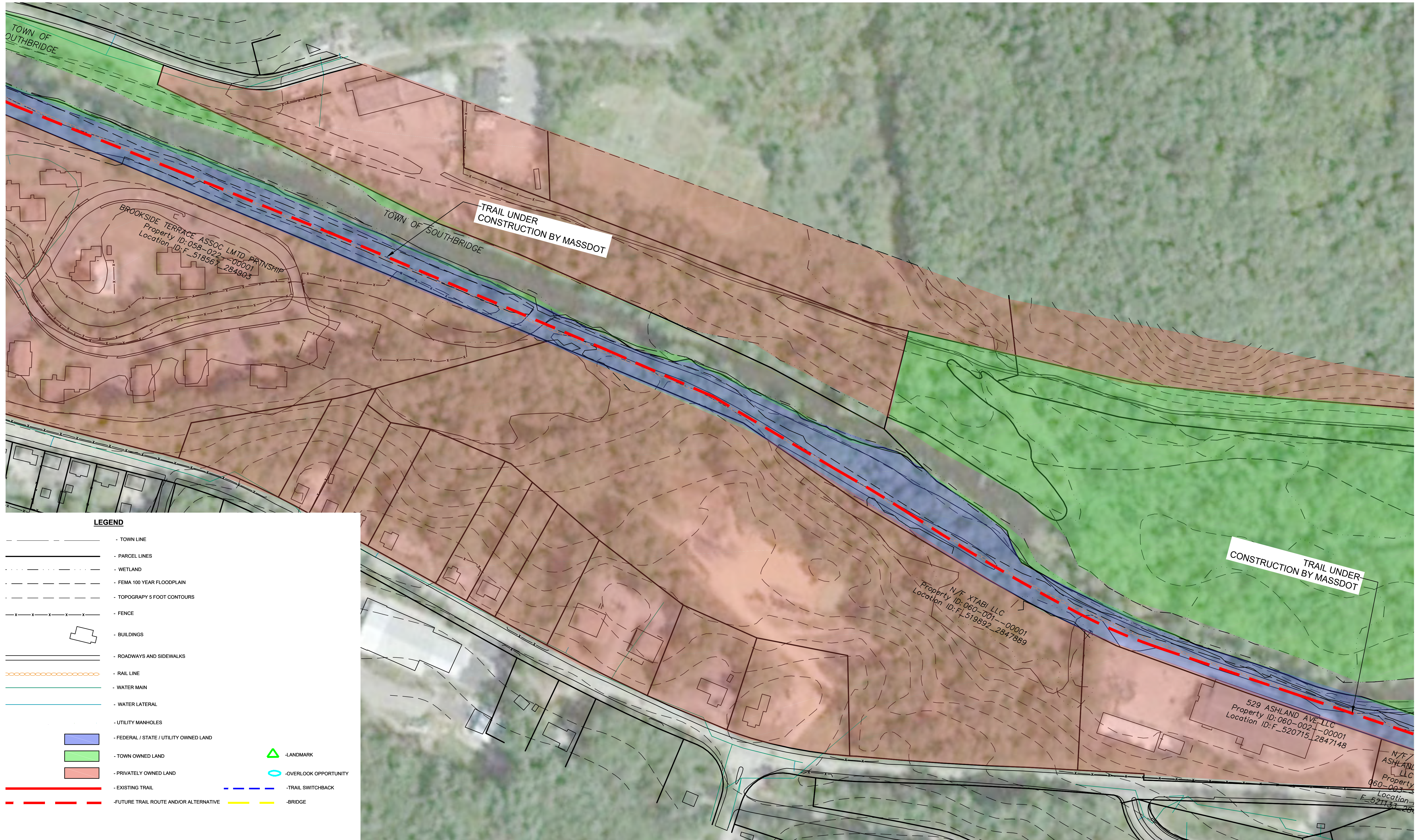


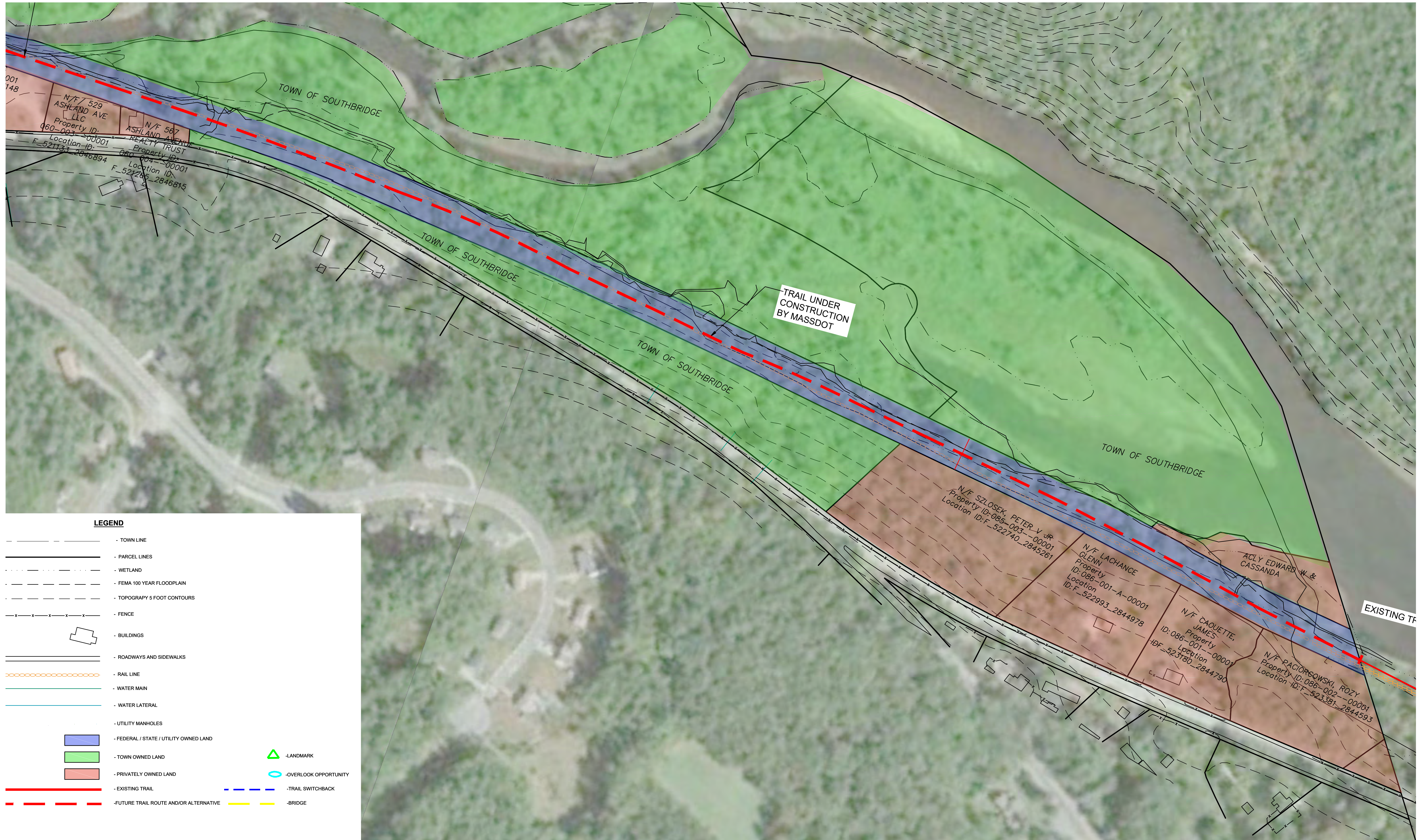
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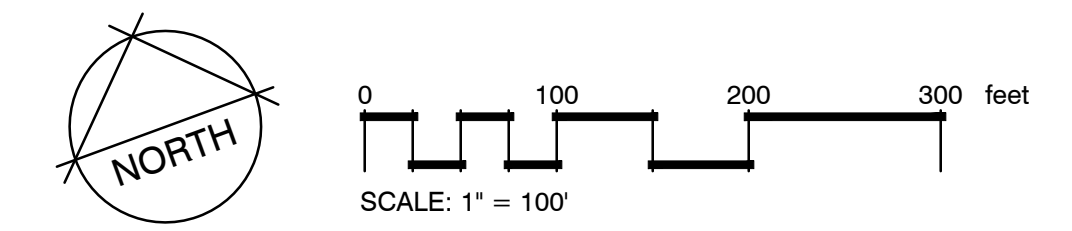
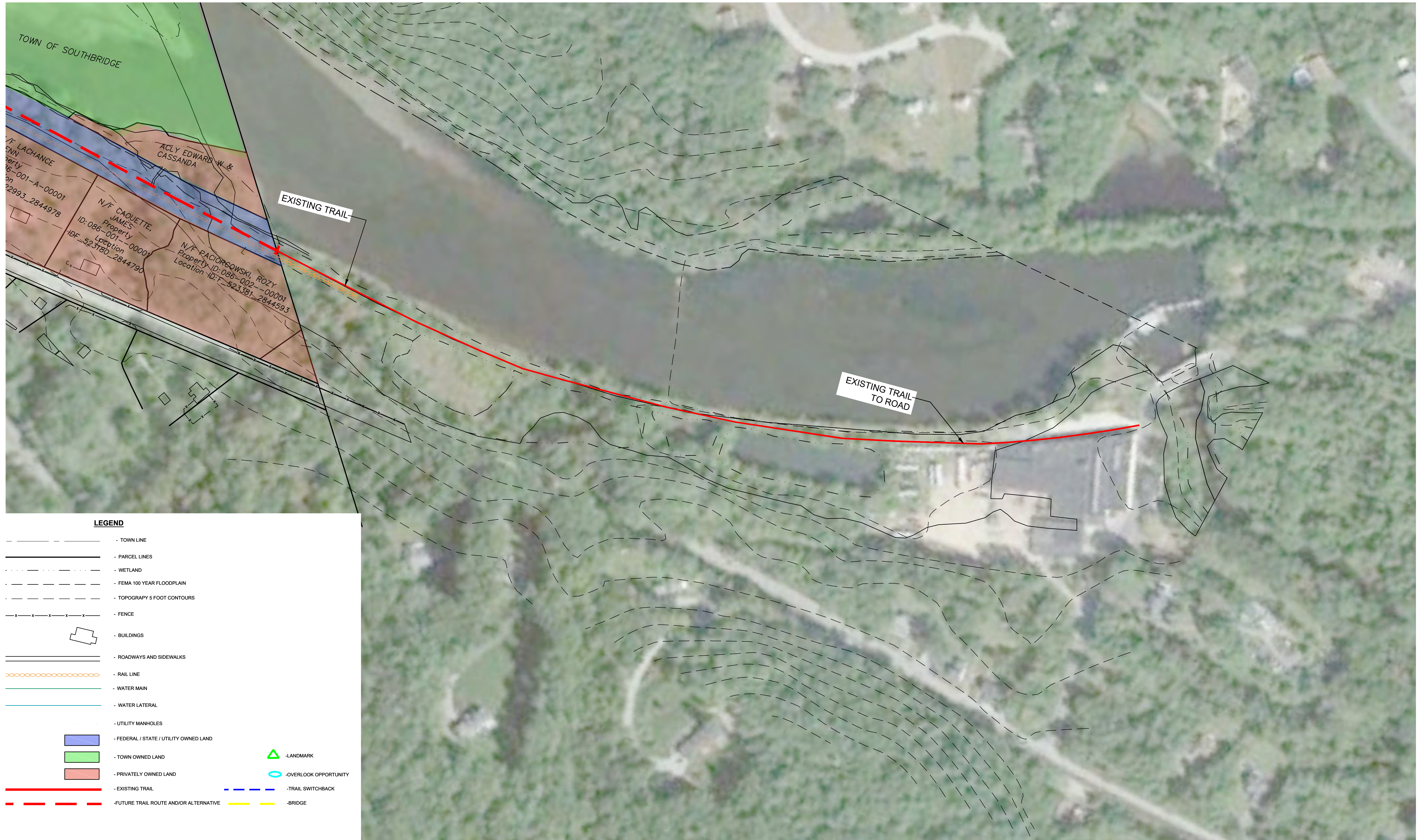
QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022





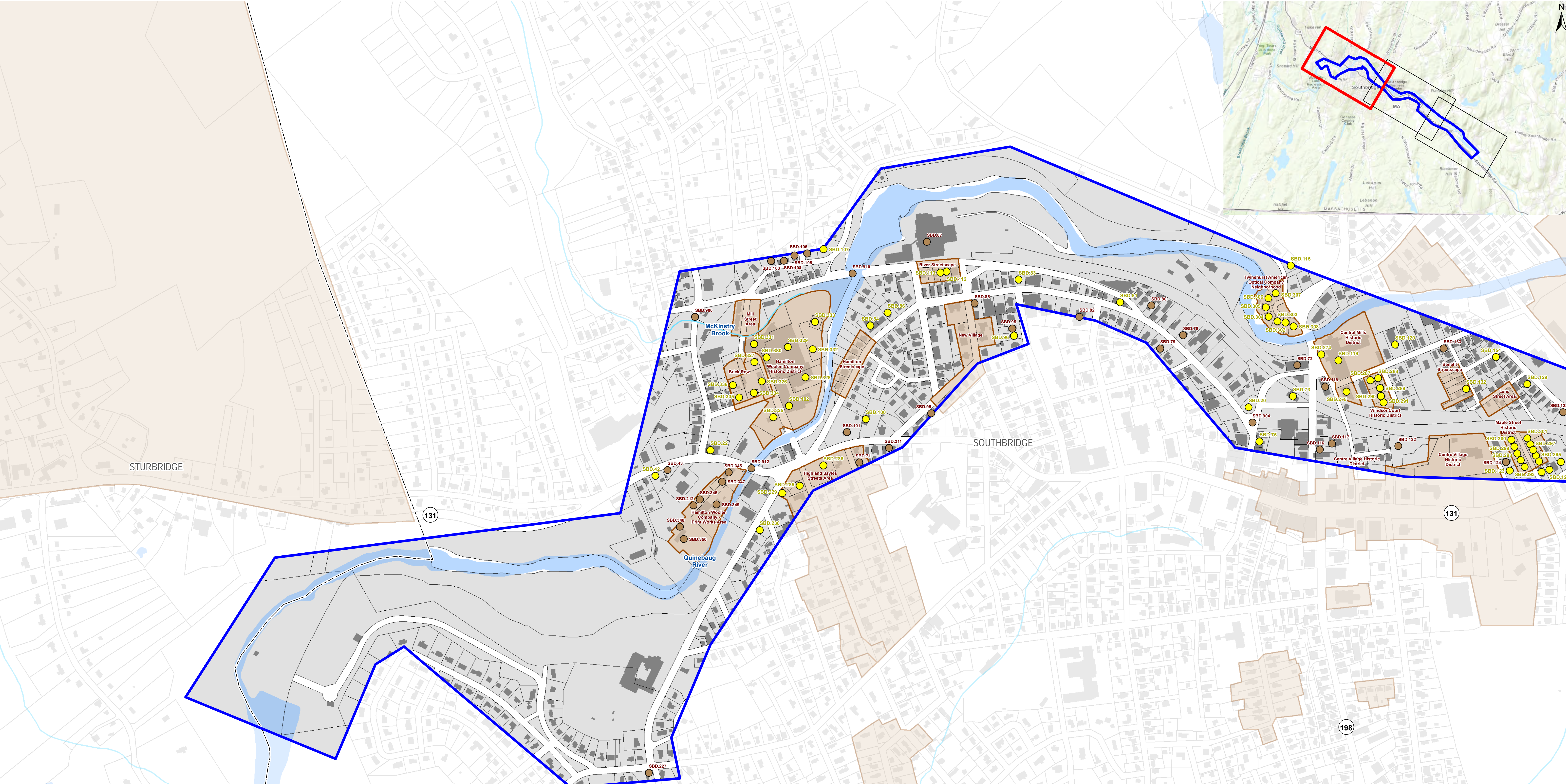
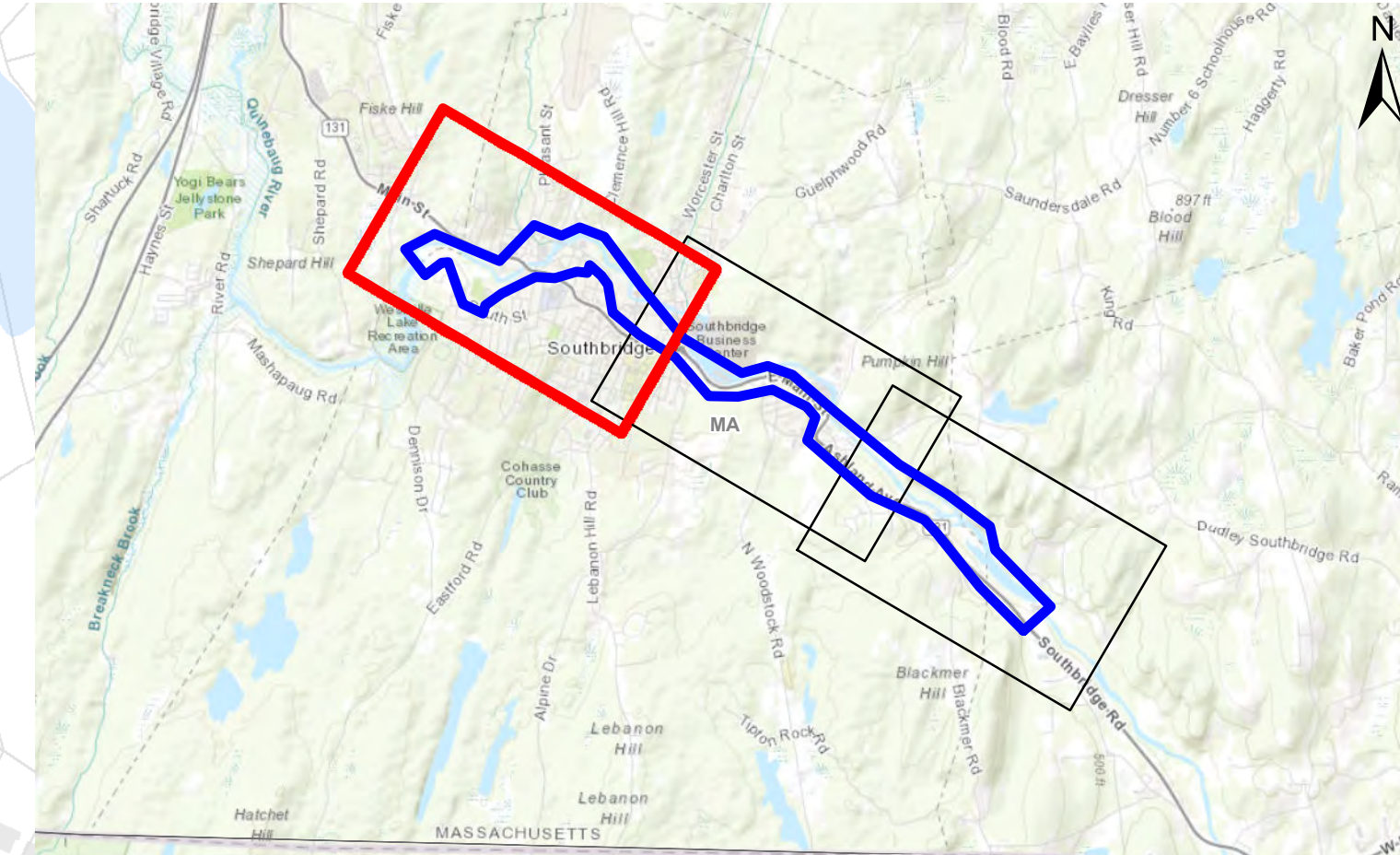




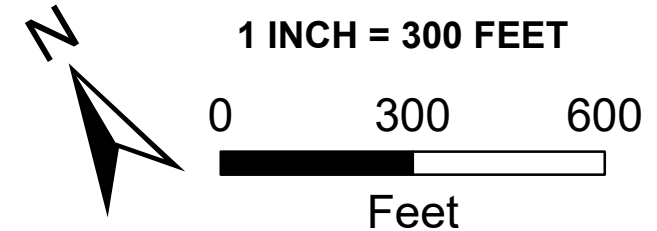
Appendix C

Appendix C: Historic Resources Map

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

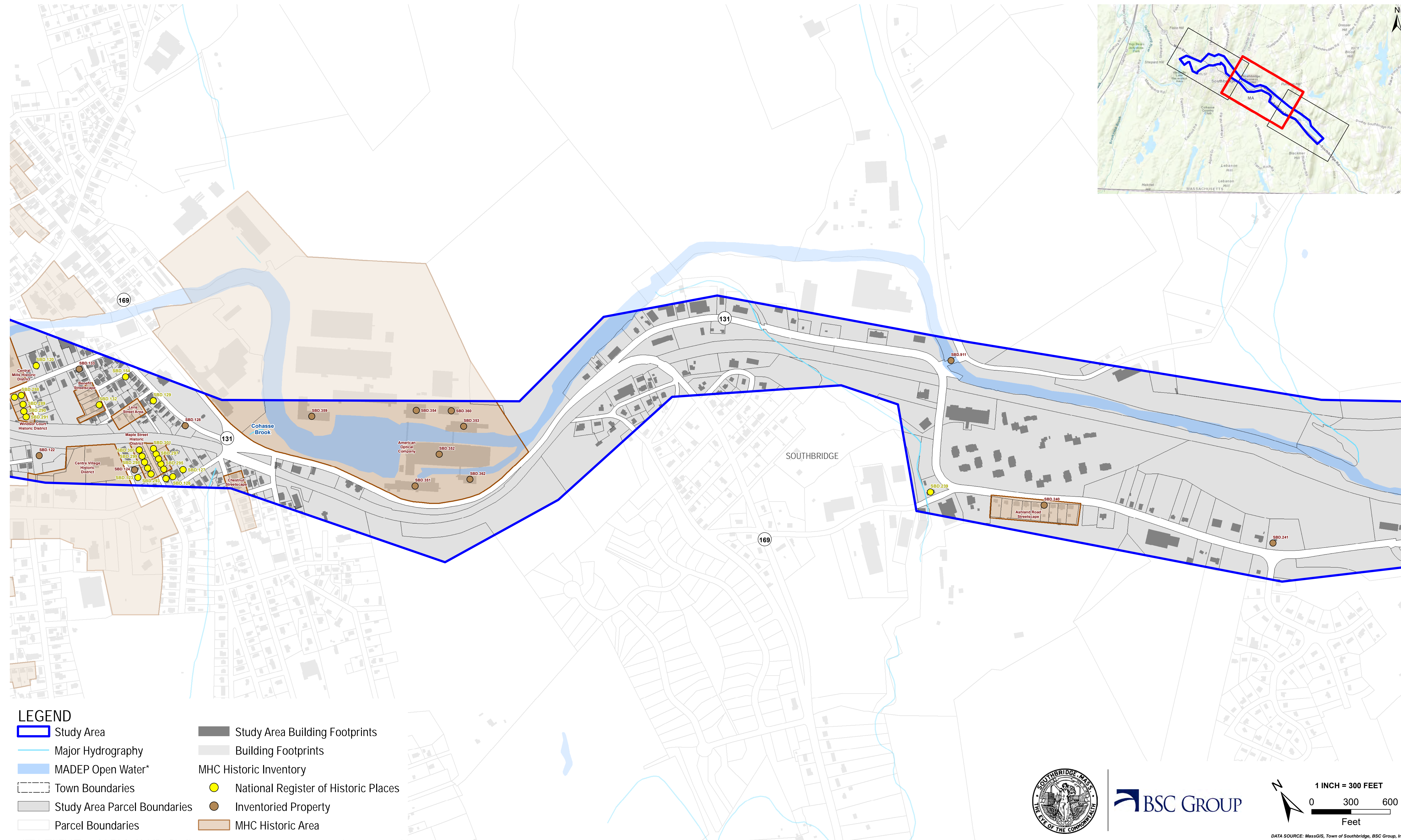
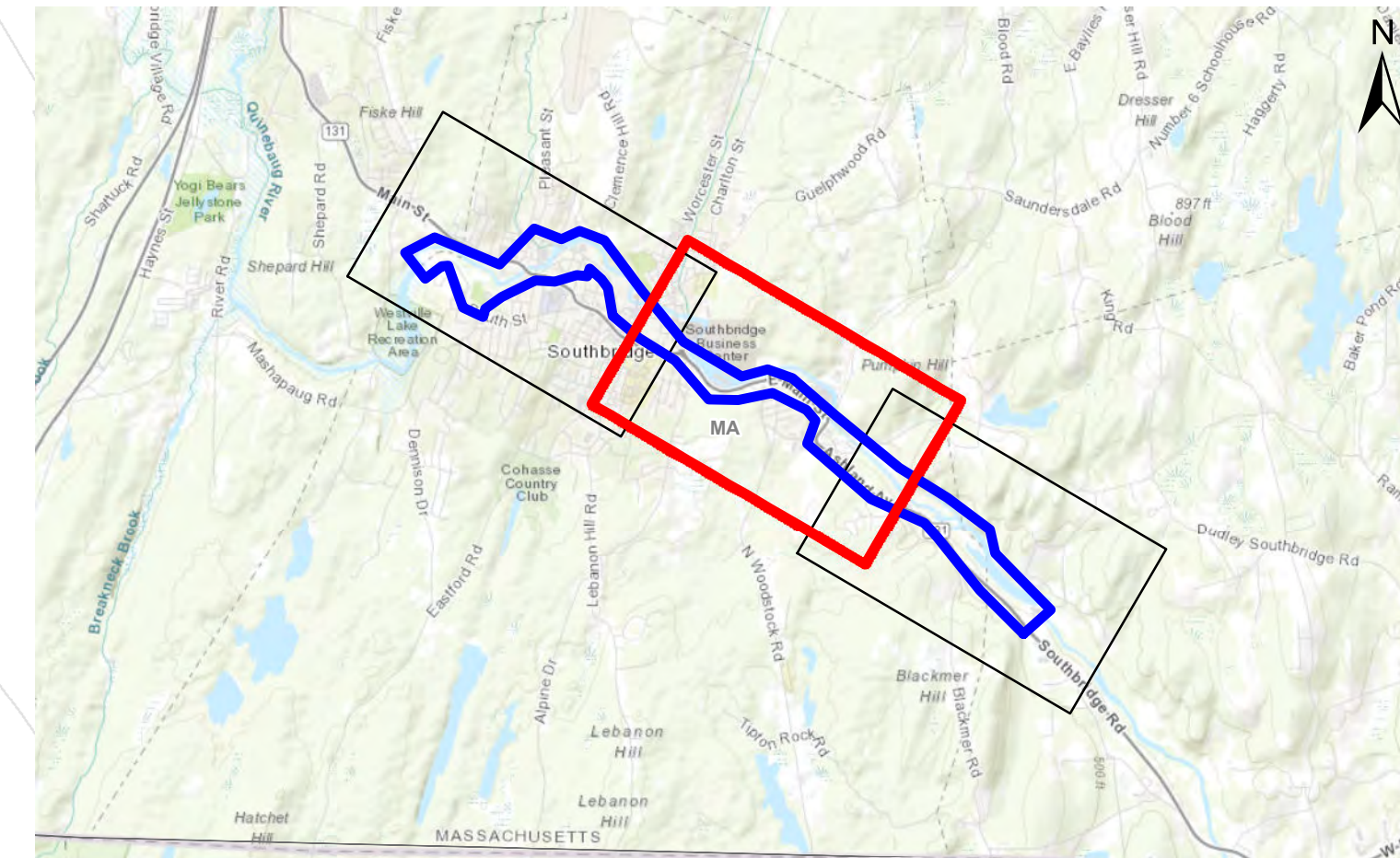


- LEGEND**
- Study Area
 - Major Hydrography
 - MADEP Open Water*
 - Town Boundaries
 - Study Area Parcel Boundaries
 - Parcel Boundaries
 - Study Area Building Footprints
 - Building Footprints
 - MHC Historic Inventory**
 - National Register of Historic Places
 - Inventoried Property
 - MHC Historic Area

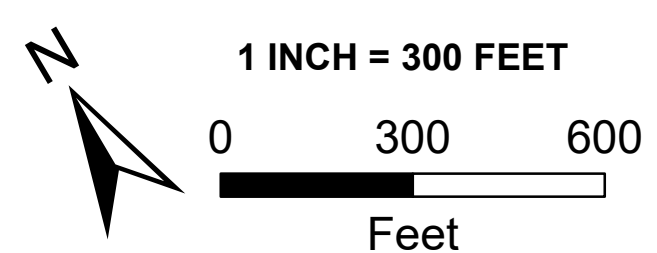


DATA SOURCE: MassGIS, Town of Southbridge, BSC Group, Inc.

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

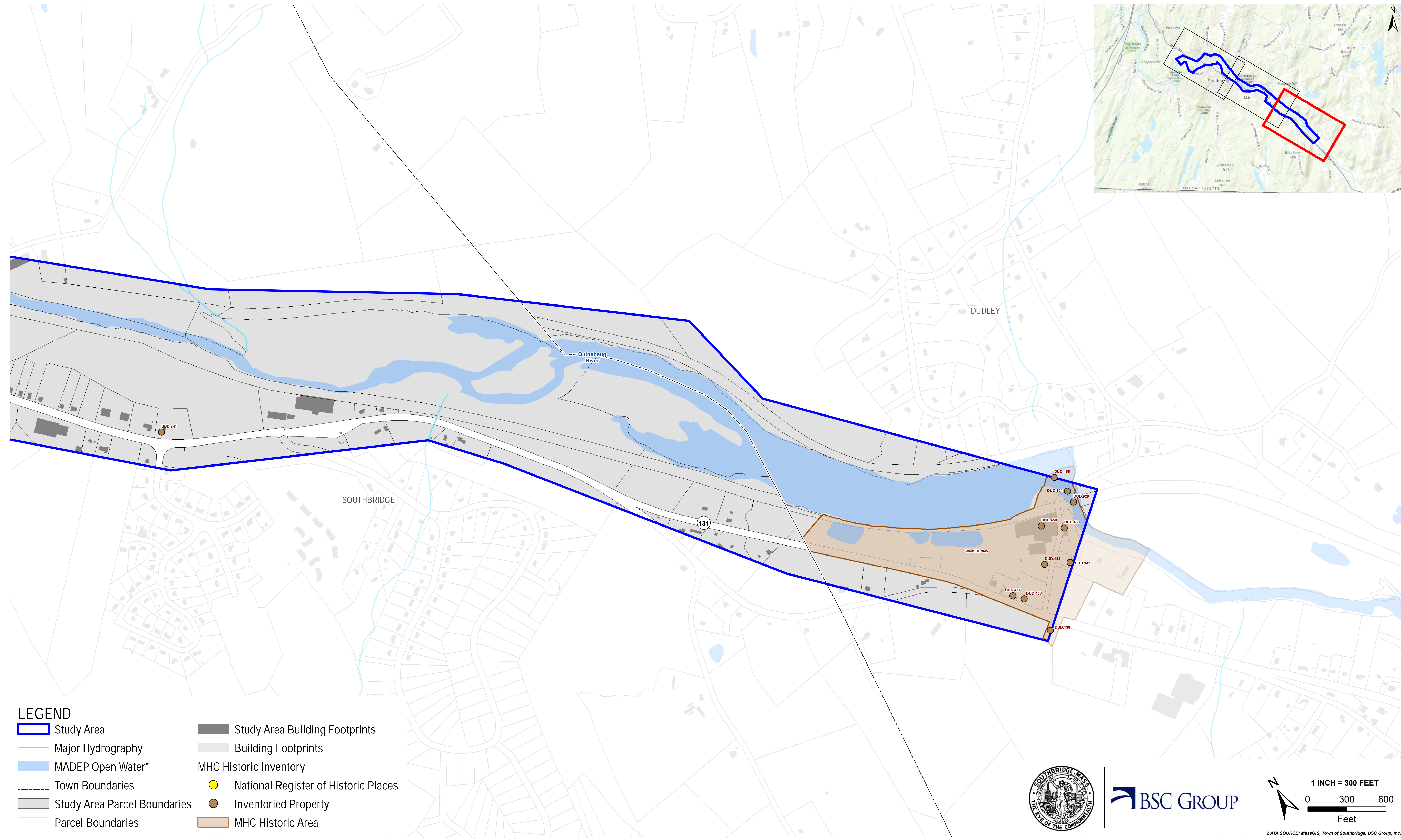
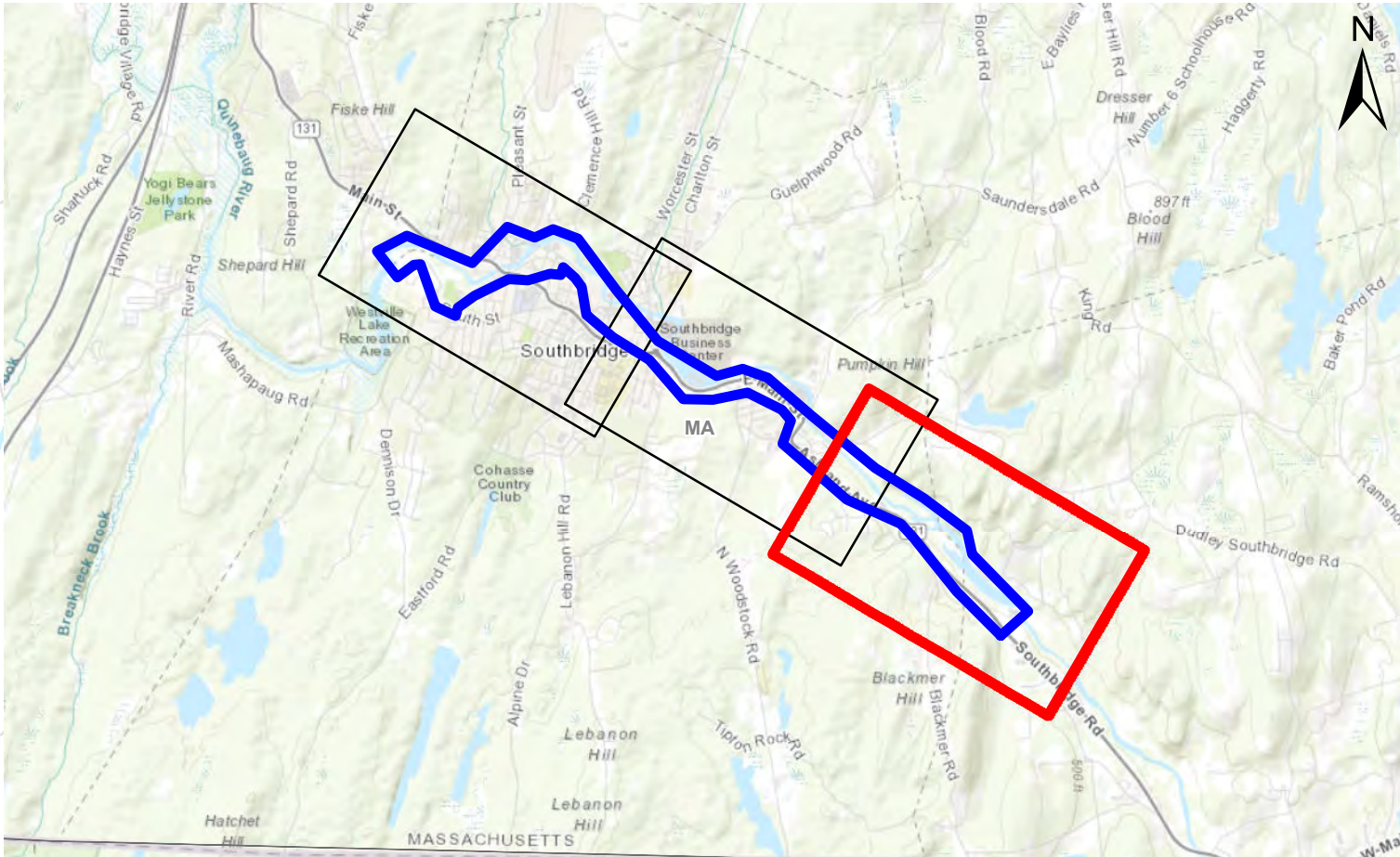


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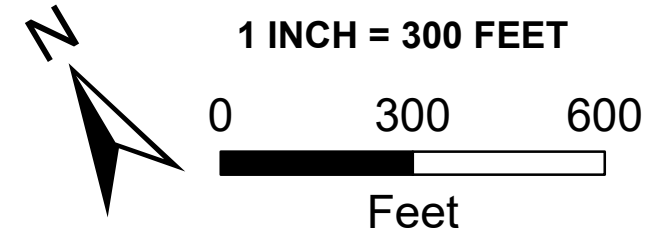


DATA SOURCE: MassGIS, Town of Southbridge, BSC Group, Inc.

SOUTHBRIDGE TRAIL FEASIBILITY STUDY



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 - Town Boundaries
 - Study Area Parcel Boundaries
 - Parcel Boundaries
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 - Inventoried Property
 - MHC Historic Area



DATA SOURCE: MassGIS, Town of Southbridge, BSC Group, Inc.

Appendix D

Appendix D: Phase I Environmental Site Assessment

**Phase I Environmental Site Assessment
Quinebaug Valley Rail Trail
Southbridge, MA**

**Central Massachusetts Regional Planning
Commission**

February 2022



1550 Main, Suite 400
Springfield, MA 01103



FUSS & O'NEILL

February 7, 2022

Andrew Loew
Central Massachusetts Regional Planning Commission
1 Mercantile Street, Suite 520
Worcester, MA 01608

RE: Phase I Environmental Site Assessment
Quinebaug Valley Rail Trail, Southbridge, MA 01550

Dear Mr. Loew:

We are pleased to submit the enclosed report of the Phase I Environmental Site Assessment (ESA) for the above-referenced site. The Site assessment was conducted in conformance with American Society for Testing and Materials (ASTM) Practice E1527-13, *Standard Practice for Environmental Site Assessments, Phase I Environmental Site Assessment Process* (ASTM, 2013).

Note that ASTM E1527-13 requires that certain elements of a Phase I ESA be updated if the data for the report is more than six months old. Therefore, if this report is to be relied upon after June 1, 2022, we recommend you contact us to discuss options. We have identified two recognized environmental conditions associated with the Site. Our findings are included in *Section 7*.

In accordance with the requirements of the ASTM E1527-13 Standard, we declare that to the best of our professional knowledge and belief, we meet the definition of an environmental professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Thank you for the opportunity to conduct this work. Please contact the undersigned if we can be of further assistance.

Sincerely,

Tim Clinton, CPG, LSP
Project Manager

Matthew Kissane
Environmental Geologist

CC: Dorrie Paar, United States Environmental Protection Agency
Peg Dean, Town of Southbridge

1550 Main Street
Suite 400
Springfield, MA
01103
t 413.452.0445
800.286.2469
f 413.846.0497

www.fando.com

California
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

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A	Scope of Work and Restrictions
B	Qualifications of Environmental Professionals
C	Municipal File Information
D	Environmental Database Search Report
E	Completed Questionnaires
F	Site Photographs



1 Introduction

Fuss & O'Neill, Inc. (Fuss & O'Neill) was retained by the Central Massachusetts Regional Planning Commission (CMRPC) to conduct a Phase I Environmental Site Assessment (Phase I ESA) of the Southbridge section of the Quinebaug Valley Rail Trail (QVRT) identified by the Town Assessor as Map ID 034/179/00001 (the Site) and historically operated as a railroad corridor. We understand that CMRPC is conducting the Phase I ESA to assist the Town of Southbridge (the Town), in anticipation of the Town entering into a lease agreement with the Site owner, the Commonwealth of Massachusetts/Massachusetts Highway Department. The lease agreement would be established as part of the Town developing and operating a recreational bicycle and pedestrian trail on the Site.

1.1 Objective

This Phase I ESA was performed in conformance with American Society for Testing and Materials (ASTM) Practice E1527-13, *Standard Practice for Environmental Site Assessments, Phase I Environmental Site Assessment Process* (ASTM, 2013).

The objective of this Phase I ESA was to identify recognized environmental conditions (RECs) present at the Site. As defined by in ASTM Practice E1527-13, REC means:

...the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

1.2 Scope of Services

This Phase I ESA was performed in conformance with ASTM Practice E1527-13.

Unless otherwise stated in this report, assessments for asbestos-containing materials, PCB-containing building materials, lead-based paint or plumbing materials, radon gas, and mold were not conducted as part of this Phase I ESA. Furthermore, we did not investigate the potential for the Site to contain wetlands, endangered species, ecological resources or historic/cultural resources. Environmental compliance or permitting issues were not considered during this investigation.

As this Phase I ESA was prepared as part of a United States Environmental Protection Agency Brownfield's Assessment Grant awarded under the Comprehensive Environmental Response and Liability Act (CERCLA) 9604(k)(2)(b), an assessment of controlled substances was also conducted as part of this investigation.

Refer to *Appendix A* for the scope of work and restrictions of this ESA and to *Section 9* of this report for limitations on this work product. The qualifications of the Environmental Professionals and other staff involved in the preparation of this document are included in *Appendix B*.

2 Site Overview

2.1 Site Information

2.1.1 Property Location, Size of Parcel and Site Plan

The Site consists of an approximately 3.5-mile segment of the proposed and existing QVRT beginning in Southbridge on Crane Street and extending to the Southbridge border with the Town of Dudley, Massachusetts. The Site rail segment is the western terminus of the discontinued Providence & Worcester Railroad corridor from Webster to Southbridge. The Southbridge Tax Assessor identifies the Site via Property ID 034-179-00001.

According to the Worcester County Registry of Deeds and a property card provided by the Town Assessor, the Site is a portion of an approximately 31-acre irregular-shaped property owned by the Commonwealth of Massachusetts/Massachusetts Highway Department since 2004. The Site consists of developed rail trail sections, abandoned in-place rail line, and undeveloped land adjacent to the rail tracks. A map consisting of United States Geological Survey (USGS) topographic maps showing the Site location is provided as *Figure 1*. A site plan is provided as *Figure 2*.

2.1.2 Site Utilities

As the Site was historically a rail right of way, no buildings were observed on the Site during the inspection conducted by Fuss & O'Neill in December 2021, as detailed in *Section 6.0*. Some electrical lines were observed adjacent to the Site in sections along its length. Manholes for stormwater infrastructure were also observed at multiple locations throughout the Site. No other utilities were observed running to, or located within the Site boundaries, during the Site inspection.

2.1.3 Adjoining Land Use

Based on observations made during the Site inspection and available mapping, properties adjoining the Site include the following:

Address	Description	Zoning
44 River Street	Cutlery Manufacturing (Industrial)	M
66, 76, 100, 101 Central Street	Commercial	CC
6 Laroche Way	Registry of Motor Vehicles (Commercial)	CC
2 R Crane Street	Residential	CC
12 Crane Street	Mixed Retail/Apartment	CC
98 – 190 Hamilton Street	Residential and Commercial	CC
Hamilton Street	Outbuildings	CC
35 Hook Street	Commercial	CC
47 Hook Street	Commercial	M
31, 32 Maple Street	Residential	CC
Crystal Street	Vacant land	GB
33, 37 Crystal Street	Residential	R2
17, 18 Lens Court	Residential	R2
47, 55 Lens Street	Residential	R2
Foster Street	Vacant land	CC
54 Foster Street	Commercial	CC
23 Wardwell Court	Residential	CC
Dudley River Road	Vacant land	M
150, 176, 264 Main Street	Commercial	CC
26 – 42 Main Street	Residential	CC
9 Main Street	Commercial	GB
Main Street	Outbuildings and Vacant land	CC
Main Street Rear	Vacant land	CC
36, 54 East Main Street	Commercial	GB
66, 94 East Main Street	Residential	R3
384 East Main Street	Commercial	M
410 East Main Street	Industrial	M
East Main Street	Vacant land	GB, R1, and M
Sandersdale Road	Vacant land	M
1 Sandersdale Road	Residential	M
6, 11 Sandersdale Road	Commercial	M
23, 87, 79 Golf Street	Commercial	M
27 – 59 Golf Street	Residential	M



Address	Description	Zoning
39 Old North Woodstock Road	Residential	M
46 Old North Woodstock Road	Residential	R2
3 Morris Street	Garage	RB
291 Morris Street	Residential (forest abutting Site)	R1
16 Roumanian Avenue	Church (forest abutting Site)	RB
9 Overland Street	Residential	R1
21 Overland Street	Residential	RB
Ashland Avenue	Vacant land (forest and wetlands)	M
529 Ashland Avenue	Commercial, and Industrial	M
557, 567 Ashland Avenue	Residential	M
781, 189 Ashland Avenue	Residential	M
Ashland Avenue Rear	Vacant land (wetlands and the Quinebaug River)	M

Notes: CC = Central Core, GB = General Business, M = Manufacturing, R1 = Residential 1, R2 = Residential 2, R3 = Residential 3, RB = Retail Business

2.2 Environmental Setting

2.2.1 Physical Setting

Topography and Geology

The Site topography generally slopes to the northeast toward the Quinebaug River, with most sections of the rail line and rail trail itself being generally flat and elevated on a berm proud of the immediately surrounding topography. The regional topography is complex, but generally slopes northeast towards the Quinebaug River (USGS, 2021).

Surficial material generally consists of Urban Land, with specific surficial material mapping units consisting of the Pootatuck Fine Sand Loam, the Saco Mucky Very Fine Sandy Loam, the Chatfield-Hollis-Rock Outcrop Complex, the Charlton Fine Sandy Loam, the Paxton-Urban Land Complex, the Hinckley-Urban Land Complex, and Udorthents(USDA, 2018). Urban land generally consists of areas of soil that have been reworked due to cutting and filling.

Bedrock beneath the Site is mapped as Southbridge Member of the Paxton Formation consisting of thick to thin-bedded biotite granofels and calc-silicate granofels, sulfidic shist, and diopside calc-silicate granofels, with a small lens of biotite granitic gneiss of the Merrimac belt (Zen, 1983). Outcropped bedrock was observed at several locations throughout the Site during the Site inspection.

Hydrology and Hydrogeology

Groundwater

In the context of the Massachusetts Contingency Plan (310 CMR 40.0932), groundwater at the Site was classified as GW-2 and GW-3.

All groundwater in the Commonwealth of Massachusetts is considered a potential source of discharge to surface water and shall be categorized, at a minimum, as category GW-3.

Groundwater is additionally defined as GW-1 if the groundwater is located within a Current Drinking Water Source Area or a Potential Drinking Water Source Area (again, in the context of the MCP). According to information provided by Environmental Data Resources (EDR) included in *Appendix D* and the Office of Geographic Information, Commonwealth of Massachusetts, Information Technology Division (MassGIS) MassMapper, the Site is not located in a potentially productive aquifer, sole-source aquifer, Zone II or interim well-head protection area. There are no known private water supply wells in proximity to the Site, therefore GW-1 does not apply.

Groundwater is additionally defined as GW-2 if the groundwater is located within 30 feet of an occupied structure and the average annual depth to groundwater in that area is 15 feet below grade or less. Based on local topography and surface water hydrology, the depth of groundwater on-site is inferred to be less than 15 feet below grade at some locations, especially on the southeastern section of the Site where the rail right-of-way is located adjacent to the Quinebaug River. There are occupied structures within this area that are likely within 30 feet of the Site. Groundwater on the Site within 30 feet of these occupied structures would be classified as GW-2.

Based on USGS mapping and field observations of the local topography and surface water hydrology, the inferred groundwater flow direction is generally to the northeast toward the Quinebaug River. No field sampling, piezometric mapping, or water level gauging was conducted by Fuss & O'Neill to confirm the inferred groundwater flow direction and depth.

Surface Water

The Site parallels the Quinebaug River for most of its length, crossing Cohasse Brook, Lebanon Brook, and an unnamed tributary, all leading to the Quinebaug River located north/northeast of the Site (USGS, 2021). According to the Massachusetts Surface Water Quality Standards (314 CMR 4.00), the Quinebaug River is designated a Class B surface water.

According to 314 CMR 4.05, Class B surface waters are “designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth, and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (“Treated Water Supply”). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.”

2.2.2 Wetlands and Flood Zone Mapping

Based on the MassGIS MassMapper, there are wetlands located within the southwest portion of the Site near the Southbridge-Dudley border. There are additional wetlands abutting the Site along a number of sections throughout its entirety. Note that Fuss & O'Neill did not independently determine wetland boundaries or the presence of wetlands as part of this assessment.

Based on the Federal Emergency Management Agency (FEMA) Flood Map (25027C0934E, effective date 7/4/2011), portions of the southeastern section of the Site are mapped as floodplains.

2.2.3 Location of Public Water Supply Sources

Fuss & O'Neill used data available from the MassGIS MassMapper to obtain the information regarding public water supply wells and aquifer protection areas in the vicinity of the subject Site. No public water wells or systems, or aquifer protection areas, are located within a one-half-mile radius of the Site.

2.3 Previous Environmental Investigations

Based on review of MassDEP files, one environmental investigation within the Site corridor was completed in 1996, as discussed in *Section 4.0*.

3 Site History

The following sources were used to develop the history of the Site and, to the extent required by ASTM Practice E1527-13, the nearby properties:

- A summary of city street directories provided by EDR for the years 1952, 1965, 1968, 1971, 1975, 1982, 1986, 1992, 1995, 2000, 2005, 2010, 2014, and 2017. Street directories covering the Site earlier than 1952 were not available.
- Aerial photographs provided by EDR for the years 1938, 1960, 1966, 1974, 1986, 1995, 2008, 2012, and 2016.
- Topography maps provided by EDR for the years 1889/1890, 1892/1893, 1908, 1915/1918, 1921, 1943, 1945, 1947, 1952/1953, 1953, 1975, 1979, 1982, 2012, 2015, and 2018. Because the Site spans a mapping boundary, only a partial topography map was provided for the years 1943, 1947, and 1953.
- Sanborn Fire Insurance mapping provided by EDR for the years, 1888, 1894, 1899, 1904, 1911, 1918, 1925, 1948, and 1965. The site area was only partially covered by the provided Sanborn Fire Insurance maps due to the large size of the Site.

- Files and personnel at the Town offices of the Assessor, Health Department, Inspection Services, Conservation, and Fire Department.
- Valuation Maps prepared for the New York – New Haven Railroad, dated 1915, and the Providence-Worcester Railroad, dated 1976, provided by the Town.
- Town of Dudley, MA Official website.

The past uses of the Site and nearby properties based on the sources above are summarized below.

Site

According to the official website of the town of Dudley, which has developed its portion of the railroad as a rail trail, the Site had been developed as a railway providing connecting rail services to Boston from 1857 to 1921 and freight services from 1857 to 1997¹. This date range of the Site's use as an active rail line is corroborated by the earliest provided Sanborn maps, which show the rail already in place by the year 1888, and the topographic maps which show the railroad in the 1982 map, but not the subsequent 2012 map. The Southbridge spur of the railway was purchased by the Commonwealth of Massachusetts in 2004. Following this purchase, portions of the Site have been developed into pedestrian rail trail path, consisting of a 1.7-mile section of the Site, starting at Route 131 and connecting to the Dudley portion of the rail trail at the Dudley town line².

Sanborn maps dating back to 1888 depict the Site rail corridor traversing industrialized areas of Southbridge, particularly to the north and west of the present-day Main St- Morris St intersection. Railroad spurs connecting adjacent industrial properties to the Site were present, including connection to the Southbridge Print Works in 1888. Multiple tracks existed at the western end of the Site, proximal to River and Crane Sts. In 1894, three rail tracks were present in the area, with spurs connecting to adjacent industrial parcels including a lumber house, grain house, and freight house. A passenger station was also present along the Site between Marcy and Pine Sts. at this time. Further east, the Site was characterized by one main track with spurs to adjacent parcels including the Southbridge Coal Co. and a cotton house. By 1904, a second track appeared in the Site corridor beginning at Hook St, crossing Central and Foster Sts. The single track configuration was present just east of Foster St.

By 1915, the western end of the Site adjacent to Crane St included five sets of tracks and a freight house and coal shed were present. Further east, near the intersections of Main St with Chestnut and Morris Sts., a gasoline station with dispensing pumps and a garage operated by the Texas Oil Co. appeared to extend partially into the Site corridor. This area appears to have been significantly reworked since that time, based on the present-day traffic circle connecting Main and Mechanic Sts. In 1918, a passenger station was present in the Site corridor between Hook and Central Sts. In 1925, a roundhouse and turn table connected to two sets of tracks were present at the western end of the Site, adjacent to Crane St. These buildings were not depicted in the 1948 Sanborn map of the Crane St. area.

In 1948, the passenger station located between Hook and Central Sts. Had been converted to a filling station and three gasoline tanks were located just south of the building, outside the Site corridor. The

¹ <https://dudleyma.gov/residents/recreation/rail-trail/>

² <https://ci.southbridge.ma.us/385/Quinebaug-Valley-Rail-Trail>

passenger/filling station building is occupied by a Registry of Motor Vehicles branch, based on observations made during the site inspection. In 1965, this building was occupied by the Civil Defense Headquarters and the adjacent gasoline tanks were no longer present.

The general configuration of the Site generally remained consistent through the 1960s and into the 1990s, with an industrialized rail corridor to the west, and a single set of tracks traversing more rural/undeveloped areas east of Morris St, towards the Dudley town line.

Nearby Properties

Historical topographic mapping indicates that significant development of the area proximal to the Site had begun prior to 1889, the earliest dated topographic map provided by EDR. According to available Sanborn fire insurance maps, significant development occurred in the vicinity of the Site in the late 1800s and early 1900s. According to an 1888 Sanborn fire insurance map, the American Optical Works factory (located just north of the Site along Mechanic Street) was to be “completed and in operation on June 1, 1888”. The Southbridge Gas and Electric Light company is seen first on the 1899 Sanborn map and was located adjacent to the Site near the intersection of Main Street and Foster Street. The 1899 and 1904 Sanborn maps show the American Optical factory had been expanded. The 1904 and 1911 Sanborn maps indicate additional residential dwellings were constructed along Main Street within that time period. The 1966 and 1974 aerial photos show development of a shopping center and additional residential buildings in the vicinity of the Site in Sandersdale (a hamlet of Southbridge), just southeast of Southbridge center. A review of city-street directory information and available aerial photography generally confirmed these observations.

Sanborn mapping indicates that historic mills or factories were located on properties adjacent to, or closely nearby, the Site. The American Optical Corporation factory, Central Mills Co. manufacturer of cotton sheetings, Southbridge Print Works, and the Hyde Manufacturing Co. Knives Blades and Shaves are all present in the earliest available Sanborn maps from 1888. A spur of the rail extends to a cotton store house between Central Street and Foster Street in the 1888 Sanborn map, nearby to the Central Mills Co. cotton sheeting factory. This structure remained as a store house, and in the 1918 Sanborn was labeled as general waste storage in addition to cotton storage. In the 1948 Sanborn map the structure is labeled as an auto sales and service building, and the 1965 Sanborn shows this structure used for dry cleaning, and also indicates that the spur connecting the railroad to the building was no longer present.

Visible in the 1888 Sanborn maps, a spur connected the railroad to the Southbridge Print Works, where the spur traversed a “waste way”. A Freight House can be seen in the 1894 Sanborn map adjacent to the western end of the Site, parallel to Hamilton and River Sts., and was renamed to Freight Depot in the 1918 Sanborn map. In 1915, a coal shed and eight above-ground oil tanks were present adjacent to the western end of the Site (at Crane St.), located on the parcel occupied by the present-day Harrington Cutlery facility. The 1948 and 1965 Sanborn maps show a structure labeled coal bins, and six fuel oil tanks belonging to the Walker Coal Company adjacent to the Site, proximal to Crane St. This property was labeled as the Walker Lumber Co. in 1925 and featured a coal shed adjacent to the Site.

The area along Crane/River and Hamilton Sts. was also the location of a historical passenger station, first seen in the 1894 Sanborn map proximal to a freight house. In the 1918 Sanborn map, this passenger

station was replaced by a railroad spur, which is still visible in the 1965 Sanborn map. The 1894 Sanborn map show another spur from the tracks in this area connecting to a lumber house with a coal shed reportedly 120 feet beyond the edge of the map. This coal shed is visible in the 1904 Sanborn map and was the structure to which the spur was connected. The 1948 Sanborn map labels the structures as property of the Southbridge Coal Co., with the addition of coal bins and four fuel oil tanks in the vicinity of the two structures. No change to these structures can be seen in the 1965 Sanborn map. The Hamilton Woolen Co. complex occupied the western abutting property in 1918 and 1928, and was replaced by the Russell Harrington Cutlery Co. by 1948.

The 1894 and 1904 Sanborn maps show a spur extending toward Hook Street, connected to a coal shed of the Southbridge Coal Co., abutting a hay and grain gristmill with a grain elevator. The coal shed is still present in the 1911 Sanborn map, but the Southbridge Coal Co. label is gone. A facility labeled "Standard Oil Co." was located nearby and included two oil tanks and a spur. The grain elevator was no longer visible, and the gristmill was occupied by Morse Bros. Grist Mill by 1918. In the 1948 Sanborn map, the coal shed is still visible, and the gristmill has been relabeled to feed and grain. The coal shed is not depicted in the 1965 Sanborn, and the former gristmill is labeled as a store.

Visible in the 1894 Sanborn map between Hook Central Sts. is a canal which runs underneath the railroad. A steam laundry facility was located just south of the canal. In the 1911 Sanborn, this portion of the canal was covered up by the construction of a passenger station within the Site corridor. The canal is not visible in the 1918 Sanborn map, but the passenger station was present.

In the 1899 Sanborn map, the Southbridge Gas and Electric Light Co. can be seen at the end of Wardwell Street, just east of Foster St, including two gasometers, with one having a capacity of 3,000 feet. The 1911 Sanborn map relabels this property as Webster and Southbridge Gas and Electric Light Co., and an old meter house is no longer visible at this location. On the 1918 Sanborn map one of the two gasometers had been relabeled to storage, and the 3,000-foot sized gasometer had been relabeled as a 50,000 cubic feet gas holder. A gas holder of 100,000 cubic feet capacity is depicted on this Sanborn map, along with two fuel oil tanks. In the 1925 Sanborn map, the fuel oil tanks are no longer visible, and the 50,000 cubic foot gas holder had been relabeled to a 40,000 cubic foot gas holder. In the 1948 Sanborn map the property had been relabeled to the Worcester County Electric Co. sub-station. Also, a transformer yard appeared in the Sanborn map and the 40,000 cubic foot gas holder had been relabeled to Hiltonshpere gas holder. No changes were seen in the 1965 Sanborn map compared to the 1948 Sanborn map.

Additional notable historical locations of industrial development near the Site were observed on historic mapping. The 1894 Sanborn map indicates a coal shed adjacent to the section of rail across the street from the American Optical Company lens factory. The Clemence Lumberyard and Sawmill was located between the Site and the American Optical facility in the late 1800s. In this same area on the 1911 Sanborn map, a spur connecting to East Main Street was present. The American Optical facility also included a benzene and fuel oil tanks which appeared to be above-ground, in 1911. According to the 1918 and 1925 Sanborn maps, four underground tanks used for storage of gasoline and fuel oil were present at the lens factory. The railroad spur was shortened in the 1948 Sanborn map, and in the 1965 Sanborn map an iron conveyor was present perpendicular to the spur, ending at East Main Street. In

1948, a filling station with two gasoline tanks was present between the Site and the American Optical Company facility, along East Main St.

One oil store house, one filling house, and two oil tanks labeled as belonging to the Texas Oil Company were present proximal to the Site, near the intersection of East Main Street and Morris Street on the 1918 Sanborn map, and were still present in the 1965 Sanborn map. Across the tracks from the Texas Oil Co. property in the 1948 Sanborn map, a filling station was present. The 1948 Sanborn map shows “coal pockets” and three 10,000-gallon capacity fuel oil tanks near where the Site intersects Foster Street. This number increased to six tanks of 10,000-gallon capacity each in the 1965 Sanborn map and a coal pile was also present nearby.

In summary, the historical records reviewed as part of this Phase I ESA depict industrial development adjacent to the Site dating back to at least the late 1800s and continuing into the late 1900s. The adjacent industrial land usage was particularly concentrated from the western end of the Site to the approximate intersection of Morris and Main Sts. Further east, surrounding historical land use was primarily undeveloped or commercial and residential in nature. Industrial land usage surrounding the Site included documented storage and handling of coal and petroleum products at adjacent properties, and handling of other hazardous materials was also likely. Railroad spurs connecting adjacent industrial parcels to the Site corridor were observed throughout the Site’s developed history.

MassDEP Best Management Practices

In 2003 MassDEP published guidance entitled “*Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails*” (BMP Guidance). According to MassDEP, the best management practices were developed “*to eliminate or minimize potential exposures to residual oil or hazardous materials (OHM) commonly found along railroad rights-of-way being converted to rail trails.*” Such “residual” contamination may be deposited along a railroad corridor as a result of the following normal railroad operations:

- Railroad ties dipped in arsenic solutions
- Creosote from railroad ties
- Weed control using arsenic solutions
- Application of lead arsenate as a pesticide
- Slag used as railroad bed fill
- Lubricating oils and diesel fuel dripping from railroad equipment
- Coal ash, diesel fuel and polycyclic aromatic hydrocarbons (PAH) from engine combustion

MassDEP recommends that contamination related to the railroad activities be assumed present and addressed through best practices outlined in the BMP guidance, in lieu of traditional subsurface investigation. Some examples of BMPs described in the guidance which are intended to mitigate risk include environmental monitoring during construction, dust control, health and safety training, use of fencing and signage, and implementation of stormwater controls.

Releases of OHM not related to normal railroad operations may also occur along a railroad right-of-way. Examples of such abnormal operations include the following:

- Spills of OHM at switching and repair yards
- Railroad accidents involving spills of oil or hazardous cargo
- Releases of OHM on abutting properties which impact environmental media located within the railroad right-of-way

In accordance with the BMP guidance, the Site most closely resembles an industrial rail corridor due to the presence of industrial and commercial activities occurring along the Site. As an industrial rail corridor, contamination related to normal railroad operations is assumed to be present, but the potential for contamination from other industrial activities should also be considered. MassDEP's best management practices recommend sampling of environmental media in cases where contamination from abnormal operations is suspected.

4 Federal, State, and Local File Review

Files of Federal, State, and local agencies were reviewed for environmentally-related issues pertinent to the Site and nearby parcels, such as permits, inspection reports, enforcement history or documented releases of hazardous materials. The sources of information listed in the following table were researched to identify properties of concern within distances of the Site specified by ASTM Practice E1527-13.

Information Source*	Search Distance
Federal Files	
National Priorities List (NPL)	1 mile
Delisted NPL Sites	0.5 mile
Resource Conservation and Recovery Act (RCRA) CORRACTS list (RCRA Site Subject to Corrective Action)	1 mile
Resource Conservation and Recovery Act (RCRA) Treatment, Storage or Disposal Facility (TSDF) List	0.5 mile
Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) List, including No Further Remedial Action Planned (NFRAP) sites	0.5 mile
RCRA Generators List	property and adjoining
RCRA No Longer Regulated (NLR) List	property and adjoining
Federal Institutional / Engineered Control List	property only
Emergency Response and Notification (ERNS) List	property only
State Files	
Hazardous Waste Site List (State sites equivalent to NPL)	1 mile
Hazardous Waste Site List (State sites equivalent to CERCLIS)	0.5 mile
Landfill and Solid Waste Site	0.5 mile
Leaking Underground Storage Tank (LUST) List	0.5 mile
State Voluntary Clean-up or Brownfield Sites	0.5 mile

Information Source*	Search Distance
Oil & Chemical Spills Database	property and adjoining
Registered Underground Storage Tank (UST) List	property and adjoining
State Institutional / Engineered Control List	property only

*Fuss & O'Neill used Environmental Data Resources (EDR), an environmental database search service, to obtain the information referenced in the above table. EDR provides access to publicly available environmental databases maintained by various Federal, State, and local agencies. A copy of the information provided by EDR relative to the Site and nearby properties is included in *Appendix D*. The listed information sources are defined and described in detail in the EDR report.

4.1 Summary of Regulatory Database Information

The environmental concerns were identified for the Site in the environmental databases searched.

- A release of OHM at a “railroad spur” on Foster Street was reported to MassDEP in November 1995. The release achieved a Class B-1 Response Action Outcome in November 1996.

As reported in the EDR Report in *Appendix D*, numerous properties were identified in the environmental databases within the minimum search radii required by ASTM Practice E 1527-13. These included over 80 properties with one or more incidents of documented releases of OHM. Of these, 15 properties with documented OHM release incidents were located adjacent to the Site corridor. The large majority of reported releases proximal to the Site had achieved Response Action Outcome or Permanent Solution, indicating that the release has been assessed, the extent of OHM in the environment has been delineated, and response actions (i.e. cleanup and/or risk characterization) have been performed to demonstrate a condition of No Significant Risk (i.e. regulatory closure under the MCP).

In summary, based on their location relative to the Site, the nature of the reported environmental concerns, the reported regulatory status, and the local hydrogeology, the majority of the listed properties were not anticipated to have a negative effect on the Site, with the following exceptions:

- Nichols Enterprises, 54 Foster Street;
- Bridge Removal Project, North Woodstock Road and East Main Street;
- Brookside Terrace, 11 Village Drive;
- Dexter Russell, Inc., 44 River Street;
- MEC Southbridge, Main Street;

Pertinent MassDEP files pertaining to the Site and the above-listed nearby properties were reviewed to evaluate potential environmental concerns for the Site, as summarized below.

4.2 State File Review

Fuss & O'Neill reviewed files available from the MassDEP online file viewer to identify files applicable to the Site and adjoining properties. Files that are pertinent to the Site and abutting properties that were considered to pose potential risk to the Site are discussed below.

- **Railroad Spur (within Site corridor; Hook Street, Central Street, and Foster Street)** – An *Additional Phase I Site Investigation Report* was prepared by GZA GeoEnvironmental, Inc. (GZA) in November 1996 on behalf of the Providence & Worcester Railroad (P&W). The subject of this investigation was a stretch of the Site corridor which crossed Hook, Central, and Foster Streets. This report documented the results of a series of environmental investigations performed along this portion of the Site.

The GZA report indicated that, on November 22, 1995, MassDEP was notified of the presence of arsenic and polycyclic aromatic hydrocarbons (PAH) in shallow soil within the rail corridor at levels exceeding applicable Reportable Concentrations. MassDEP assigned RTN 2-10882 to this condition. GZA also reported that total petroleum hydrocarbons (TPH) were also detected in soil samples at levels exceeding Reportable Concentrations, although these results were not included in the notification to MassDEP. Soil conditions within the rail corridor were further investigated in response to these findings and similar results were confirmed. GZA reported that, according to P&W, bedding fill material beneath the railroad tracks typically consists of crushed stone, coal slag/cinders, and gravel. Therefore, the presence of arsenic and PAH were believed attributable to the coal materials. GZA performed additional exploratory investigation in summer 1996 and concluded that the elevated concentrations of arsenic and PAH likely originated from coal particles and/or coal ash. Further, the detection of TPH in soil samples was attributed to historic operation of trains and/or other motor vehicle traffic on the track corridor for many years. Based on these findings, GZA opined that the observed soil results were exempt from regulatory reporting, as the coal-based fill materials met the definition of a background condition. The TPH results were also characterized as background, as they were “incidental to the normal operation of motor vehicles”. Therefore, GZA stated that a level of No Significant Risk existed since the nature of the observed soil conditions were defined as background conditions. GZA asserted that a Class B-1 Response Action Outcome existed, indicating that a condition of No Significant Risk existed without the need for remedial actions.

- **MEC Southbridge/Former Southbridge Manufactured Gas Plant (abuts Site to the south; Off Main Street and Foster Street)** – A February 27, 2008 *Class B-1 Response Action Outcome Partial Statement* was prepared by GEI Consultants, Inc. (GEI) on behalf of the Massachusetts Electric Company d/b/a National Grid. The subject of this document was a former manufactured gas plant (MGP) located off Main Street, just east of Foster Street and just south of the Site rail corridor. The former MGP property was impacted by a variety of contaminants associated with historical operation and is tracked by MassDEP under RTN 2-11251. GEI reported that an area extending east-northeast (i.e. down-gradient) from the MGP property was found to contain benzene, toluene, ethylbenzene, xylene, and PAH in soil and groundwater. This area of impact extended across the Site corridor and included properties along Benefit Street, Dean Street, and Lens Street. GEI reported that migration of MGP-

related contaminants from the source facility resulted in the presence of these compounds in subsurface (i.e. 20 to 22 feet below grade) soil within this area. Furthermore, low level MGP contaminants were present in a discrete, deep groundwater plume within this area. GEI reported that, based on investigation activities performed since 2001 and a risk characterization, a condition of No Significant Risk existed within the down-gradient area impacted by migration of contaminants from the MGP property. GEI asserted that a Class B-1 Response Action Outcome had been achieved for the impacted area down-gradient of the former MGP property, indicating that a condition of No Significant Risk existed without the need for remedial actions.

- **Nichols Enterprises, 54 Foster Street (abuts Site to the north)** – An April 11, 2000 *Downgradient Property Status (DPS) Opinion* was prepared for this property by Lincoln Environmental (Lincoln) under RTN 2-11403. This RTN was assigned by MassDEP in response to report of PAH in detected in soil and groundwater at the property. This condition was attributed to the Southbridge MGP (discussed above; RTN 2-11251) located south of 54 Foster Street. The Site corridor forms the boundary between 54 Foster Street and the Southbridge MGP property. Based on environmental investigation of the 54 Foster Street property and the Southbridge MGP facility, Lincoln concluded that contaminants identified at 54 Foster Street were attributed to migration from the MGP facility.
- **Brookside Terrace, 11 Village Drive (abuts Site to the south)** – A February 23, 2017 *Periodic Review of the Temporary Solution* was prepared by GZA on behalf of the owner of this property. The subject of this document was select areas of this property which had been impacted by constituents of concern including petroleum compounds, PAH, metals, and PCBs. The presence of these constituents in environmental media at the property was attributed to fill material that was applied by a prior owner circa 1962 to 1974, prior to its development as affordable housing. In March 2001, MassDEP was notified of the presence of PCBs and metals in the environment and RTN 2-13744 was assigned. Subsequent investigation indicated that the extents of the environmental impacts were confined to the limits of the property. Remediation activities were performed throughout upland areas of the property, resulting in achievement of a Permanent Solution and a condition of No Significant Risk for a portion of the property. At lowland areas of the property, defined by GZA as Lebanon Brook, its banks, and boarding wetlands, a second phase of active remediation was performed. A chain-linked fence was also erected to limit access to these areas. Furthermore, a discrete area of separate phase petroleum in the subsurface was identified beneath a parking lot within the property. In February 2012, GZA asserted that a Temporary Solution had been achieved for the lowland areas and the separate-phase petroleum area, indicating that a condition of No Substantial Hazard exists; however, a condition of No Significant Risk does not exist for these areas due to the remaining petroleum in the subsurface and the presence of PCBs in stream sediments and soil. Periodic monitoring of conditions at the property has been performed since 2012, including monitoring of fencing and restored stream banks, as well as monitoring of the extent and thickness of subsurface petroleum. GZA concluded that continued periodic monitoring and maintenance will be effective at maintaining a condition of No Substantial Hazard and the Temporary Solution. However, GZA further concluded that achievement of a condition of No Significant Risk and a Permanent Solution for the lowland and petroleum areas remained infeasible.

- **Dexter Russell Cutlery, Inc., 44 River Street (abuts Site to the west)** - An August 2021 *Periodic Review of the Temporary Solution* was prepared by CDM Smith (CDM) on behalf of Dexter-Russel Inc. The subject of this document was the property located at 44 River Street, which is adjacent to the western end of the Site corridor. CDM reported that in October 1996, a release of petroleum from underground storage tanks was discovered and RTN 2-11420 was assigned. Excavation of soil and recovery and treatment of groundwater were conducted as remedial measures in response to this release. Application of chemical oxidation amendments in select groundwater monitoring wells was also conducted to reduce benzene levels. CDM reported that environmental impacts remaining at the property include soil containing elevated levels of lead located beneath pavement and the continued presence of petroleum in select monitoring wells. The extent of previously-identified environmental impacts are confined to within the property and an adjacent stretch of the Quinebaug River. In August 2016, a Revised Temporary Solution Statement was filed, indicating that a condition of No Substantial Hazard exists, but that a condition of No Significant Risk and Permanent Solution have not been achieved. Monitoring and maintenance activities are conducted at the property annually, in accordance with the Temporary Solution Statement. These activities include inspection of pavement and fencing, as well as groundwater monitoring and sampling, and observation of the Quinebaug River. CDM concluded that a condition of No Substantial Hazard has been maintained at the property, but that achieving a condition of No Significant Risk remains financially infeasible. CDM stated that periodic maintenance and monitoring of the property will continue until such a time that a feasible Permanent Solution is achieved.
- **Bridge Removal Project, North Woodstock Road and East Main Street (abuts Site to the north)** – In August 2012, an investigation of soil conditions behind a bridge abutment was performed at this location in preparation for a bridge removal project performed by MassDOT. The bridge spanned the Site corridor. According to a February 2013 *RAO Statement* prepared Jewel Environmental Corporation (Jewel), soil within a discrete zone located immediately behind an abutment wall contained polychlorinated biphenyls (PCBs) and the pesticide, dieldrin, at levels just greater than MassDEP Reportable Concentrations. Jewel attributed the presence of these compounds in soil to impacted fill brought from an unknown off-property location to construct the bridge and overlying roadway circa 1938. The abutment was located adjacent to the Site corridor, to the north. Because the abutment and bridge were constructed after the railroad corridor, no evidence that similar fill was applied within the Site was identified.

The applicable PCB and dieldrin data were reported to MassDEP and RTN 2-18692 was assigned. Approximately 500 tons of impacted soil were removed from behind the abutment and disposed off-site as a remedial action. Based on the soil removal and the results of concurrent environmental testing, Jewel concluded that a condition of No Significant Risk existed and a Response Action Outcome (i.e. Permanent Solution) had been achieved.

Based on review of the MassDEP files summarized above, two release conditions have been documented at the Site, attributed to application of fill containing coal components (RTN 2-10882) and migration of MGP contaminants from an abutting property (RTNs 2-11403 and 2-11251). However, environmental assessment and risk characterizations performed in response to these releases indicated

that conditions of No Significant Risk existed in connection with the releases and thus Permanent Solutions had been achieved.

The other releases summarized above were deemed a potential risk to the Site based on the nature of the reported environmental condition, location at an adjoining property, and/or hydrology of the area. However, these releases were reported to have achieved a Permanent or Temporary Solution, meaning that the nature and extent of the releases had been determined. With the exception of the MGP release, no evidence that the nearby off-Site releases had migrated onto the subject site was documented. Therefore, based on review of pertinent MassDEP files, these off-Site releases are unlikely to pose environmental risk to the Site. Moreover, releases that migrate onto a Site from an off-Site source may not be the responsibility of the Site owner solely due to ownership.

4.3 Local File Review

Town Assessor's Office and Registry of Deeds

The following record of ownership for the Site was obtained from records maintained by the Town Tax Assessor's office and Worcester County Registry of Deeds. Note that this review does not constitute a full title search.

Lot 034-179-00001

Date	Volume/Page	Grantor	Grantee
09/02/2004	34530/0037	Providence & Worcester RR Co	Commonwealth of Massachusetts
06/15/1976	5958/49	Robert W. Blanchette, Richard C. Bond and John McArthur, As Trustees of the Property of Penn Central Transportation Company, Debtor	Providence and Worcester Company

Conservation Commission and Planning Department

87 Golf Street Property - Mr. Eric Rumsey, the Town Conservation Agent and Town Planner, provided documents regarding an Enforcement Order dated April 8, 2019, filed by the Town Conservation Commission against the owners of a property located at 87 Golf Street, which abuts the Site. The Enforcement Order is related to the illegal dumping of fill material which had been brought to the 87 Golf Street property from an offsite source. The fill material was pushed into wetlands adjacent to the Site and onto the Site within a portion of the Lebanon Brook, almost completely obscuring the south side of a stone arch bridge located at the Site and blocking the flow of water underneath. The Enforcement Order directed the 87 Golf Street property owner to “remove all materials within the buffer area and the wetland located at the toe of the slope” and to “install erosion/sedimentation controls at the toe of the slope and along the edge of the visible wetlands to prevent erosion of deposited material into the wetland.”



According to Mr. Rumsey, this property was previously seized by the Town through tax title, but was later returned to the previous owner, as the unknown environmental condition of the fill material, and the potential of cleanup which may have been required, posed too great of a liability to the Town. No record that the property owner has complied with the Enforcement Order was identified.

Files and personnel at the Town of Southbridge offices of the Health Department, Inspection Services, and Fire Department were also queried regarding environmental concerns at the Site and surrounding properties. No additional documentation involving environmental concerns were identified for the Site.

5 User-Provided Information

ASTM Practice E1527-13 describes certain tasks to be performed by the user of this assessment that will help to identify RECs at the Site if they exist. ASTM Practice E1527-13 defines the user as “the party seeking to use Practice E1527 to complete an environmental site assessment of the property.” Users can include a potential purchaser or tenant of the Site, a lender, a property manager, or a Site owner.

As part of our agreement to conduct this work, we provided Mr. Eric Rumsey, the Conservation Agent and Planner for the Town of Southbridge, with a User Questionnaire. The Town of Southbridge is anticipating entering into a lease agreement with the Site owner. A copy of this questionnaire and responses is provided in *Appendix E*.

The responses to this questionnaire were used to address the items in the subsections below.

5.1 Record of Environmental Liens of Activity and Use Limitations

Chain of title and title restriction records filed under federal, tribal, state, or local law contain records of environmental liens or activity and use limitations (AULs).

Mr. Rumsey reported that he was not aware of environmental liens or AULs are recorded against the Site. Fuss & O'Neill reviewed MassDEP files pertaining to the Site and did not identify evidence of AULs or environmental liens recorded against the Site.

5.2 Specialized Knowledge or Experience of the User

Mr. Rumsey reported that he is unaware of any specialized knowledge that may assist with the identification of RECs.

5.3 Commonly Known or Reasonably Ascertainable Knowledge

Mr. Rumsey reported that he is aware of the following commonly known or reasonably ascertainable knowledge:

- The Site was a former rail bed;
- There is assumed to be arsenic and hydraulic fluid impacts at the Site; and
- A portion of the Site was cleared as part of a road project at the intersection of Rte. 131 and N. Woodstock Rd.

5.4 Property Valuation, Reduction for Environmental Issues

Mr. Rumsey reported that the Town is looking to enter into a lease agreement with the current Site owner, not purchase the Site, and therefore there is no purchase price associated with this potential transaction.

6 Site Reconnaissance and Interviews

6.1 Interviews

Owner/Key Site Manager

Representatives of the Site owner (the Commonwealth of Massachusetts/Massachusetts Highway Department) did not respond to multiple requests for interview prior to publication of this Phase I ESA. Therefore, no Owner/Key Site Manager interview was conducted. The significance of this data gap is discussed in *Section 7.1*.

6.2 Site Reconnaissance

The Site reconnaissance was conducted on December 7, 2021 by Mr. Matthew Kissane and Mr. Clifford Otis, of Fuss & O'Neill, Inc. The inspection included the physical observation of the entire length of the Site. Steep slopes and dense vegetation prevented unobstructed observation of properties abutting various portions of the Site. Photographs taken during the Site inspection are presented in *Appendix F*.

Site Description

The Site consists of a 3.5 mile section of former railroad right-of-way, constituting a section of the planned QVRT between the terminus of the railroad spur on Crane Street and the Southbridge-Dudley town border in Southbridge, Massachusetts. The Site was accessible at the crossing with Sandersdale Road (Route 131), North Woodstock Road, Main Street, the terminus on Crane Street, and throughout most of the length of the former railroad located within the downtown section of Southbridge, where

the railroad crossed Foster Street, Central Street, and Hook Street. The Site was moderately vegetated with vines and overgrowth in some locations between the Route 131 crossing and North Woodstock Road, impeding traversal along the rail line in that area. The remainder of the Site was easily accessible, covered in only low vegetation, or along developed paths, including the completed 1.7-mile section of the trail between the Route 131 crossing and the Dudley town line, an approximately 1,000 foot completed section of trail from the east side of North Woodstock Road traveling west along East Main Street, and where the Site crossed through downtown Southbridge. Most leafy vegetation had defoliated at the time of the Site inspection, improving visibility of adjoining properties and decreasing visibility of the soil surface in the areas where property adjoining the Site was heavily vegetated. The Site was at a higher elevation than surrounding properties along the majority of its length, and in some isolated places was lower in elevation compared to abutting land to the southwest.

The QVRT parallels the Quinebaug River for most of its length. Two pedestrian bridges, one over Lebanon Brook and one over an unnamed tributary which fed into the Quinebaug River, were observed along the completed 1.7-mile section of trail. One bridge consisting of steel beams without decking was observed crossing over Morris Street.

Inspection Observations

Commercial and residential development was observed adjacent to the Site along much of its length. Undeveloped wooded land was observed mainly adjacent to the Site between the Route 131 crossing and Dudley town border. The following observations were made during the December 7, 2021 Site inspection:

- Rail ties were observed at various points along the trail, but the rail bed has been largely dismantled where the trail had been developed, and between the terminus of the rail line at Crane Street and at the edge of downtown Southbridge where the Site crossed Hook Street.
- Above-ground storage tanks upgradient of the Site were observed on a property between the Route 131 crossing and North Woodstock Road. The view of the tanks was obscured by the sloped topography. This appeared to be the rear of the 87 Golf Street property discussed in *Section 4.3*.
- An approximately 600-foot-long fenced-off section of land running parallel to the Site was observed extending to the east of Foster Street. The parcel appeared to be a short corridor for power lines.
- Embankment stabilization was observed between the Quinebaug River and the completed 1.7-mile section of trail, adjacent to the commercial properties at 529 Ashland Avenue.
- Located at 47 Hook Street, a series of above-ground storage tanks owned by Tasse's Oil and Propane were observed. These tanks are unlikely to affect the Site as they are hydrologically downgradient to the railroad.

- The former American Optical Manufacturing Company lens facility was observed and north of where the railway crosses Main Street. This facility was downgradient of the Site.
- A group of plastic bags filled sediment or soil-like material was located amongst a pile of old wooden planks, southeast of the bridge crossing over Morris Street. This was found at approximately the same location as where the Texas Oil Company oil store house was located on the 1965 Sanborn map, discussed in *section 4.3*. No odor or visible contamination of the bagged sediment was noticed at the time of the Site reconnaissance.
- A plastic drum with unknown contents was observed north of the railway between North Woodstock Road and Morris Street.
- Piles of various dumped material were occasionally observed along the length of the Site. Material observed includes tires, clothing, metal scraps, and assorted household waste. Some of these piles of waste seemed to indicate occupation of sections of the Site by homeless individuals.

Controlled Substances

No evidence indicating the presence or past presence of controlled substances, as defined in the Controlled Substances Act (21 U.S.C. 802), was observed at the Site during the inspection conducted for the Phase I ESA.

7 Data Gaps, Findings and Conclusions

7.1 Data Gaps

Standard Practice E1527-13 requires the identification and evaluation of data gaps, which are defined as a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.

The lack of an Owner/Key Site Manager interview constitutes a data gap, as mentioned in *Section 6.1*. It is recommended that, as planning for the rail-to-trail conversion progresses, the Town continue to correspond with the Site owner and inquire about the owner's knowledge of environmental concerns pertaining to the Site. An interview with the Site Owner is warranted to help with the identification of RECs in connection with the Site.

7.2 Findings and Conclusions

Fuss & O'Neill, Inc. prepared this Phase I ESA report in conformance with the scope and limitations of ASTM Practice E1527-13. Any exceptions to, or deletions from, this practice are described in *Appendix A* of this report.

7.2.1 Identified RECs

This assessment has revealed no evidence of RECs in connection with the Site, except for the following:

- **87 Golf Street Property** – An Enforcement Order dated April 8, 2019, was filed by the Town Conservation Commission against the owners of a property located at 87 Golf Street related to the illegal dumping of fill material from an offsite source. The fill material was pushed into wetlands adjacent to the Site and extends onto the Site within and around a portion of the Lebanon Brook. The exact source and environmental quality of the fill is unknown and the potential exists that the material has impacted the environmental quality of the Site where it has encroached.
- **Former Railroad Right-of-Way** – An out of use railroad right-of-way spans the entire length of the Site. In accordance with the MassDEP guidance discussed in *Section 3.0*, the Site most closely resembles an industrialized rail corridor. Railroad improvements and operations often included use, handling, or application of hazardous materials (i.e. petroleum, coal and fill-materials containing coal/ash, creosote, pesticides, etc.). Given the historical use of the Site, the potential exists for OHM to have impacted the environmental quality of Site. As further discussed in *Section 3*, MassDEP guidance advises that the above-listed contamination be assumed present, and that risk associated with the assumed contamination can be mitigated through implementation of best practices outlined in the guidance as an alternative to traditional subsurface investigation.

Although not identified as an REC, solid waste debris was observed dumped at multiple areas of the Site. This debris should be removed, and if any evidence of a release to soil (including staining, stressed or dead vegetation, or odors) is found, soil sampling should be considered.

Historical RECs

ASTM E1527-13 defines historical RECs (HRECs) as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). The following HRECs associated with the Site were identified.

- **Documented Releases of OHM** – As summarized in *Section 4.2*, two releases of OHM have been documented at the Site. One release consisted of arsenic and PAH in soil, attributed to application of fill and railbed materials containing coal components. The other consisted of MGP-related contaminants which migrated onto the Site and other down-gradient properties, impacting subsurface soil and groundwater quality. Response actions consisting of environmental assessment and risk characterization were performed for both of these releases. Conditions of No Significant Risk and Permanent Solution were confirmed and documented for both releases. As such, both releases were addressed to a point of regulatory closure in accordance with the MCP.

Controlled RECs

ASTM E1527-13 defines controlled CRECs (CRECs) as an REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a “No Further Action” letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). No CRECs associated with the Site were identified.

7.2.2 Business Environmental Risks

ASTM E1527-13 defines Business Environmental Risks as risks which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, but which are not RECs. The following conditions were identified in connection with the Site and may represent Business Environmental Risks:

- **Fill Material:** Soil maps of the Site indicated the presence of reworked soil and fill material. Fill material in the urbanized setting can contain coal, ash, and other materials which themselves contain hazardous materials. These conditions were documented in response to the previous on-Site release associated with RTN 2-10882, discussed in *Section 4.2*. MassDEP regulations identify a condition of “anthropogenic background” associated with areas where fill materials were used prior to 1983 and where such anthropogenic remnants may be located. MassDEP exempts hazardous materials in soil associated with coal, coal ash, and wood ash from regulatory notification (at 310 CMR 40.0317[9]) and anthropogenic background conditions associated with historic application of fill are, if properly documented, exempted from response actions under that program; however, the presence of these materials may impact soil management and worker health and safety practices during future redevelopment.

7.2.3 Potential Off-Site Concerns

No potential off-Site concerns were identified.

7.2.4 Appropriateness of Investigations

Fuss & O'Neill has followed the guidelines described in ASTM E1527-13 to identify the RECs at this Site in a manner consistent with standard practice in the industry. However, as indicated in the ASTM standard, “No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, and the practice recognizes reasonable limits of time and cost.”

In accordance with Section 12.6.1 of ASTM Standard Practice E1527-13, the appropriateness of additional investigations necessary to determine the presence or absence of identified RECs was

evaluated. Based on the opinion of the Environmental Professional, no additional investigations would be necessary to confirm that the conditions specified in *Section 7.2.1* are RECs in accordance with ASTM standards. We recommend that future rail trail development planning include interview with a representative(s) of the Site owner to ask about their knowledge of environmental concerns and assist with identification of additional RECs in connection with the Site.

7.2.5 Results of Non-ASTM Scope Investigations

Unless otherwise stated in this report, assessments for asbestos containing materials, lead-based paint or plumbing materials, radon gas, and mold were not conducted. Furthermore, we did not specifically investigate the potential for the Site to contain wetlands, endangered species, ecological resources, or historic/cultural resources. These items would likely present little risk to subsurface conditions and would not result in the identification of RECs; however, they could be liabilities especially during construction, renovation, or demolition projects. Additionally, environmental compliance or permitting issues were not considered during this investigation.

8 References

American Society for Testing and Materials, 2013. Practice E1527-13, Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process.

CDM Smith, August 2021, Periodic Review of the Temporary Solution, Dexter Russell, Inc., 44 River Street, Southbridge, MA.

GEI Consultants, Inc., February 2008, Class B-1 Response Action Outcome Partial Statement, Former Southbridge MGP Site, Southbridge, MA.

GZA GeoEnvironmental, Inc., February 2017, Periodic Review of the Temporary Solution, 11 Village Drive, Southbridge, MA.

GZA GeoEnvironmental, Inc., November 1996, Additional Phase I Site Investigation Report, Foster Street, Railroad Right-of-Way, Southbridge, MA.

Jewel Environmental Corporation, February 2013, Response Action Outcome Statement, Bridge Removal Project, N. Woodstock Rd. and E. Main Street, Southbridge, MA.

Lincoln Environmental, Inc., April 2000, Downgradient Property Status Opinion, 54 Foster Street, Southbridge, MA.

Massachusetts Department of Environmental Protection, 2014, 310 CMR 40.0000: Massachusetts Contingency Plan.

Massachusetts Department of Environmental Protection, 2007, 314 CMR 4.00: Surface Water Quality Standards.

Office of Geographic Information, Commonwealth of Massachusetts, Information Technology Division (MassGIS MassMapper); via <https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>, accessed December 2021.

USGS, 2021. TP Southbridge Quadrangle, Massachusetts, 7.5-Minute Series Topographic Map; United States Department of the Interior, U.S. Geological Survey, 2021.

USDA, 2018. United States Department of Agriculture, Natural Resources Conservation Services Soil Survey Geographic (SSURGO) Data Base, accessed December 2021.

Zen, Ean, 1983. Bedrock Geologic Map of Massachusetts; United State Department of the Interior, U.S. Geological Survey, in cooperation with the Commonwealth of Massachusetts Department of Public Works and Joseph A. Sinnot, State Geologist.

9 Limitations of Work Product

This document was prepared for the sole use of the Central Massachusetts Regional Planning Commission, the only intended beneficiary of our work. Those who may use or rely upon the report and the services (hereafter “work product”) performed by Fuss & O'Neill, Inc. and/or its subsidiaries or independent professional associates, subconsultants, and subcontractors (collectively the “Consultant”) expressly accept the work product upon the following specific conditions.

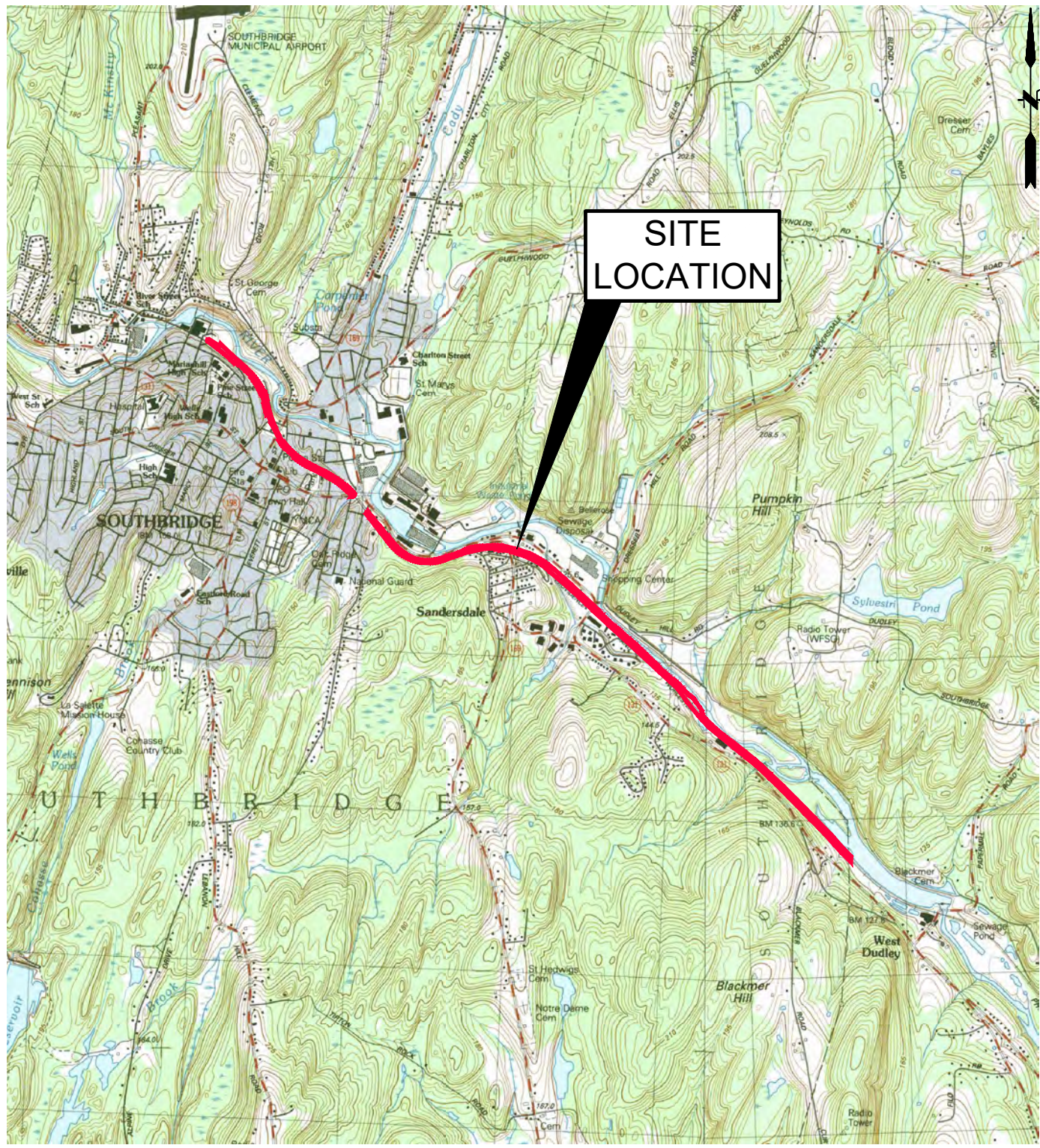
1. Consultant represents that it prepared the work product in accordance with the professional and industry standards prevailing at the time such services were rendered.
2. The work product may contain information that is time sensitive. The work product was prepared by Consultant subject to the particular scope limitations, budgetary and time constraints and business objectives of the Client which are detailed therein or in the contract between Consultant and Client. Changes in use, tenants, work practices, storage, Federal, state, or local laws, rules or regulations may affect the work product.
3. The observations described and upon which the work product was based were made under the conditions stated therein. Any conclusions presented in the work product were based solely upon the services described therein, and not on scientific or engineering tasks or procedures beyond the scope of described services.
4. In preparing its work product, Consultant may have relied on certain information provided by state and local officials and information and representations made by other parties referenced therein, and on information contained in the files of state and/or local agencies made available at the time of the project. To the extent that such files which may affect the conclusions of the work product are missing, incomplete, inaccurate, or not provided, Consultant is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, Consultant did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this project. Consultant assumes no responsibility or liability to discover or determine any defects in such information which could result in failure to identify contamination or other defect in, at or near the Site. Unless specifically stated in the work product, Consultant assumes no responsibility or liability for the accuracy of drawings and reports obtained, received, or reviewed.
5. If the purpose of this project was to assess the physical characteristics of the Site with respect to the presence in the environment of hazardous substances, waste or petroleum and chemical products and wastes as defined in the work product, unless otherwise noted, no specific attempt was made to check the compliance of present or past owners or operators of the Site with Federal, state, or local laws and regulations, environmental or otherwise.
6. If water level readings have been made, these observations were made at the times and under the conditions stated in the report. However, it must be noted that fluctuations in water levels may occur due to variations in rainfall, passage of time and other factors and such fluctuations may affect the conclusions and recommendations presented herein.

7. Except as noted in the work product, no quantitative laboratory testing was performed as part of the project. Where such analyses have been conducted by an outside laboratory, Consultant has relied upon the data provided, and unless otherwise described in the work product has not conducted an independent evaluation of the reliability of these tests.
8. If the conclusions and recommendations contained in the work product are based, in part, upon various types of chemical data, then the conclusions and recommendations are contingent upon the validity of such data. These data (if obtained) have been reviewed and interpretations made by Consultant. If indicated in the work product, some of these data may be preliminary or screening-level data and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time and other factors.
9. Chemical analyses may have been performed for specific parameters during the course of this project, as described in the work product. However, it should be noted that additional chemical constituents not included in the analyses conducted for the project may be present in soil, groundwater, surface water, sediments or building materials at the Site.
10. Ownership and property interests of all documents, including reports, electronic media, drawings and specifications, prepared or furnished by Consultant pursuant to this project are subject to the terms and conditions specified in the contract between the Consultant and Client, whether or not the project is completed.
11. Unless otherwise specifically noted in the work product or a requirement of the contract between the Consultant and Client, any reuse, modification or disbursement of documents to third parties will be at the sole risk of the third party and without liability or legal exposure to Consultant.
12. In the event that any questions arise with respect to the scope or meaning of Consultant's work product, immediately contact Consultant for clarification, explanation or to update the work product. In addition, Consultant has the right to verify, at the party's expense, the accuracy of the information contained in the work product, as deemed necessary by Consultant, based upon the passage of time or other material change in conditions since conducting the work.
13. Any use of or reliance on the work product shall constitute acceptance of the terms hereof.

Figures



File: J:\DWG\20150407\110\Environmental\Plan\Southbridge rail trail\20150407\110_LOC01_USGS.dwg Layout: FIGURE 1 Plotted: 2022-01-06 12:09 PM Saved: 2022-01-06 12:08 PM User: stroms
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REFERENCE:

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 SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS.

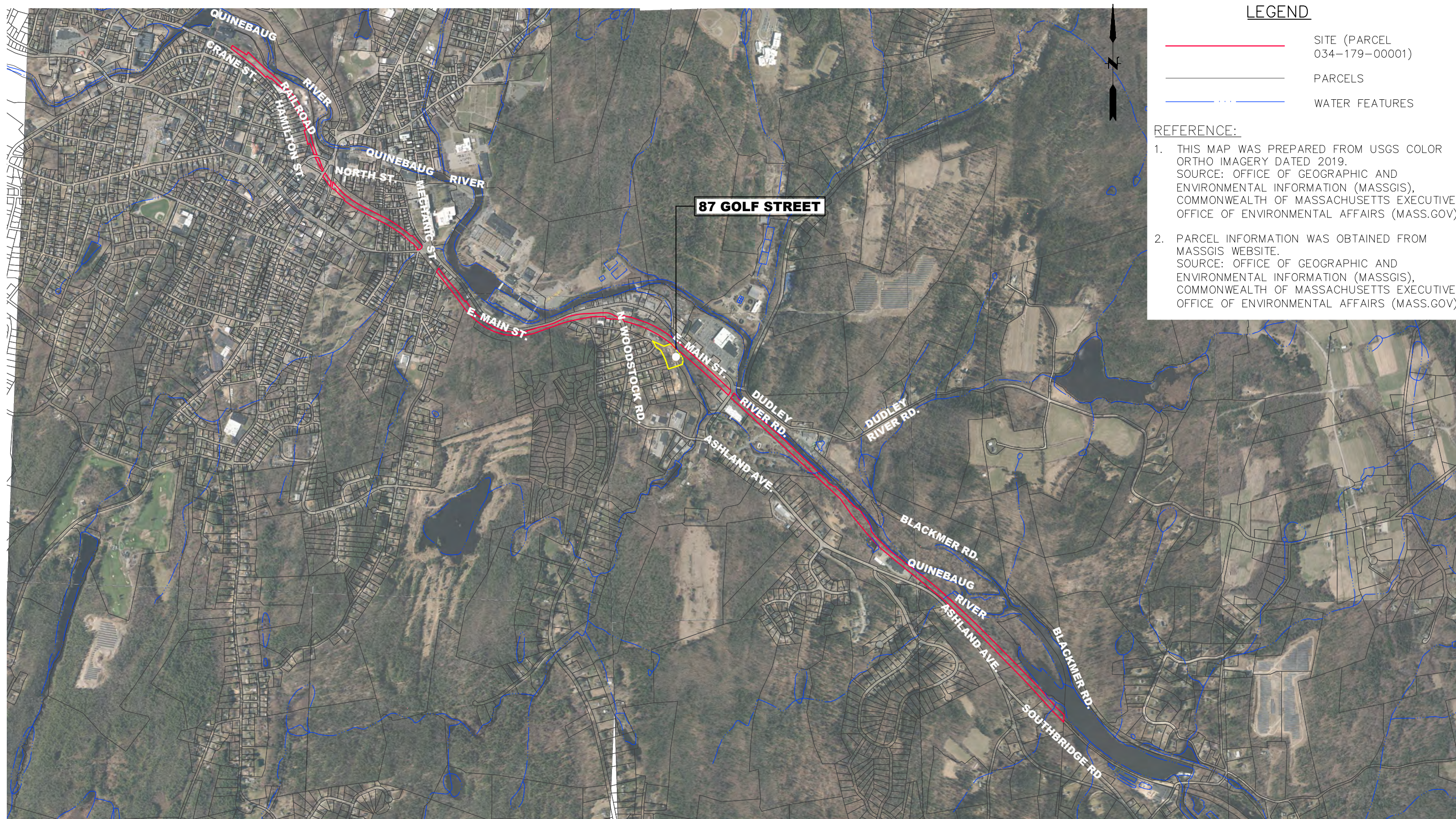


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CENTRAL MASSACHUSETTS REGIONAL
 PLANNING COMMISSION
 LOCATION MAP
 SOUTHBRIDGE RAIL TRAIL
 SOUTHBRIDGE MASSACHUSETTS

PROJ. No.: 20150407.110
DATE: NOVEMBER 2021
FIGURE 1



LEGEND

- SITE (PARCEL 034-179-00001)
- PARCELS
- WATER FEATURES

REFERENCE:

1. THIS MAP WAS PREPARED FROM USGS COLOR ORTHO IMAGERY DATED 2019. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).
2. PARCEL INFORMATION WAS OBTAINED FROM MASSGIS WEBSITE. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).

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 SOUTHBRIDGE RAIL TRAIL
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PROJ. No.: 20150407.110
 DATE: JANUARY 2022
FIGURE 2

Appendix A

All Appropriate Inquiry Scope of Work and Restrictions



ALL APPROPRIATE INQUIRY PHASE I ESA SCOPE OF WORK

Fuss & O'Neill uses ASTM Standard Practice E1527-13 as general standard for conducting Phase I ESAs. For consistency, this scope of work is generally presented based on the outline of our standard Phase I ESA report. The descriptions of the procedures and sources for obtaining the information for each section follow the section headings. As specified by Standard Practice E1527 13, the scope of work described below allows for use of professional judgment to determine the extent to which specific sources are reviewed.

Unless otherwise specified, the following items are not considered in the course of completing an ASTM E1527-13 Phase I ESA:

- Asbestos, Lead (paint/plumbing), Radon, Mold, Fluorescent Light Ballasts
- Wetlands, Ecological Resources, Historical/Cultural Resources
- Regulatory and Health & Safety Compliance
- Endangered species

These items typically present little environmental risk to the grounds of a site; however, these items may be liabilities during property transfer, regulatory audits, construction, renovation, or demolition projects.

1 Introduction

The objective of the ESA and the party that this ESA was conducted for are identified in this section.

2 Site Overview

2.1 Site Information

2.1.1 Property Location, Size of Parcel, and Site Plan - Review of USGS topographic maps, local assessor and zoning maps and property description cards, field observations and sketches, and, if available, plans provided by a contact for the Site. A site plan is included that is derived from these sources.

2.1.2 Potable Water Supply and Sewage Disposal - Query the local Department of Public Works, local Engineering Department, appropriate local utilities, and/or other local municipal sources and/or a knowledgeable site contact.

2.1.3 Adjoining Land Use - Site reconnaissance and assessor's mapping.

2.2 Physical Setting of Site

2.2.1 Geologic and Physiographic Setting - Site reconnaissance, USGS topographic maps, and available geological maps.

2.2.2 Groundwater - Site reconnaissance, USGS topographic maps, and 310 CMR 40.0000 (the Massachusetts Contingency Plan).



2.2.3 Surface Water - Site reconnaissance, USGS topographic maps, and 314 CMR 4.00 (MassDEP Surface Water Quality Standards).

2.2.4 Location of Public Water Supply Sources - Site reconnaissance and mapping available in local departments queried as part of the ESA.

2.3 Previous Environmental Investigations - Provided by the appropriate site contact or identified by other means during the course of conducting the ESA.

3 Site History

Site reconnaissance, knowledgeable site contacts, aerial photographs available from MassGIS, Sanborn fire insurance maps and street directories provided by an environmental database search service (note that street directories are reviewed at approximately five year intervals, but may be reviewed at smaller intervals for multi-tenant properties), and local municipal sources (local municipal Building Department, Engineering Department, Planning and Zoning Department, Health Department, and Fire Marshal).

4 Federal, State, and Local File Review

4.1 Summary of Regulatory Database Information

Regulatory databases specified by Standard Practice E1527 13 are obtained from an environmental database search service.

The report provided by the environmental database search service is reviewed in detail. Sites that are inferred to present a significant risk to adversely impact the Site are identified and explained within the ESA report. However, sites inferred to pose little risk to adversely impact the Site are disclaimed within the attached environmental database search report.

4.2 MassDEP File Review

Limited MassDEP file information is provided for the Site and nearby properties in an environmental database search report. Reviews of files located at MassDEP Regional offices are not conducted unless specifically requested.

If a file review is to be conducted, files for the Site and/or nearby properties are requested from the appropriate MassDEP Regional office. If available, these files are reviewed for pertinent information, which is either copied or noted.

4.3 Local File Review - Files for the local municipal Tax Assessor, Building Department, Planning and Zoning Department, Health Department, and Fire Marshal are reviewed.

5 User Provided Information - Information provided by the user as required by the practice is discussed in this section



- 6 Site Reconnaissance, Interviews and Non-Scope Considerations - Field observations the results of required interviews are discussed in this section. In addition, surveys conducted to identify non-scope considerations are addressed.
- 7 Data Gaps, Findings and Conclusions - Data gaps relevant to the identification of recognized environmental conditions are discussed. In addition, recognized environmental conditions are summarized in this section as well as recommendations for further investigation, if appropriate.
- 8 References - References used as part of the ESA are presented here.



Appendix B

Qualifications of Environmental Professionals





Qualifications of Environmental Professionals and Staff Scientists

Environmental Professionals

Employee	Title	Education	Years Experience	Licenses
Timothy Clinton	Project Manager	BS Geology MS Environmental GeoChemistry	16	CPG, LSP
Matthew Kissane	Environmental Geologist	BS Geology MS Earth Sciences	9	--

Staff Scientists

Employee	Title	Education	Years Experience	Licenses
Clifford Otis	Environmental Engineer	BS Environmental Engineering	1	EIT

BS: Bachelor of Science CPG: Certified Professional Geologist PG: Professional Geologist MS: Master of Science
 BA: Bachelor of Arts LSP: Licensed Site Professional (Massachusetts) MA: Master of Arts
 PE: Professional Engineer (RI and MA) CNU-A: Accredited Member – Congress for the New Urbanism EIT: Engineer in Training

Appendix C

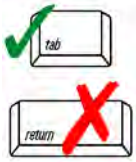
Municipal File Information





A. Violation Information

Important:
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



This Enforcement Order is issued by:

Southbridge Conservation Commission 4/08/2019
 Conservation Commission (Issuing Authority) Date

To:

Scott Lazo
 Name of Violator
36 Ellis Road Southbridge, MA 01550
 Address

1. Location of Violation:

Town of Southbridge
 Property Owner (if different)
87 Golf Street
 Street Address
Southbridge 01550
 City/Town Zip Code
044 027
 Assessors Map/Plat Number Parcel/Lot Number

2. Extent and Type of Activity (if more space is required, please attach a separate sheet):

Deposition of material adjacent to and within a wetland, without approval from the Conservation Commission.

B. Findings

The Issuing Authority has determined that the activity described above is in a resource area and/or buffer zone and is in violation of the Wetlands Protection Act (M.G.L. c. 131, § 40) and its Regulations (310 CMR 10.00), because:

the activity has been/is being conducted in an area subject to protection under c. 131, § 40 or the buffer zone without approval from the issuing authority (i.e., a valid Order of Conditions or Negative Determination).



B. Findings (cont.)

the activity has been/is being conducted in an area subject to protection under c. 131, § 40 or the buffer zone in violation of an issuing authority approval (i.e., valid Order of Conditions or Negative Determination of Applicability) issued to:

Name _____ Dated _____

File Number _____ Condition number(s) _____

The Order of Conditions expired on (date): _____ Date _____

The activity violates provisions of the Certificate of Compliance.

The activity is outside the areas subject to protection under MGL c.131 s.40 and the buffer zone, but has altered an area subject to MGL c.131 s.40.

Other (specify): _____

C. Order

The issuing authority hereby orders the following (check all that apply):

- The property owner, his agents, permittees, and all others shall immediately cease and desist from any activity affecting the Buffer Zone and/or resource areas.
- Resource area alterations resulting from said activity shall be corrected and the resource areas returned to their original condition.
- A restoration plan shall be filed with the issuing authority on or before 5/08/19
Date

for the following:

Removal of all materials within the buffer area and the wetland located at the toe of the slope at property located at 87 Golf Road.

The restoration shall be completed in accordance with the conditions and timetable established by the issuing authority.



C. Order (cont.)

Complete the attached Notice of Intent (NOI). The NOI shall be filed with the Issuing Authority on or before:

_____ Date

for the following:

No further work shall be performed until a public hearing has been held and an Order of Conditions has been issued to regulate said work.

The property owner shall take the following action (e.g., erosion/sedimentation controls) to prevent further violations of the Act:

The violator shall install erosion / sedimentation controls at the toe of slope and along the edge of visible wetlands to prevent erosion of deposited material into the wetland.

Failure to comply with this Order may constitute grounds for additional legal action. Massachusetts General Laws Chapter 131, Section 40 provides: "Whoever violates any provision of this section (a) shall be punished by a fine of not more than twenty-five thousand dollars or by imprisonment for not more than two years, or both, such fine and imprisonment; or (b) shall be subject to a civil penalty not to exceed twenty-five thousand dollars for each violation". Each day or portion thereof of continuing violation shall constitute a separate offense.

D. Appeals/Signatures

An Enforcement Order issued by a Conservation Commission cannot be appealed to the Department of Environmental Protection, but may be filed in Superior Court.

Questions regarding this Enforcement Order should be directed to:

Eric Rumsey

Name

508-764-5402

Phone Number

Monday - Wednesday 8AM-4PM; Thursday 8AM-8PM; Friday 8AM-12PM

Hours/Days Available

Issued by:

Southbridge Conservation Commission

Conservation Commission

Conservation Commission signatures required on following page.



D. Appeals/Signatures (cont.)

In a situation regarding immediate action, an Enforcement Order may be signed by a single member or agent of the Commission and ratified by majority of the members at the next scheduled meeting of the Commission.

Signatures:

_____	_____
_____	_____
_____	_____
_____	_____

Signature of delivery person or certified mail number

CRANE STREET

Location CRANE STREET

Mblu 034/ 179/ 00001/ /

Acct# 1629

Owner COMMONWEALTH OF MASSACHUSETTS

Assessment \$2,700

PID 1629

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2021		\$2,700	\$2,700

Owner of Record

Owner COMMONWEALTH OF MASSACHUSETTS
Co-Owner MASS HIGHWAY DEPT
Address 10 PARK PLAZA ROOM 6160
BOSTON, MA 02116-3973

Sale Price \$0
Certificate
Book & Page 34530/0037
Sale Date 09/02/2004
Instrument 1E

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
COMMONWEALTH OF MASSACHUSETTS	\$0		34530/0037	1E	09/02/2004
PROVIDENCE & WORCESTER RR CO	\$0	1	5958/4149		

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: \$0
Replacement Cost
Less Depreciation: \$0

Building Attributes	
Field	Description
Style:	Vacant Land

Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Cndtn	
Rec Room Area	
Bsmt Garage	
Num Park	
Fireplaces	
Extra Kitchen	
Fndtn Cndtn	
Basement	

Building Photo



(<http://images.vgsi.com/photos/SouthbridgeMAPhotos/\A00\01\00\24.jpg>)

Building Layout

(ParcelSketch.ashx?pid=1629&bid=1629)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 9240

Land Line Valuation

Size (Acres) 0.03

Description MASS HIGHWAY
Zone CC
Alt Land Appr No
Category

Frontage
Depth
Assessed Value \$2,700

Outbuildings

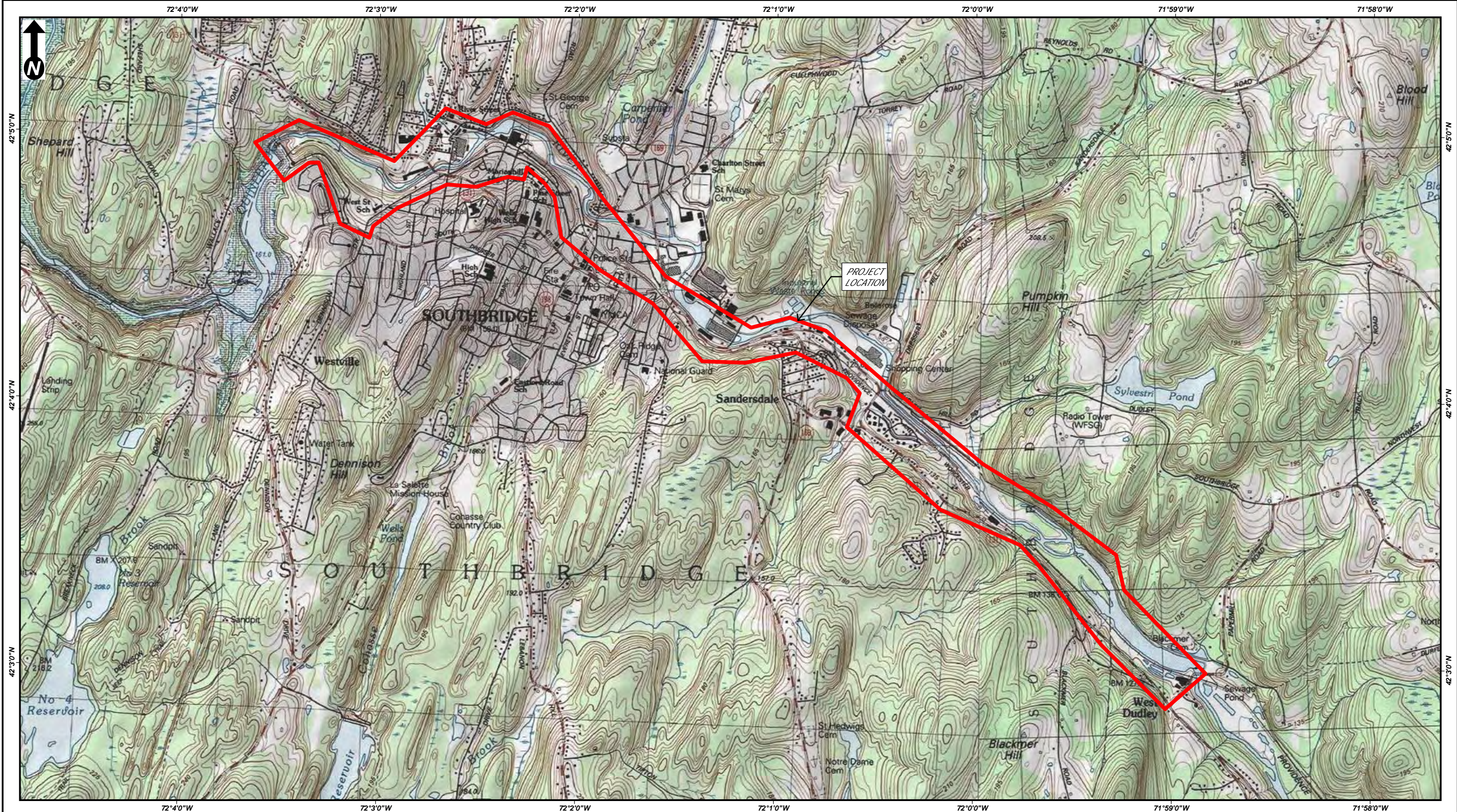
Outbuildings	<u>Legend</u>
No Data for Outbuildings	

Valuation History

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$0	\$2,700	\$2,700
2020	\$0	\$2,700	\$2,700
2019	\$0	\$2,600	\$2,600

Appendix E

Appendix E: USGS Locus Map



Scale: 1:24,000
1 inch = 2,000 feet

0 2,000 4,000
Feet

(Page size: 11 X 17)

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

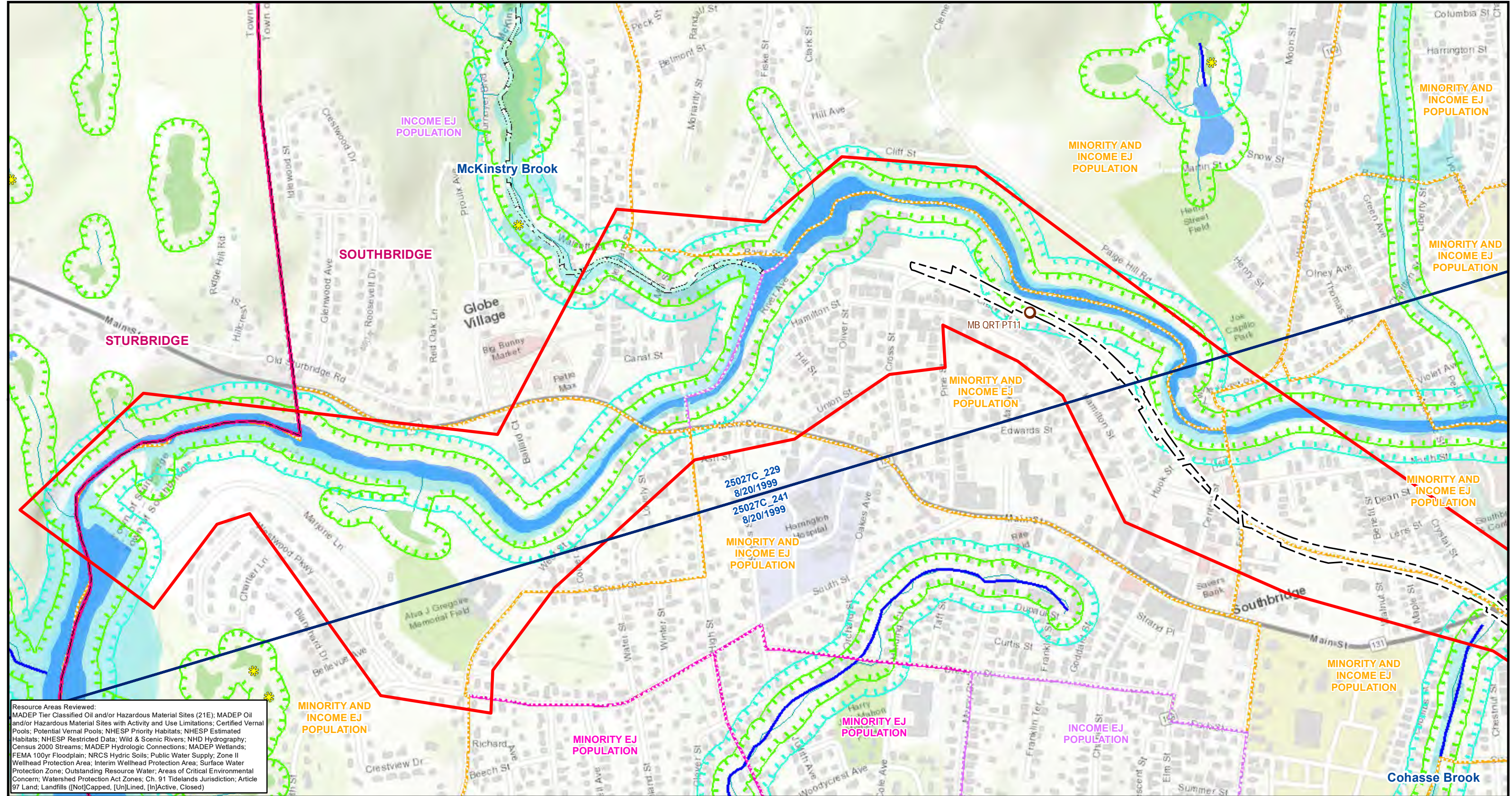
**USGS Site Location Map
Southbridge, MA**

Source: 2013
National Geographic
Society, i-cubed

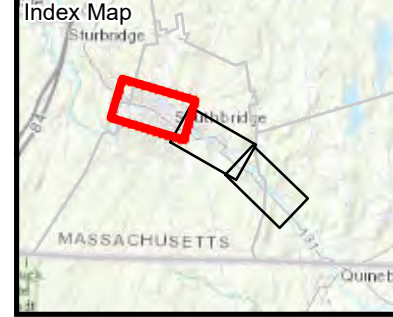


Appendix F

Appendix F: Environmental Resources Map with FEMA Floodplain



Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E); MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations; Certified Vernal Pools; Potential Vernal Pools; NHESP Priority Habitats; NHESP Estimated Habitats; NHESP Restricted Data; Wild & Scenic Rivers; NHD Hydrography; Census 2000 Streams; MADEP Hydrologic Connections; MADEP Wetlands; FEMA 100yr Floodplain; NRCS Hydric Soils; Public Water Supply; Zone II Wellhead Protection Area; Interim Wellhead Protection Area; Surface Water Protection Zone; Outstanding Resource Water; Areas of Critical Environmental Concern; Watershed Protection Act Zones; Ch. 91 Tidelands Jurisdiction; Article 97 Land; Landfills ([No]Capped, [Un]Lined, [In]Active, Closed)



Legend

Study Area	200ft Riverfront Area	Photo Point	
MADEP Hydrologic Connections	FEMA 100yr Floodplain*	Railroad Right-of-Way	
Perennial Stream	Potential Vernal Pools	FEMA Base Index	
Coldwater Fisheries Resources	NHESP Priority Habitats	Environmental Justice Populations 2020	
MADEP Wetlands*	NHESP Estimated Habitats	Minority	Income
MADEP Open Water*	Approximate Pipeline	Minority and Income	Town Boundary
100ft Buffer to Wetlands & Streams			

1 inch = 600 feet
 0 300 600
 Feet
 *Indicates Layers Set to Transparency

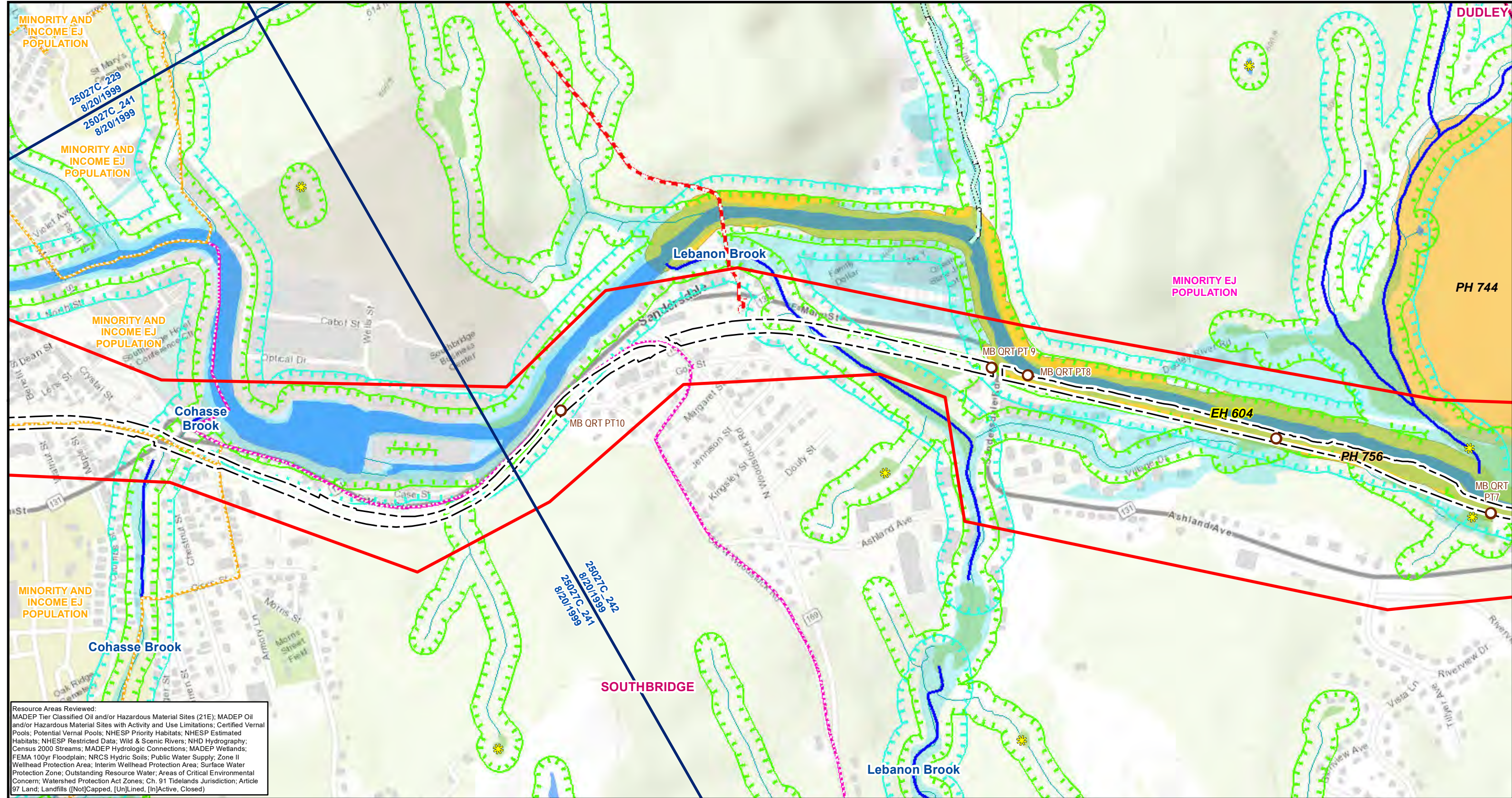
QUINEBAUG RIVER TRAIL PERMITTING EVALUATION

Environmental Resources Map

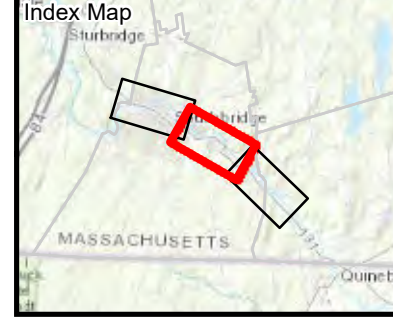
Sturbridge & Southbridge, MA
 Page 1 of 3

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E); MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations; Certified Vernal Pools; Potential Vernal Pools; NHESP Priority Habitats; NHESP Estimated Habitats; NHESP Restricted Data; Wild & Scenic Rivers; NHD Hydrography; Census 2000 Streams; MADEP Hydrologic Connections; MADEP Wetlands; FEMA 100yr Floodplain; NRCS Hydric Soils; Public Water Supply; Zone II Wellhead Protection Area; Interim Wellhead Protection Area; Surface Water Protection Zone; Outstanding Resource Water; Areas of Critical Environmental Concern; Watershed Protection Act Zones; Ch. 91 Tidelands Jurisdiction; Article 97 Land; Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)



Legend

Study Area	200ft Riverfront Area	Photo Point
MADEP Hydrologic Connections	FEMA 100yr Floodplain*	Railroad Right-of-Way
Perennial Stream	Potential Vernal Pools	FEMA Base Index
Coldwater Fisheries Resources	NHESP Priority Habitats	Environmental Justice Populations 2020
MADEP Wetlands*	NHESP Estimated Habitats	Minority
MADEP Open Water*	Approximate Pipeline	Minority and Income
100ft Buffer to Wetlands & Streams	Town Boundary	

1 inch = 600 feet
 0 300 600
 Feet
 *Indicates Layers Set to Transparency

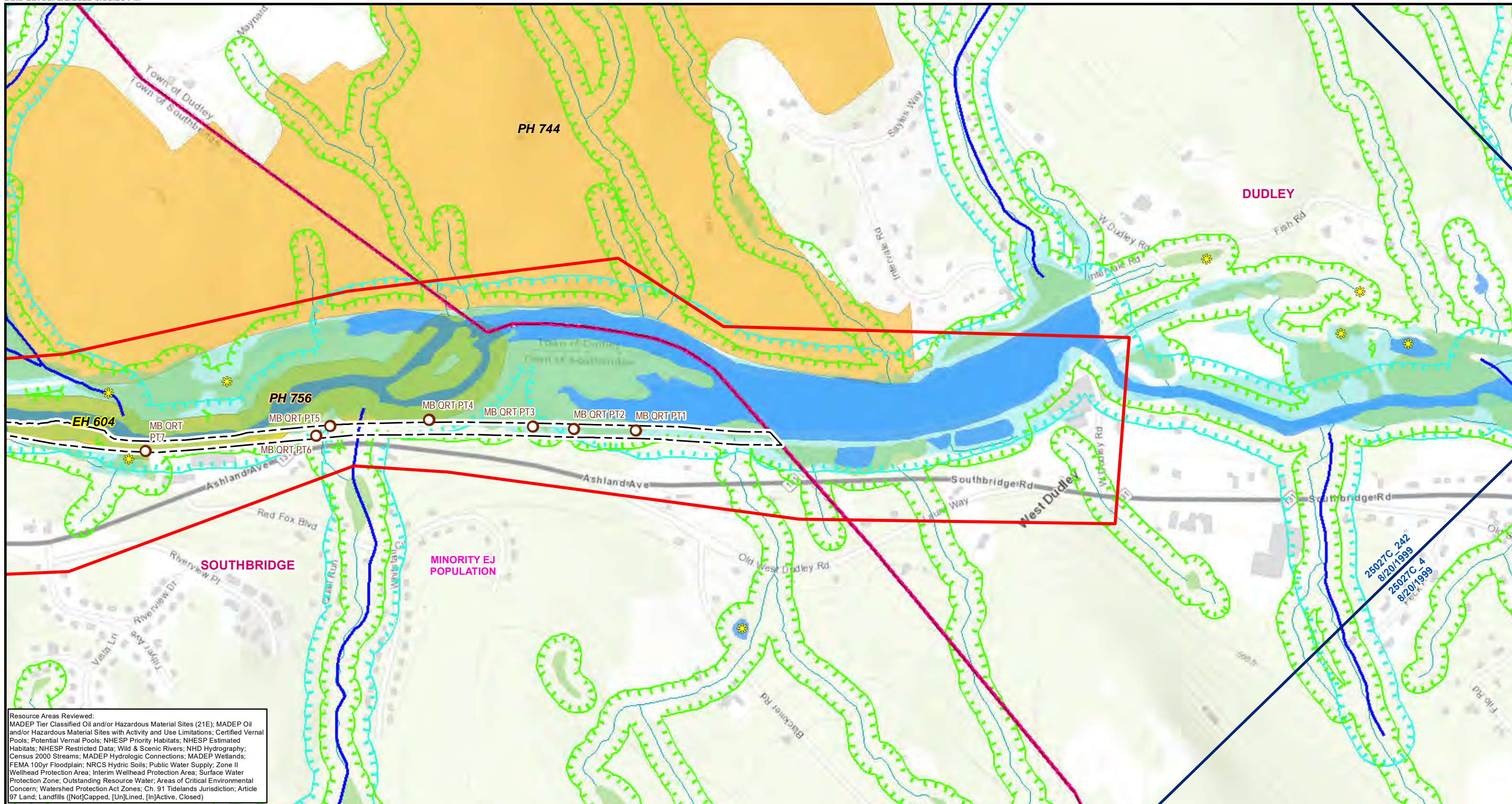
QUINEBAUG RIVER TRAIL PERMITTING EVALUATION

Environmental Resources Map

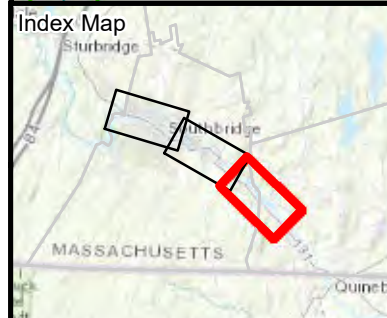
Southbridge, MA
 Page 2 of 3

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E); MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations; Certified Vernal Pools; Potential Vernal Pools; NHESP Priority Habitats; NHESP Estimated Habitats; NHESP Restricted Data; Wild & Scenic Rivers; NHD Hydrography; Census 2000 Streams; MADEP Hydrologic Connections; MADEP Wetlands; FEMA 100yr Floodplain; NRCS Hydric Soils; Public Water Supply; Zone II Wellhead Protection Area; Interim Wellhead Protection Area; Surface Water Protection Zone; Outstanding Resource Water; Areas of Critical Environmental Concern; Watershed Protection Act Zones; Ch. 91 Tidelands Jurisdiction; Article 97 Land; Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)



Legend

Study Area	200ft Riverfront Area	Photo Point
MADEP Hydrologic Connections	FEMA 100yr Floodplain*	Railroad Right-of-Way
Perennial Stream	Potential Vernal Pools	FEMA Base Index
Coldwater Fisheries Resources	NHESP Priority Habitats	Environmental Justice Populations 2020
MADEP Wetlands*	NHESP Estimated Habitats	Minority
MADEP Open Water*	Approximate Pipeline	Town Boundary
100ft Buffer to Wetlands & Streams		

1 inch = 600 feet
 0 300 600
 Feet
 *Indicates Layers Set to Transparency

QUINEBAUG RIVER TRAIL PERMITTING EVALUATION

Environmental Resources Map

Southbridge & Dudley, MA
 Page 3 of 3

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Appendix G

Appendix G: Quinebaug Valley Rail Trail Feasibility Study



Quinebaug Valley Rail Trail Feasibility Study

FEBRUARY 2022



PREPARED FOR
Town of Southbridge

PREPARED BY
 **BSC GROUP**





Acknowledgments

Town of Southbridge

Michael F. McCall; Town Manager

Peg (Margaret) Dean, MPA; CDBG Grant Coordinator, Economic Development & Planning Department

Heather Blakeley; Director of Public Works

Eric Rumsey; Town Planner & Conservation Agent

Michael Brunelle; Recreation Director

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John D. Jovan

Scott S. Lazo

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Jacquelyn M. Ryan

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Joseph E. Daou, Council Member

Scott S. Lazo, Council Member

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Jeanette Tozer, AICP; Senior Planner

Matt Burne, PWS; Senior Ecologist



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1. Introduction	7
2. Existing Conditions	9
3. Recommendations	15
Trail Sections	15
Typical Trail Sections	25
4. Cost Summary	27
5. Environmental Analysis	29
6. Permitting Strategy	39
7. Implementation Strategy	41

Introduction



Project Overview

The Town of Southbridge is proposing to develop its portion of the Quinebaug Valley Rail Trail (QVRT) which will traverse through Town from the Westville Dam recreation area at the northwest side of Town to the Dudley Town Line to the southeast. To confirm the viability and cost of such a project, this study has been prepared to evaluate existing conditions and propose the most feasible alignment of this new multi-use path (bicycle and pedestrian) through the Town of Southbridge. The QVRT will bring many health and economic benefits to Southbridge, as well as provide a key link to a larger regional bike trail network for Southern Worcester County including a connection into the State of Connecticut.

This study analyzed the feasibility of placing the multi-use path along an old abandon rail bed that once connected downtown Southbridge to Dudley to the south. However, this rail bed never extended north to Sturbridge. Therefore, this feasibility study proposes options to connect the rail trail from downtown Southbridge to an existing trail network in the Westville Dam property, owned by the Army Corps of Engineers, which connects into Sturbridge.

This feasibility study concludes that the development of the QVRT through Southbridge is certainly feasible and does not involve any unique impediments. The proposed alignment of the Southbridge portion of the QVRT will be approximately 5 miles in length, including 21,000 linear feet along the old abandon rail line, and 5,250 linear feet on-road either as a separated path or short sections of “share the road” bicycle accommodation. This approach for the Southbridge portion of the QVRT development will be consistent with many other trails throughout the Commonwealth.

Key Features of the Trail

There are several key benefits the QVRT will provide including:

- A connection through the entirety of Southbridge enabling the overall QVRT to serve as a true regional rail trail system through multiple communities

- Connections to key destinations including:
 - › The Dudley trailhead and points south
 - › The Central Business District
 - › The Route 131 commercial corridor
 - › The Globe Village Area which is currently being revitalized
 - › The American Optical complex which is also being revitalized
 - › The Optical Heritage Museum
 - › Town Common
 - › West Street School and Recreation Area
 - › Westville Dam Recreation Area
 - › Existing residential neighborhoods and multi-family complexes
 - › Proposed new revitalization projects
 - › Restaurants and shops
- The shared-use path will bring a healthy living amenity to the community as a path for walking and biking, and a means of getting to local services and commerce without the need for a car thus reducing air and noise pollution.
- The project has been proposed for over 20 years, is recommended in many planning reports, and has broad community support.
- The total estimated construction cost for the preferred alignment of the rail trail ranges from \$3.5 to \$5.1 million dollars (depending on surface material preferences), which is consistent with industry averages up to approximately \$1 million per mile for a rail trail
- The shared-use path alignment is in close proximity to the Quinebaug River and within environmentally regulated areas, but a permitting analysis suggests that the expected permitting requirements are reasonable and attainable
- A preliminary Phase One analysis of soil conditions along the abandoned rail bed has revealed typical contamination found along old railroad corridors that can be successfully addressed using Massachusetts Department of Environmental Protection (DEP) Best Management Practices for the remediation or mitigation of any identified contaminants along the rail corridor.

In conclusion, the preferred route of the QVRT though the Town Southbridge is feasible. There are a few options for trail alignment, trail surface materials and access points. All these details can be worked out through a community input process once funds are secured for rail trail design, permitting and construction.

Considerations

Some of the details associated with project implementation include:

- The abandoned rail bed is currently owned by the Massachusetts Department of Transportation (MassDOT) and that agency is prepared to agree to a long-term (99-year) lease with the Town to enable the Town to develop a multi-use rail for public use



The existing rail bed provides a dynamic setting for the proposed rail trail. The trail will connect woodland areas with more urban and suburban areas.



Existing Conditions



Site Analysis

The Town intends to establish their segment of the Quinebaug Valley Rail Trail (QVRT), a multi-use trail from Sturbridge through Southbridge to the Dudley town line. Both Sturbridge and Dudley have trail elements, and the Southbridge portion will provide a key connection making the entire trail network a true regional trail system. A portion of the trail alignment will be along an abandoned railbed, currently owned by the Massachusetts Department of Transportation (MassDOT). MassDOT has determined that this trail connection is a priority trail corridor in the state. There are also sections of the trail that may have to be on-road and/or deviate from the existing abandoned railbed.

This feasibility for the Southbridge portion of the QVRT included a site analysis which looked at conditions along the abandon rail bed, abutting conditions, and conditions along roadways where the trail will be along the road.

Existing Conditions and Trail Application

A good portion of the project area is in an urban mill-town environment and follows the Quinebaug River from Southbridge's older Globe Village manufacturing area south to the town line at Dudley. With the majority of the proposed trail utilizing the existing roads and railbed, topography is fairly flat already. However, when the rail bed was originally developed, it required some filling or cutting into existing grades resulting in some areas of grade change to get up to or down to the rail bed from abutting roadways and property. The feasibility study addresses these grade changes where access to the trail is proposed.

The Quinebaug River is a natural resource that historically generated the development of many businesses and mills in the town. Sawmills, gristmills, and textile mills in the 18th century led to the Town becoming a known hub for the manufacture of optical products. This boom in manufacturing started to gradually decline after the second world war, with the largest plant, American Optical, shutting down by 1984. This decline left the area with a large deficit in local jobs for residents and has contributed to a low median household income and a high percentage of residents living below the poverty line.

Protecting the Quinebaug River banks and associated wetlands and floodplains will be a primary concern in permitting the project. The river's bank and associated wetlands are very evident at the toe of slope of the existing railbed. Portions of the trail are located in areas shown as 100-year floodplain on FEMA FIRM maps, but closer analysis of the Base Flood Elevation and the railbed elevations indicates that trail improvement work will require minimal alteration of the floodplain and will not present an undue compensatory flood storage challenge.



The Quinebaug River is a key feature of the Southbridge area, and provides recreation opportunities for residents and visitors.

Floodplain and wetland boundaries shown on the maps have been taken from the Town of Southbridge, MassGIS, and USGS using ArcView software. No wetland flagging was done as part of this study. BSC has evaluated wetland boundaries from the Quinebaug Valley Rail Trail and Slope Stabilization plans from MASSDOT, which showed flagging for wetlands along the railroad bed and existing trail between the Ashland Ave (Rte. 131) crossing and Dudley town line. The railbed is above Base Flood Elevation per FIRM Map for this entire stretch of trail with the exception of the final 150 feet (approximately). Work on this section of trail should not result in changes to the flood storage capacity of the floodplain associated with the Quinebaug River in this southeastern section of the project.

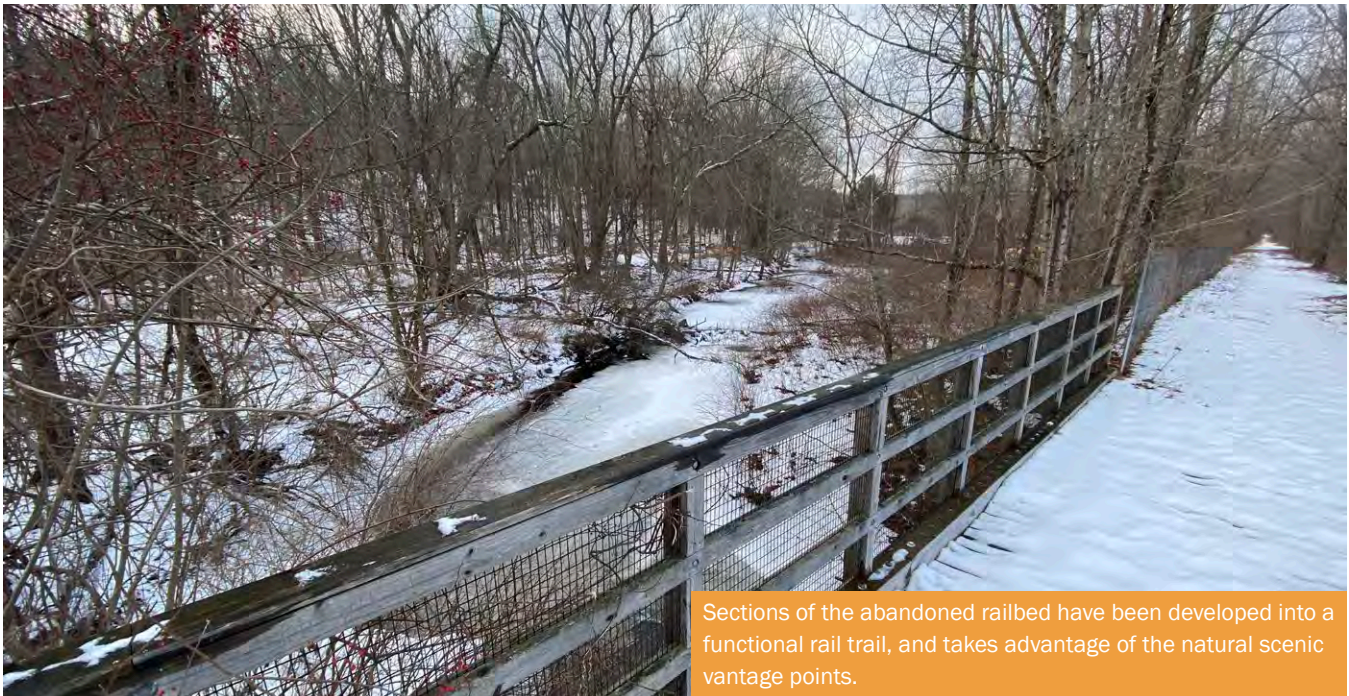
Existing Railbed Condition

The existing abandoned railbed begins along the north side of River Street at the intersection with Cross Street and continues southerly for approximately 177 feet to the intersection with Crane Street. Along this section of abandoned railbed, approximately 130 feet of old track/ties remain in place. From this point the abandoned railbed continues along the north side of Crane Street and behind several buildings including the Optical Heritage Museum, for approximately 2170 feet where it intersects Hook Street at-grade. The old track/ties have been removed along this section.

Then the abandoned railbed continues southerly for approximately 250 feet where it intersects Central Street at grade. The old track/ties remain in place along this section. After that the abandoned railbed continues southerly for approximately 190 feet where it intersects Foster Street at grade. The old track / ties remain in place along this section.



The abandoned railbed runs fairly consistently through the project area. Conditions vary as certain sections have been renovated over time to facilitate recreation in the area.



Sections of the abandoned railbed have been developed into a functional rail trail, and takes advantage of the natural scenic vantage points.

From this point the abandoned railbed continues southerly for approximately 2000 feet to the intersection with Main Street at the rotary which is below the grade of the railbed. At one point there was a bridge carrying the railroad over Main Street but has since been removed. The old track/ties remain in place along this section. Then, from the location of the old railroad bridge the abandoned railbed continues southerly for approximately 325 feet to the intersection with Morris Street which is below the grade of the railbed. There is an existing steel girder bridge carrying the railroad over Morris Street supported on mortared stone abutments located either side of Morris Street. The old track/ties remain in place along this section.

From this point, the abandoned railbed, with old track/ties that remain in place, continues southerly for approximately 2600 feet to the intersection with Old North Woodstock Road where it connects to a short section of an existing 12' wide paved path that carries the path through the intersection. This portion of the path was installed when the intersection was recently upgraded. This paved section of the path runs parallel to Route 169/131 for approximately 715 feet where it crosses the signalized

intersection of Route 169/131 and continues as a paved path for another 285 feet where it reconnects to the existing abandoned railbed.

After that the abandoned railbed continues easterly for approximately 2000 feet to the intersection with Route 131 at grade. The old track/ties remain in place along this section. Along this stretch, there is an existing mortared stone arch culvert at Lebanon Brook, located 850 feet east of the Old Woodstock Road intersection. From this point, the abandoned railbed continues southeasterly for approximately 7500 feet to the Dudley Town Line. There are two existing steel girder bridges with wood decking within this section that were installed by the Town. The first is located approximately 1862 feet east of the intersection with Route 131 and was installed in the year 2011 and the second located approximately 4350 feet east of the intersection with Route 131 and was installed in the year 2012.

Existing Bridges

There are several existing bridges within the study corridor including vehicular (on-road), railroad (off-road) and pedestrian/bicycle (off-road):

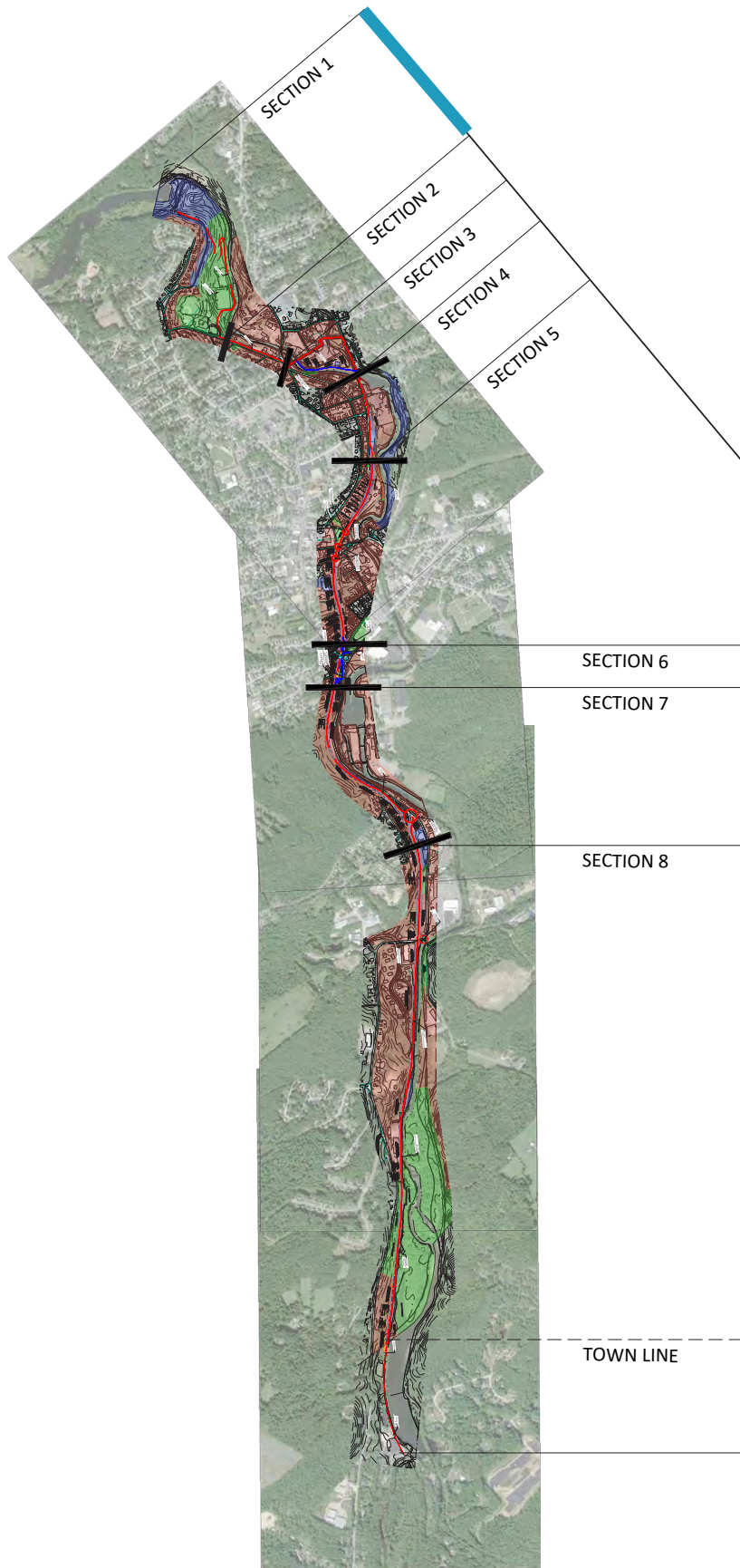
- Mill Street – there are two roadway bridges in this section:
 - › The bridge closer to Main Street carries two lanes of vehicular traffic with hot mix asphalt sidewalk along either side (continuous east side) over the Quinebaug River. This bridge is currently under design for specific repairs.
 - › The bridge closer to River Street carries two lanes of vehicular traffic with cement concrete sidewalk either side over the McKinstry Brook. This bridge is currently under design for specific repairs.
- River Street:
 - › The River Street bridge is located between Mill Street and River Avenue and carries two lanes of vehicular traffic with cement concrete sidewalk either side over the Quinebaug River
- Morris Street:
 - › Located above the roadway and along the existing abandoned railbed, this is a steel girder bridge with the track ties and rails still in place.
- Abandoned Railbed, southern section:
 - › Located approximately 1862 feet east of the intersection with Route 131 and constructed by the Town (DPW) in the year 2011, this single span girder pedestrian bridge structure supports a wood deck and railing (Refer to Appendices for plans).
 - › Located approximately 4350 feet east of the intersection with Route 131 and constructed by the Town (DPW) in the year 2012, this second pedestrian bridge structure is also a single span girder with wood deck and railing (Refer to Appendices for plans).

On-Road Conditions

There are several streets within the study corridor. Following is a description of these streets starting from the north.

- Marjorie Lane:
 - › Classified as local with a paved width of approximately 24 feet that supports bi-directional vehicular travel, this road provides access to several residents and serves as the primary entrance to the Westville Dam recreation area and trail head. There is an existing 700-foot-long walking trail that connects Marjorie Lane to the Westville Dam Trail and eventually the athletic fields behind the West Street Elementary School.
- West Street:
 - › Classified as urban minor arterial or rural major collector with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides access to the West Street Elementary School and the athletic fields. Construction documents have been prepared for the reconstruction of West Street. As the result of this feasibility study, the design of West Street has been modified to accommodate a shared-use path along the north side of the roadway from Main Street to West Street School. This shared-use path was added to the West Street project because it provides a key connection from the Mill Street on-street portion of the QVRT to West Street School and the existing trail from West Street School to Westville Dam.
- Mill Street:
 - › Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel along much of its length with sections restricted to one-way vehicular travel and a sidewalk along at least one side, this road provides a connection from the West Street/Main Street intersection to River Street.

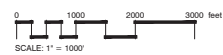
- River Street:
 - › Classified as local with a paved width of approximately 30 feet that supports bi-directional vehicular travel and on-street parking and sidewalk along at least one side, this road provides a connection from Mill Street to Crane Street.
- Crane Street:
 - › Classified as local with a paved width of approximately 35 feet that supports bi-directional vehicular travel and provides a connection to the abandoned railbed.
- Hook Street:
 - › Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Central Street:
 - › Classified as urban minor arterial or rural major collector with a paved width of approximately 35 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Foster Street:
 - › Classified as local with a paved width of approximately 28 feet that supports bi-directional vehicular travel and a sidewalk along one side that crosses the abandoned railbed at-grade.
- Proposed Hook Street to Foster Street intersection improvements:
 - › Construction documents are being prepared to improve vehicular, pedestrian and bicycle circulation through the current configuration and alignments of Hook, Larochelle, Central and Foster streets. The new roadway and intersection design for this area includes elements to provide safe and improved flow of pedestrian and bicycles from Hook Street to Foster Street as a key component of the QVRT in downtown Southbridge. Project improvements include crossing signals, streetscape improvements geared towards bike and pedestrian use, a small green space alongside the rail trail and within the downtown business district, signage, and connections to abutting sidewalks and retail areas. Existing public parking lots in the area will also serve as trailhead parking for the rail trail.
- Main Street:
 - › Classified as rural minor arterial or urban principal arterial with a paved width of approximately 30 feet that supports bi-directional vehicular travel and a sidewalk either side. There once was a railroad bridge over Main Street at this location but it was removed decades ago.
- Morris Street:
 - › Classified as local with a paved width of approximately 20 feet with vertical stone abutment walls either side that support an existing steel girder bridge and the abandoned railbed over the roadway. This road supports bi-directional vehicular travel and has a height restriction.
- East Main Street (Route 169/131):
 - › Classified as rural minor arterial or urban principal arterial with a paved width that varies from 32-35 feet that supports bi-directional vehicular travel with a sidewalk along one side. The intersection of Route 169 and 131 is controlled by fully actuated traffic signals.
- North Woodstock Road (Route 169):
 - › Classified as urban minor arterial or rural major collector with a paved width of 33 feet with a sidewalk along one side that supports bi-directional vehicular travel.



REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022



Recommendations

Trail Sections



The study corridor is approximately 5 miles in length from the Westville Dam Recreation Area to the Dudley town line and utilizes both on-road and off-road trail elements. For the purpose of this feasibility study, this entire corridor has been divided into 8 sections to better describe the proposed treatment of the rail trail in each section. A construction cost estimate was also developed for each section for comparison purposes.

The existing conditions plans of the study corridor were developed utilizing MassGIS

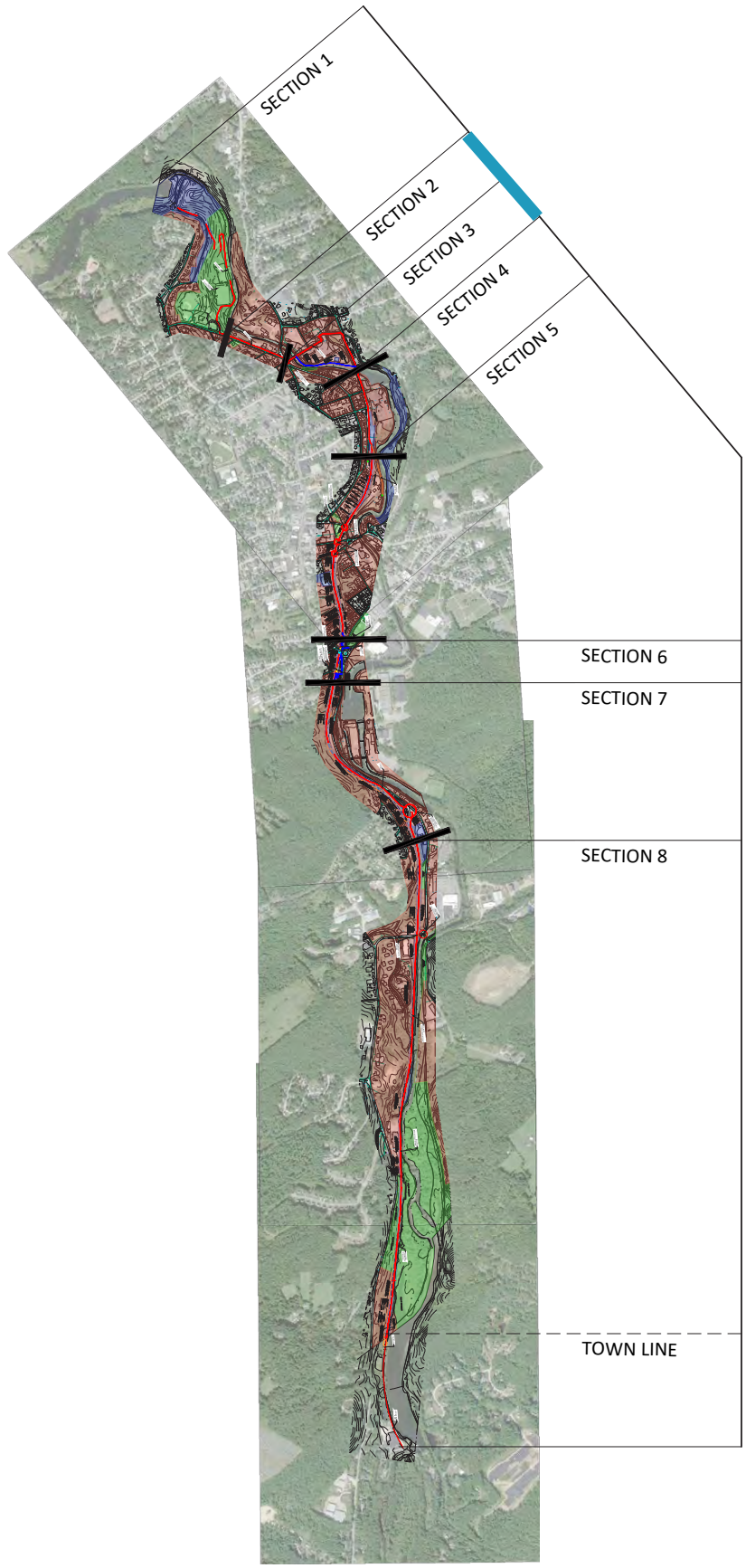
information, supplemented by GIS data provided by the Town of Southbridge. The Town provided additional information including bridge as-built plans, traffic count and crash data, traffic signal as-built plans, various traffic impact studies and future development proposals. BSC also contacted the Massachusetts Department of Transportation (MassDOT) who provided existing railroad track plans for the entire corridor.

Section 1: Westville Dam to West Street



The first section begins at the Westville Dam parking areas, which will provide a valuable connection to existing walking trails, picnic areas, and stunning views.

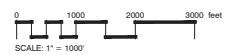
The westernmost section of trail begins at Westville Dam visitor center, which is owned and operated by the U.S. Army Corps of Engineers. In addition to flood control, this facility also supports passive walking trails and recreation for the general public. The upper viewing area of the dam is connected to the lower area along the Quinebaug River via a portion of Marjorie Lane and two existing walking trails that eventually connects to the athletic fields located behind the West Street Elementary School travels along an existing drive up the hill to West Street. The total length of this section is approximately 3,800 feet. The QVRT will connect to this existing trail.



REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022



Section 2: West Street from School Entrance to Main Street

This section begins at the West Street Elementary School driveway entrance and continues easterly along West Street to the intersection with Main/Hamilton/Mill Street. The trail along this section will consist of a 8'-10' wide paved path along the side of West Street for approximately 1,300 feet. To enable this portion of the trail to be installed, the entire width of West Street needs to be reconstructed to shift the vehicular travel lanes to along the addition of the trail along one side of the roadway.



West Street has enough space to include a multi-use trail adjacent to the roadway.



Mill Street has the potential to be retrofitted to include the new multi-use trail, providing a connection to businesses in the area.

Section 3: Mill/River St. from West St. to the River Street Bridge

This section of the trail begins at the intersection of West Street and Main Street and connects to River Street. There is a main trail route and an alternate trail route available for this section.

The main trail route travel would be on-road down Mill Street and then turning right to continue east down River Street until the next section at the River Street bridge which crosses the Quinebaug River. The total length of this section would be approximately 1,950 feet. The trail would be located along one side of both Mill Street and River Street.

The alternate route is primarily off-road. This option also starts down Mill Street but then turns right after the Mill Street bridge, and travels along the Quinebaug River until it meets with the River Street bridge. The total length of this section would be approximately 1,400 feet and would require a new pedestrian bridge over McKinstry Brook which feeds into the Quinebaug River.

The following parcels may be impacted:

- 62 Mill Street; Mill Street Realty, Inc.; 034-146-00001
- Mill Street Rear; Mill Street Realty, Inc.; 034-147-00001
- 60 Mill Street; EKW Realty, LLC.; 034-149-00001
- 30 Mill Street; MDO Jr. Inc.; 034-152-00001



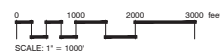
A second trail option provides an off-road connection, ducking behind the existing mill buildings and connecting to the River Street bridge.



REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022



Section 4: River Street from River Ave to Cross Street

This section continues from the River Street Bridge east to Crane Street. In this section the trail would be located along the side of the roadway. At Crane Street the trail moves off road and connects to the existing railbed. The total length of this section is approximately 1,500 feet.



The River Street Bridge provides a convenient way to cross the Quinebaug River.



There is enough space along River Street to accommodate a multi-use trail along the roadway.

Section 5: Crane Street from Cross Street to Main Street (Rotary)

Beginning along the north side of Crane Street, the trail follows the existing abandoned railbed for approximately 4000 feet, with at-grade crossings at Hook Street, Central Street and Foster Street and ending at the rotary.

The Town is currently preparing designs to reconfigure the area from Hook Street to Foster Street to include geometric, roadway, sidewalk, signalization, drainage and a Rail Trail new pocket park that will be reviewed/constructed by MassDOT as part of the STIP. This project will incorporate the portion of the new trail that will continue through this updated roadway configuration to provide clear and safe bicycle and pedestrian circulation through this area as part of the QVRT network.



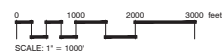
This section follows the rail-bed and there are several roadway crossings along this section. The crossings will need to have new safety features installed to increase pedestrian safety.



REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022



Section 6: Main Street (Rotary) to Morris Street

The rotary area provides a vital connection from the proposed trail that is elevated 15'-20' above the roadway and with key destinations including the Town Common and the American Optical complex located adjacent to the roadway in this area. To help accommodate the at-grade trail connections in this area, the Town has proposed specific safety improvements at the rotary including installation of a new pedestrian operated beacon.

There are two possible options to bring the trail through this "Main Street Rotary" area at this location:

- Continue the proposed trail easterly and over Main Street via a new single-span pedestrian bridge
- Re-grade the existing abandoned railbed to provide an ADA-compliant trail that connects to Main Street at-grade either as a linear (i.e. along the railbed) alignment or switchback.

The second option will be built in any case, as connections from the rail bed down to the amenities in this area are key. Residents from the abutting neighborhood, as well as citizens who will be moving into old American Optical buildings being rehabilitated for residential use will be able to access the trail at this point. In addition, during events at the Town Common, residents will be able to safely walk or bike to the Common via the rail trail.



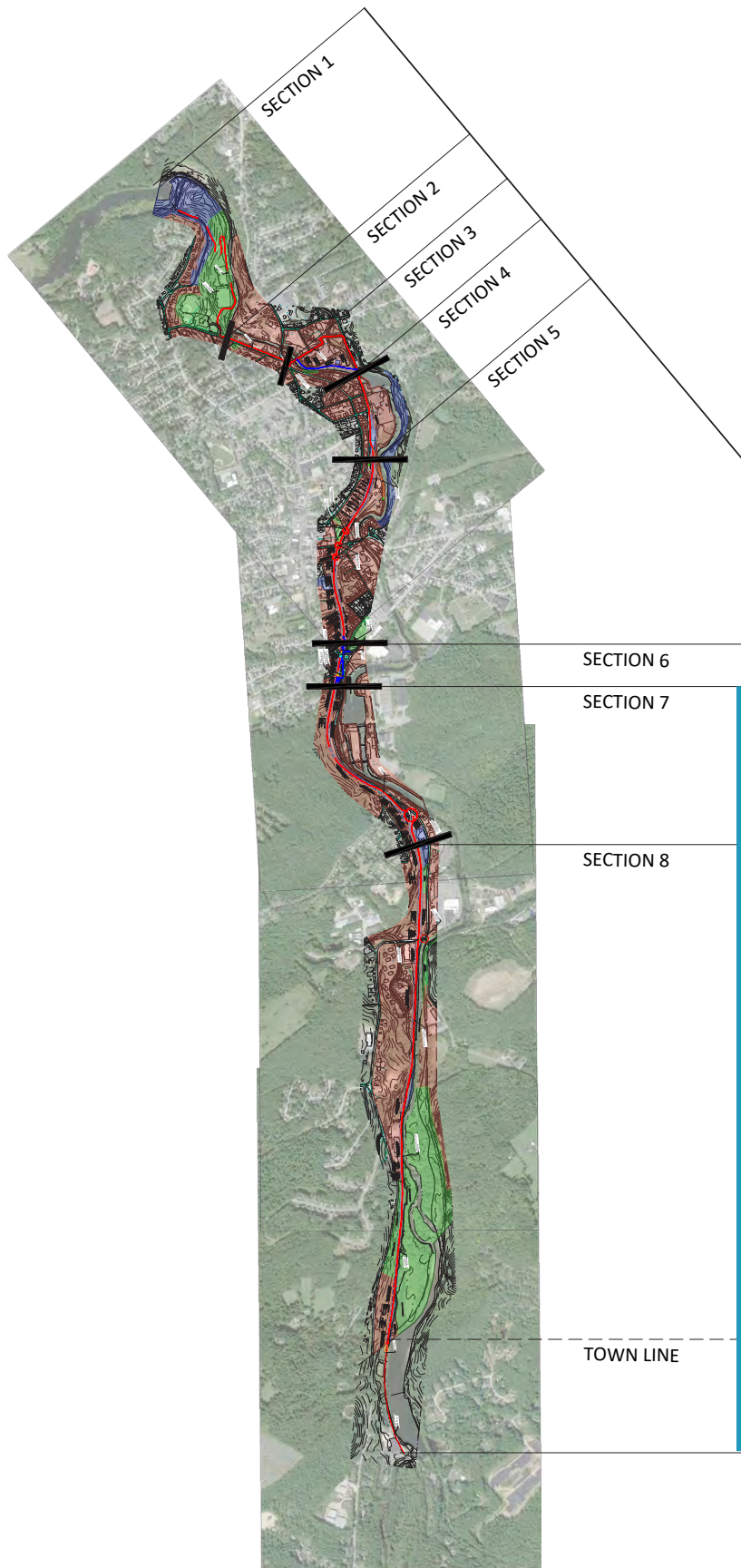
There are two proposed options to connect the rail trail at the rotary crossing; either a pedestrian bridge or at-grade crossing only.



The trail will be built across the existing crossing at Morris Street. There is not much space for pedestrian access at this location.



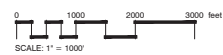
The elevated rail-bed will provide the proposed trail with good views.



REPORT SECTIONS - Overall View

QUINEBAUG VALLEY RAIL TRAIL EXT. - SOUTHBRIDGE, MA

JANUARY 18, 2022



Section 7: Morris Street to Route 131

This section starts at the rotary area located southeast of the Town Common. After crossing Main Street, the trail will continue approximately 2,300 feet along the existing railbed. This will connect to a recently completed section of trail which has been built at the Route 169/131 intersection at Old Woodstock Road. The total length of this section is approximately 3,700 feet.



The proposed trail will be built along the existing rail-bed through more wooded areas.



The proposed trail will connect to the newly completed section along Route 131.

Section 8: Route 131 to Dudley Town Line

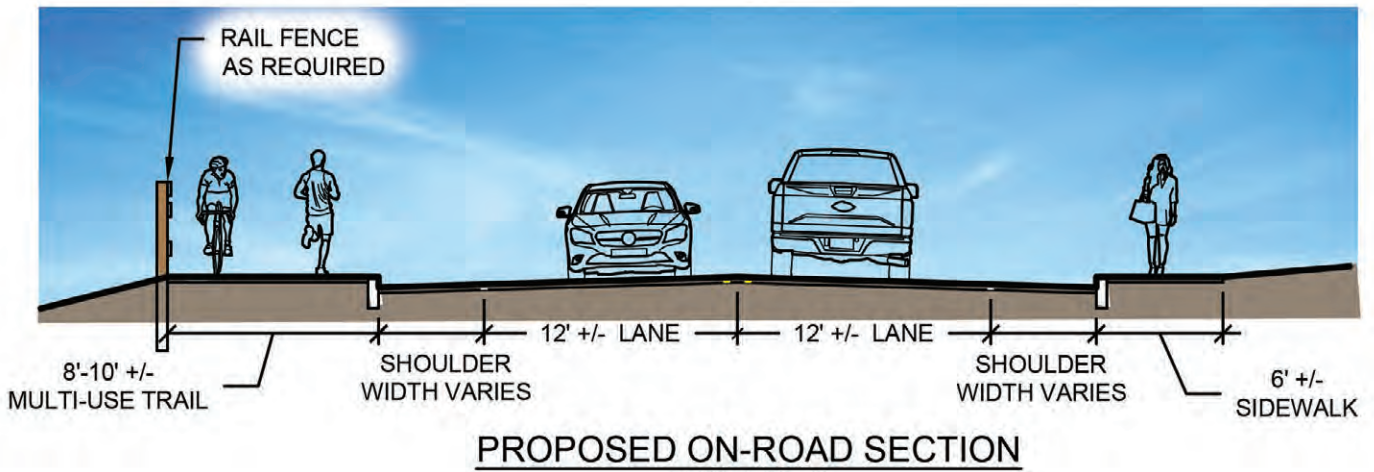
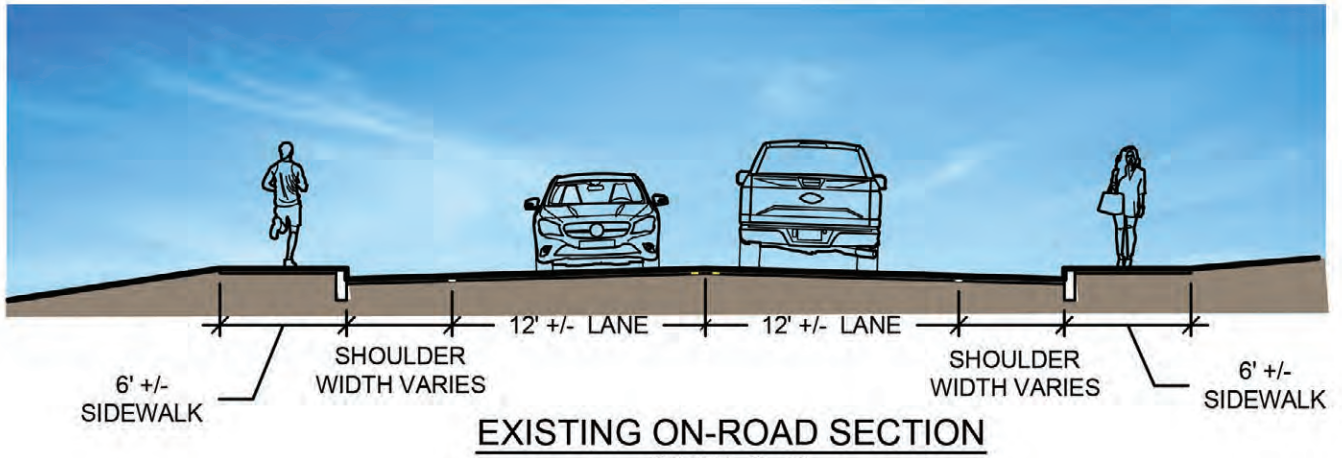
The final connection starts at the existing trail segment constructed through the Route 131 / Old Woodstock Road intersection and continues east down the existing railbed property. After the second Route 131 / East Main Street crossing, the trail continues east along the existing railbed property to the Town of Southbridge / Town of Dudley line. A small portion of this section of the trail is currently under construction by MASSDOT to repair an erosion problem, After the town line, the trail connects to the existing Dudley trail which travels east to the Quinebaug Park and River Trail / West Dudley Road Trailhead. Approx. 9,500 to Town Line



Very little work will be required to finish the last section of the proposed rail trail since it has been partially completed by MassDOT.

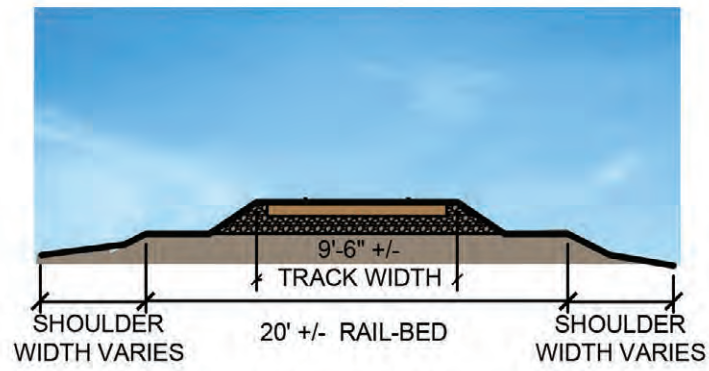


The proposed trail will connect to the previously completed section of trail at the Dudley Town Line.

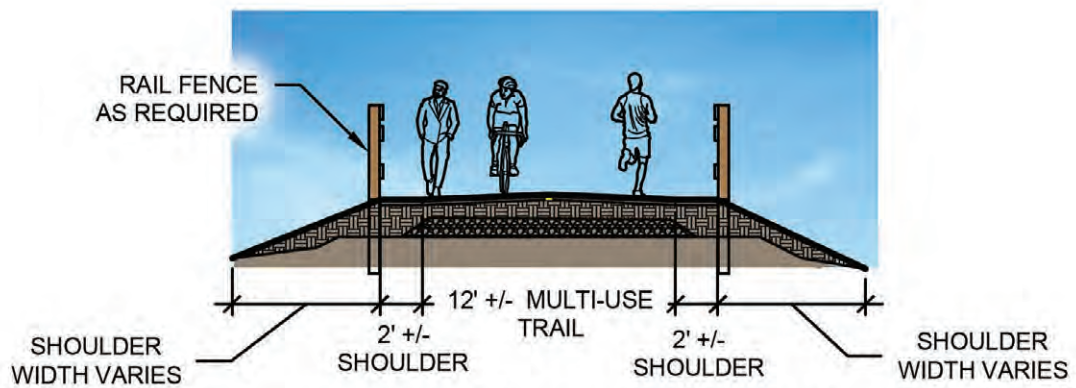




Typical Trail Sections



EXISTING RAIL-BED SECTION



PROPOSED RAIL-BED SECTION





Cost Summary

Estimated Construction Costs

The following order-of-magnitude construction costs were developed for the likely preferred trail route (Refer to Appendices for cost breakdown):

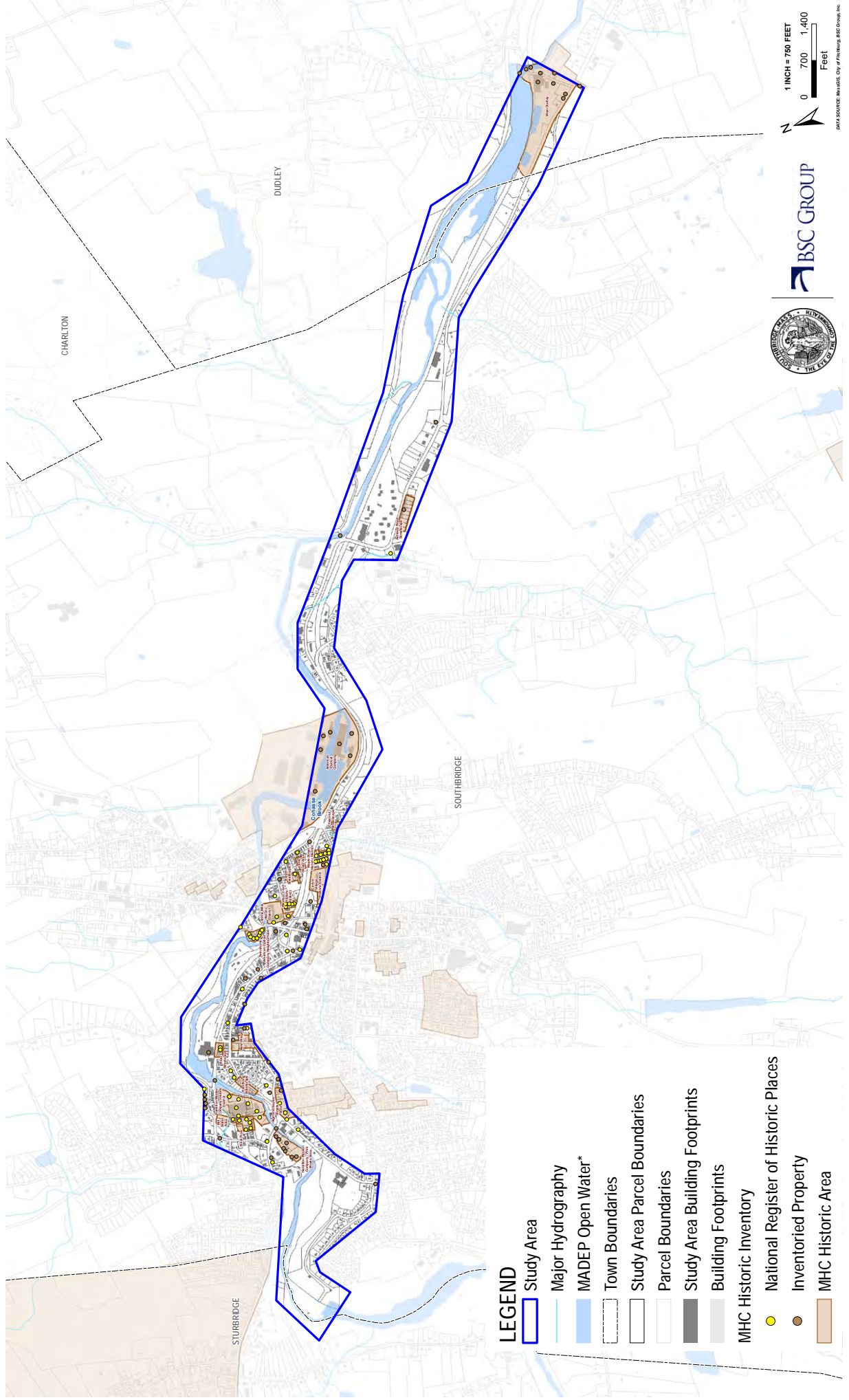
SOUTHBRIDGE - QUINEBAUG VALLEY RAIL TRAIL - COST SUMMARY							
Section	Limit	Construction Cost*	Cost included under other projects	Entity	Local Match		
					In-Kind (Clearing & Grubbing)	Cash	Source
1A	Dam to Fields Via Marjorie Ln & Exist. Trail	\$ 401,982.45			-		
1B	Fields Parking Lot to West Street	\$ 84,033.31			\$ 5,148.07		DPW
2	West Street from School Entrance to Main St.	\$ 149,787.59	\$ 149,787.59	Town**	\$ -		
3	Main Street to River Avenue Via Mill & River St.	\$ 264,750.60			\$ -		
4	River/Crane St. from River Avenue to Cross St.	\$ 97,889.16			\$ -		
5A	Abandoned Railbed from Cross St. to Hook St.	\$ 255,616.11			\$ 27,799.59		DPW
5B	Abandoned Railbed from Hook St. to Foster St.	\$ 312,000.00	\$ 312,000.00	MassDOT	\$ -		
5C	Abandoned Railbed from Foster St. to Main St.	\$ 193,594.59			\$ 20,592.29		DPW
6	Abandoned Railbed from Rotary to Morris St.	\$ 665,512.08			\$ 3,088.84		DPW
7	Abandoned Railbed from Morris St. to Rte 131	\$ 702,055.93			\$ 47,150.26		DPW
8	Abandoned Railbed from Rte 131 to Dudley TL	\$ 344,510.94			\$ 77,221.07		DPW
Subtotal =		\$ 3,471,732.77	\$ 461,787.59		\$ 181,000.12		
Construction Contingency (20%)		\$ 694,346.55	\$ 46,178.76				
Construction Administration (15%) =		\$ 520,759.92	\$ 46,178.76				
Design (12%) =		\$ 416,607.93	\$ -				
Cash Match						\$ 400,000.00	
Costs Included in Other Projects			\$ 554,145.11				
Estimated Total Project Cost =		\$ 5,103,447.17					

*Includes 3% Mobilization & 5% Police Details

** - includes CDBG and Water/Sewer Enterprise and Chapter 90 funding

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

HISTORIC RESOURCES



Environmental Analysis



Historic and Archaeological Resources

The project area primarily consists of an urban mill-town environment and follows the Quinebaug River, with the majority of the proposed trail utilizing the existing roads and an abandoned railbed, currently owned by the Massachusetts Department of Transportation (MassDOT). As a result, historic sites are present in the vicinity of the project.

Based on a review of the Massachusetts Cultural Resource Information System (MACRIS), the Massachusetts Historical Commission’s online database of historic properties and areas in the Commonwealth, the proposed trail traverses six (6) historic districts listed in the National Register of Historic Places:

- Centre Village Historic District
- Windsor Court Historic District
- Maple Street Historic District
- Twinehurst American Optical Company Neighborhood
- Hamilton Woolen Company Historic District
- Central Mills Historic District

Due to the impacted area being limited to existing roads and an abandoned railbed, no direct or indirect impacts to historic or archaeological resources are anticipated. In accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), consultation with the Massachusetts State Historic Preservation Office will be performed during the permitting process. In addition, the following Tribal Historic Preservation Officers (THPO) and Tribal Leaders may be consulted:

Stockbridge-Munsee Community of Mohican Indians (THPO)

- 86 Spring St, Williamstown, MA 12180
- (413) 884-6029

Wampanoag Tribe of Gay Head-Aquinnah (THPO)

- 20 Black Brook Road, Aquinnah, MA 02535
- (508) 645-9265 x175

Nipmuc Nation Tribal Council Inc.

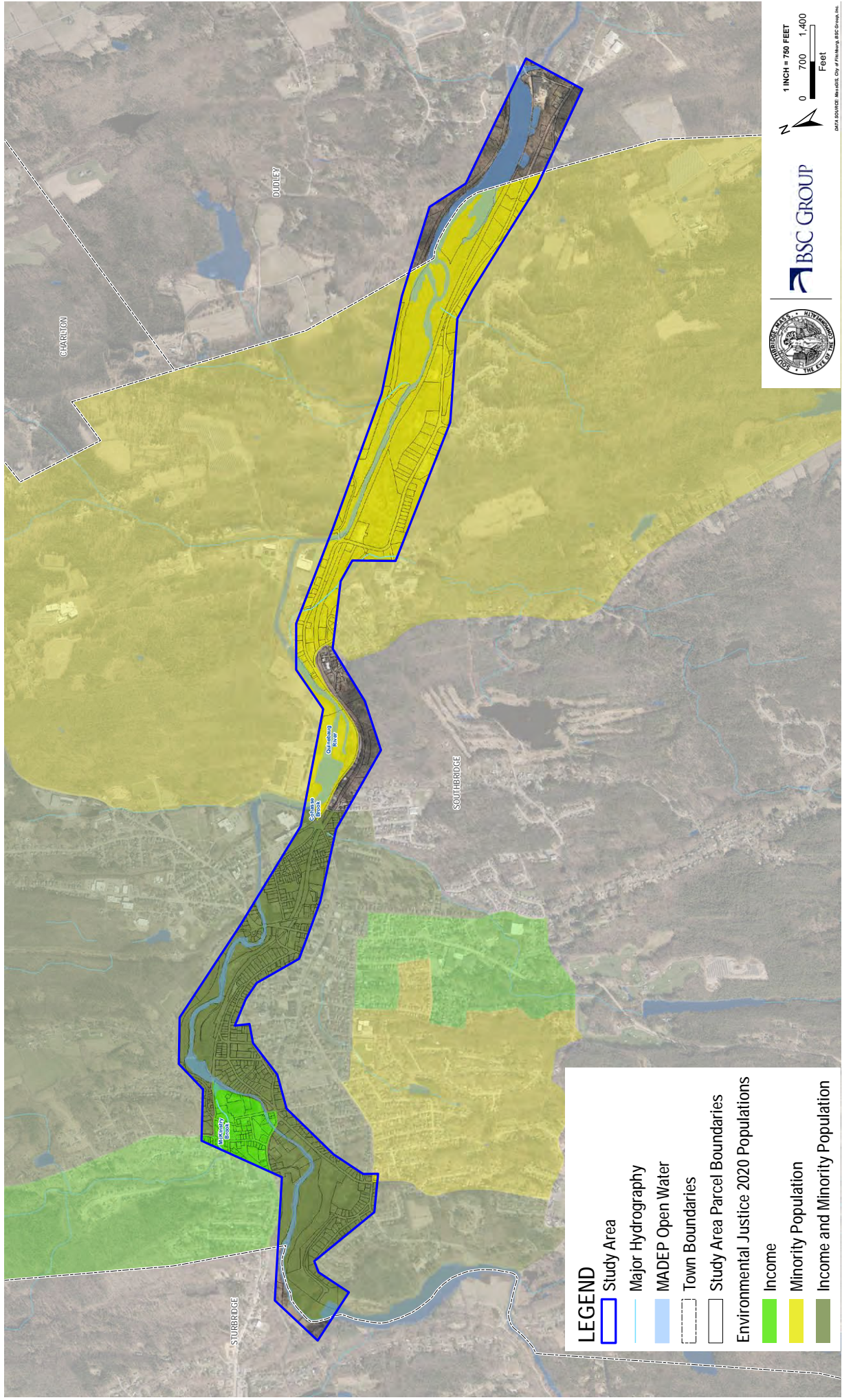
- 25 Main Street South Grafton, MA 01560
- (774) 317-9138

Mohegan Community & Government Center

- 13 Crow Hill Road, Uncasville, CT 06382
- (800) 664-3426

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

ENVIRONMENTAL JUSTICE POPULATIONS



LEGEND

- Study Area
- Major Hydrography
- MADEP Open Water
- Town Boundaries
- Study Area Parcel Boundaries
- Environmental Justice 2020 Populations
- Income
- Minority Population
- Income and Minority Population

1 INCH = 750 FEET
 0 700 1,400
 FEET

BSC GROUP

DATA SOURCE: NANTUCKET, City of Planning BSC Group, Inc.

Hazardous and Toxic Substances

A significant amount of hazardous or toxic waste is not anticipated to be produced by the proposed project.

Once constructed, no significant amount of solid waste is anticipated to be produced by the project facilities. Any solid waste generated from trail users will be removed by the Town of Southbridge. Some existing materials along the current rail bed, such as remaining rails and crushed stone, will either be removed and recycled, such as the iron rails, or recycled and reused as part of the proposed trail construction and amenities.

As a part of the project, existing hazardous / toxic materials and contamination will be handled as per Massachusetts Department of Environmental Protection Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails, included in the Appendix.

Excerpts from those guidelines relative to design, construction and post-construction are as follows:

Design Guidelines to Reduce Exposure

While developing the design for the trail, the design engineer or architect should follow these guidelines in order to reduce potential exposures.

- Within the tread way 10 and in areas designated for recreational use along the trail (such as rest areas, picnic areas, and playgrounds), eliminate contact with potentially contaminated soil by implementing one or more measures, as appropriate:
 - › Place potentially contaminated soil under pavement or an equivalent layer of compacted stone dust
 - › Place potentially contaminated soil under at least 12 inches of clean fill and mark with a geosynthetic barrier immediately above the potentially contaminated soil
- › Remove and appropriately dispose of potentially contaminated soil off-site.
- › Replace with clean material (soil, stone dust, wood chips, etc.) to establish the path and maintain grade.
- Outside of the tread way, control contact with potentially contaminated soil by implementing one or more measures to minimize or eliminate contact with potential residual contamination, including:
 - › Design landscaping, including the nature, location, and density of plantings, that channels recreational users of the trail to the tread way, disrupts the creation of informal tread ways (such as single track trails) and directs users away from potentially contaminated soil
 - › Create areas of congregation, such as benches, rest areas, and scenic areas, that draw recreational users of the trail and encourage congregation away from potentially contaminated soil
 - › Install signs informing users of upcoming congregation areas and/or advising users to remain on the path
 - › Stabilize the soil through plantings, grading, or other erosion control measures
 - › Install guardrails, curbing, or fences in areas to encourage users to stay the tread way
 - › Implement other design features that would minimize or eliminate contact with residual contamination in the soil
- The design should identify areas where potentially contaminated soil will be removed and areas within the corridor where such soils can be safely stored temporarily so that the Construction Contractors can re-use as much material on-site as possible.

During Construction

The following BMPs presume the trail construction includes excavation, movement, placement and grading of soil. Trail construction activities that involve no movement of soil may be carried out with the application of standard dust control measures, such as spraying soil with water.

The following guidelines should be followed during construction involving soil grading and excavation and be incorporated into the construction bid documents in order to ensure the proper handling of soils during trail construction:

- Hire an independent environmental monitor or task existing staff to oversee the Construction Contractor¹¹. The monitor will:
 - › Verify that construction-related plans and training are in place before construction begins
 - › Oversee all excavation
 - › Visually inspect material that will be moved
 - › Ensure proper management of soil along the right-of-way and the implementation of BMPs
 - › During construction, the environmental monitor should be present whenever known contaminated soil will be excavated and should inspect construction-related BMPs several times each week
- Minimize or eliminate exposure of construction workers to potentially contaminated soil:
 - › Prepare site-specific soil management and health and safety plans
 - › Have employees and subcontractors complete a safety-training program covering the potential hazards associated with working with contaminated soil likely to be present along a rail line, before excavation work begins
- › Educate employees and subcontractors in identifying contaminated soil and on handling and disposal procedures for contaminated soil
- › Hold regular meetings to discuss and reinforce the health and safety procedures
- › Prevent visible dust during excavation, transportation, and placement operations
- › Implement dust control measures, such as spraying soil with water, during excavation or grading operations. Exercise caution to prevent soil spillage during transport.
- Minimize or eliminate exposure of adjacent residents and curious trespassers to potentially contaminated soil:
 - › Prevent visible dust during excavation, transportation, and placement operations
 - › Implement dust control measures, such as spraying soil with water, during excavation or grading operations. Exercise caution to prevent soil spillage during transport
 - › Install temporary signs and/or security fence to surround and secure areas where potentially contaminated soil may pose an Imminent Hazard to human health.
 - › Avoid temporary stockpiling of potentially contaminated soils. Take the following precautions stockpiling, as necessary:
 - › Identify long-term stockpile locations that are away from residences, schools or playgrounds
 - › Cover the stockpile with plastic sheeting or tarps to prevent dust generation and erosion
 - › Install a berm, hay bales, and/or silt fences around the stockpile to prevent runoff from leaving the area
 - › Do not stockpile in or near storm drains or watercourses
 - › Clean-up materials should be staged near the storage area

- Minimize or eliminate the migration of potentially contaminated soil off-site:
 - › Protect gutters, storm drains, catch basins, and other drainage system features on the site with hay bales and/or silt fences during construction. They should be cleaned following the completion of site work.
 - › Prevent visible dust during excavation, transportation, and placement operations. Implement dust control measures, such as spraying soil with water, during excavation or grading operations.
 - › Exercise caution to prevent soil spillage during transport.
 - › Stabilize exposed areas of potentially contaminated soil and prevent run-off.
- Prevent new leaks and spills and notify DEP, as appropriate, if they occur
- Transport and dispose potentially contaminated soil in accordance with the applicable rules and regulations of the United States Department of Transportation (USDOT), the United States Environmental Protection Agency (USEPA), and the Massachusetts Department of Environmental Protection (MADEP) (the specifications for the off-site management of contaminated soil supersede the procedures outlined in this BMP).

Post- Construction

- Establish a protocol to ensure that future workers performing maintenance or construction within the right-of-way are made aware of the need for appropriate BMPs, including:
 - › Posting of signage indicating that a permit from the trail manager is necessary before any excavation of the corridor begins.
 - › Sending notice of the existence of such requirement to easement holders and the municipal engineer and/or public works department

- › Developing Standard Operating Procedures with local utilities, easement holders, DPWs, and other municipal offices for work in the right-of-way.
- Establish a procedure for the trail manager to periodically travel the corridor and inspect the integrity of the trail surface, structures and landscaping and require appropriate action to correct any problems observed.

Environmental Justice

The project does not have a disproportionately adverse human health or environmental impacts relative to minority or low-income populations. In Massachusetts, a neighborhood is defined as an Environmental Justice (EJ) population if any of the following are true:

- The annual median household income is not more than 65 percent of the statewide annual median household income
- Minorities comprise 40 percent or more of the population
- 25 percent or more of households lack English language proficiency
- Minorities comprise 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income

Based on the MA Executive Office of Energy and Environmental Affairs (EEA) Environmental Justice Mapper, which uses population data from the 2020 Census, the project area encompasses Census Blocks classified as EJ populations based on the income criterion (#1 above), minority population criterion (#2 above) and minority and income criteria (#4 above). The EEA Languages Spoken Mapper indicates that after English, the most prevalent language spoken in Southbridge and the project area is Spanish.

The project is a transportation enhancement project and will improve pedestrian and bicycle transportation conditions in the project area for all populations. Specifically, this project will improve overall pedestrian safety, and will increase environmental equity of access to public and private resources such as the Southbridge Town Common, the West Street School and Recreation Area, the Westville Dam Recreation Area, the central business district, and the Route 131 commercial corridor. In order to better involve the community in the project and ensure meaningful opportunities for participation, publicly distributed materials will be made available in the predominant languages during final design and permitting.

Air Quality

As a shared-use path (bicycle and pedestrian) construction project, greenhouse gas and other air emissions will be limited to the construction period of the project and are anticipated to be minor. Construction-related emissions will be reduced using ultralow sulfur diesel fuel (ULSD) and anti-idling requirements. The proposed project site is not classified as a “non-attainment” area for any criteria pollutants.

Once the trail is constructed, it will provide a non-motorized option to circulate through the community, as such, the use of the trail is expected reduce the reliance on cars and to improve air quality in the community.

Noise Pollution

A short-term increase in noise levels with the project area will be associated with the active construction period when heavy equipment is in use. Construction specifications for the contractor will include control of noise through the fitting of equipment with appropriate mufflers as part of the required pollution controls. There will be no long-term change to the level of local ambient noise the project area currently emits or receives.

Wetlands and Floodplains

The project area is dominated by the Quinebaug River and its floodplain. The northwestern-most segment utilizes existing ADA Riverwalk trails along the bank behind the West Street School and connects to the US Army Corps of Engineers’ Westville Dam. The existing trail is located within feet of the bank of the Quinebaug River and has a narrow, naturally vegetated buffer. The preferred route between the West Street School and Crane Street utilizes surface streets and avoids any wetlands in these sections. As the trail enters the railroad right of way (ROW) at Crane Street, it traverses Riverfront Area (200’ from the mean annual high water mark) associated with the Quinebaug, though the railbed is on a terrace 30 to 40’ above the river. Moving east-southeast, the railroad ROW meanders away from the river through densely-developed residential areas of Southbridge, crossing Cohasse Brook which is culverted under a rotary on Route 131 at Route 169, and continues along the river course, within the 200’ Riverfront Area, but separated from the river by East Main Street and existing residential and commercial development.



The rail trail follows the existing rail-bed, and is located very close to valuable wetland habitat areas. The final design should protect these natural features to the extent possible.

The preferred route crosses Lebanon Brook, a perennial stream with associated Riverfront Area with some associated Bordering Vegetated Wetland (BVW). The ROW occurs within Buffer Zone to BVW in this vicinity. After crossing Route 131 with a proposed at-grade pedestrian crossing, the last 1.5 miles of the historic railroad ROW will be entirely within Riverfront Area associated with the Quinebaug River and an unnamed perennial stream near the southeast end of the project. Along this stretch of the project, floodplain wetlands including BVW and associated Buffer Zones encompass the ROW. BVW wetlands include deep marsh, wooded swamps, and scrub-shrub swamps in this section of the project. A Potential Vernal Pool (PVP 23213) occurs on the south side of the ROW within BVW just west of the Accurate Metal Sales facility. The 100-year floodplain associated with these streams are also regulated as Bordering Land Subject to Flooding under the Massachusetts Wetlands Protection Act and may be subject to review under the Town of Southbridge Zoning Bylaw, Section 9.1 Floodplain Zoning Overlay District.

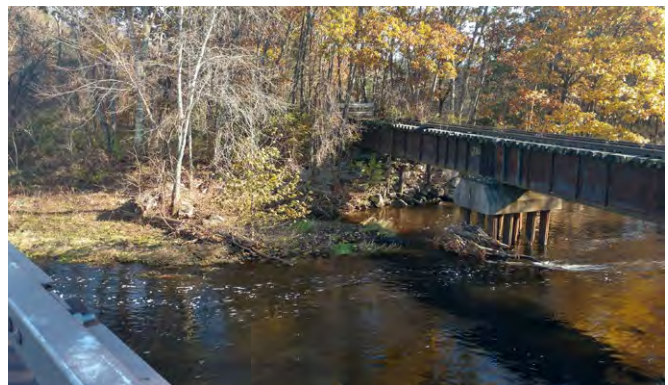
Floodplain and wetland boundaries shown on the maps are based on MassGIS data including MassDEP Wetlands and FEMA 100-year floodplain data layers. Wetlands were not delineated or flagged as part of this study. Wetland boundaries delineated for the Quinebaug Valley Rail Trail and Slope Stabilization plans from MassDOT are included, which show flagging for wetlands along the railroad bed and existing trail. The proposed trail may utilize land within the floodplain area but will not require fill. With the trail mainly being located on existing roadways and the railroad bed, there should be little to minimum impact on surrounding wetland and floodplain areas.

Vegetation and Wildlife Resources

The Quinebaug River Trail passes through mixed land use areas. The preferred route to the northwest is a predominantly urbanized area with typical open canopy and early successional and young forest vegetation. Moving to the south and east, a more naturalized vegetation characterizes the ROW from the crossing at Ashland Avenue and continuing along the river to the Dudley town line. Forest vegetation includes birch, maple and oak over-story with occasional mature White Pine.

Invasive plant species are a significant component of the understory within the Riverfront Area, especially along the south-east portions of the project area. Multiflora Rose (*Rosa multiflora*), Burning Bush (*Euonymus sp.*), and bush honeysuckles (*Lonicera sp.*) are common.

Evidence of common wildlife was observed during a January site visit. Bird species typical of suburban Massachusetts forests were observed, as were track and sign of common mammals including moles, small rodents, fox, and raccoon. Important wildlife habitat features were common throughout the project area, including standing dead trees (snags), trees with large cavities, areas with open water in the winter, potential turtle nesting areas, stream bed riffle zones, gravel stream bottom, and pools that may function as vernal pools throughout the floodplain forest adjacent to the Quinebaug River.

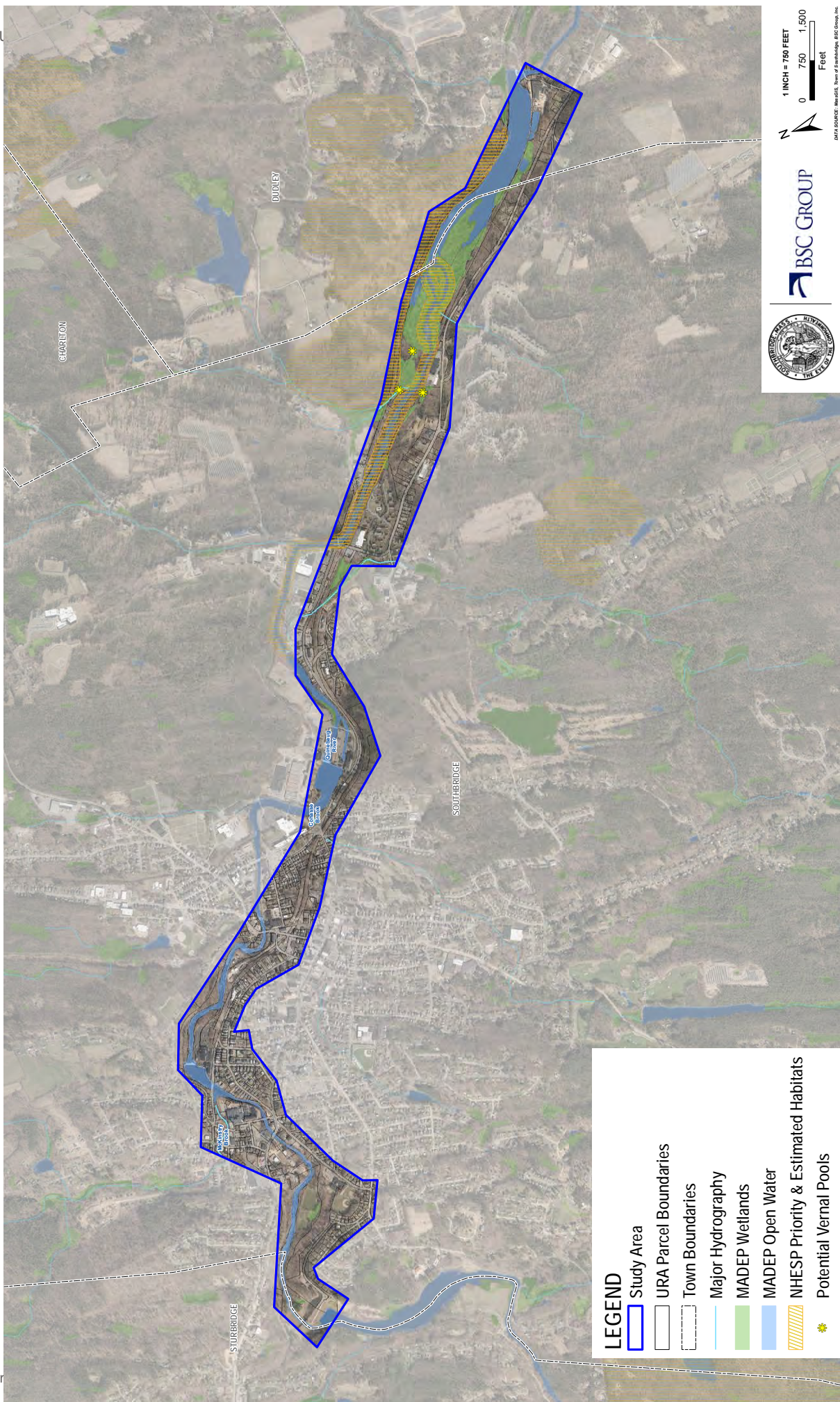


Various types of common wildlife depend on the local vegetation and habitat.

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

NHESP RARE AND ENDANGERED SPECIES HABITATS MAP

QUINEBAU



LEGEND

- Study Area
- URA Parcel Boundaries
- Town Boundaries
- Major Hydrography
- MADEP Wetlands
- MADEP Open Water
- NHESP Priority & Estimated Habitats
- * Potential Vernal Pools



1 INCH = 750 FEET
 0 750 1,500
 Feet
 DATA SOURCE: MapGIS, Town of Southbridge, BSC Group, Inc.

Endangered Species

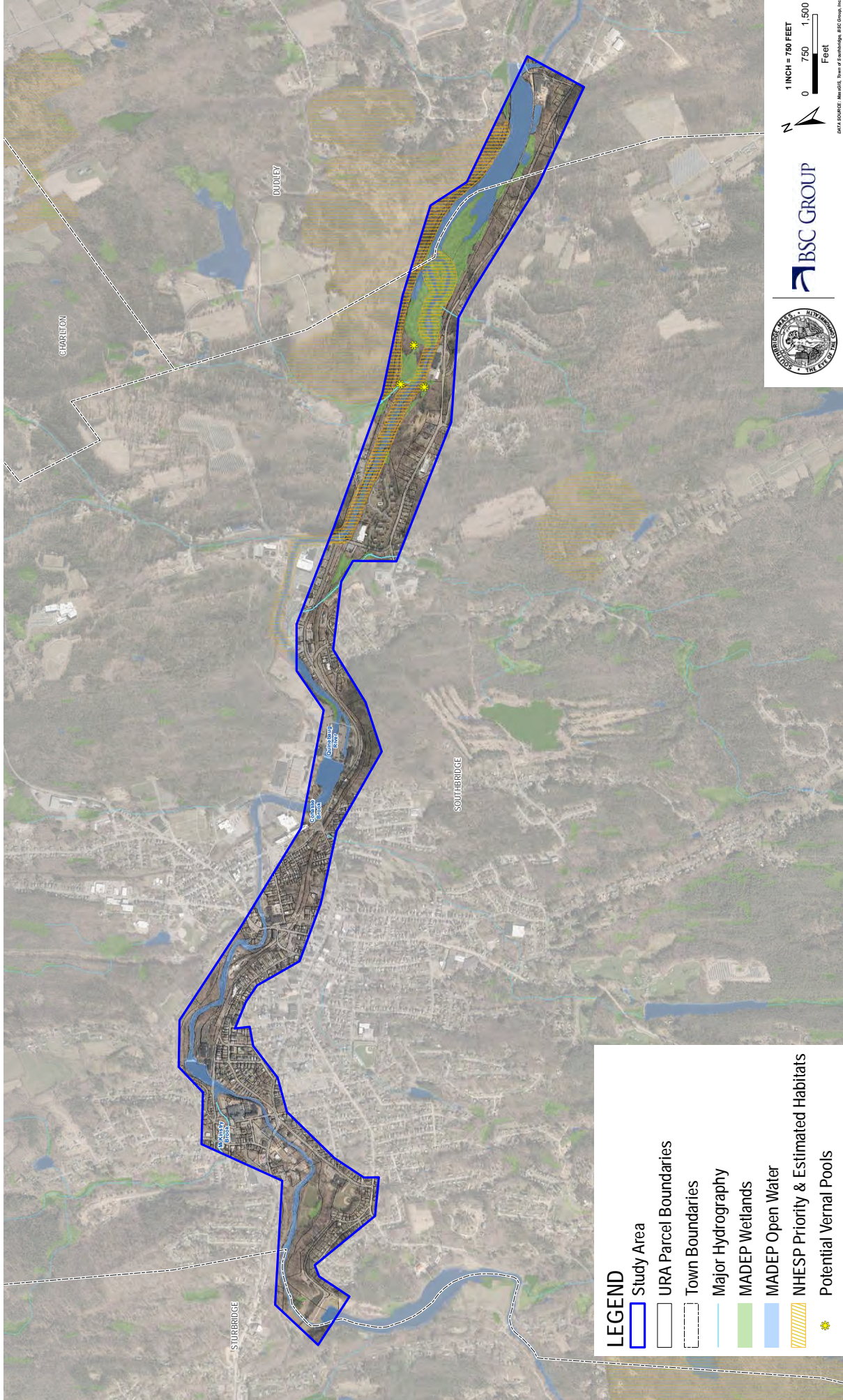
The project area between the at-grade crossing of Ashland Avenue and the Dudley town line are located within Natural Heritage & Endangered Species Program (NHESP) Priority Habitat (PH 756) and Estimated Habitat (EH 604). A formal information request will be required to determine what species listed under the Massachusetts Endangered Species Act (MESA) are known to occur in this area.

It is probable that this project will occur within habitat for the Northern Long Eared Bat (NLEB) and another species of interest to the US Fish & Wildlife Service (USFWS), the Monarch Butterfly. The northern long-eared bat is currently listed as threatened under the federal Endangered Species Act and presumed to be present throughout most of Massachusetts. Projects with a federal nexus are required to consult with USFWS regarding potential impact to this species, using the tool available in USFWS' on-line IPaC system. Using this tool, most projects are determined to have no adverse effect on the northern long-eared bat. When the potential for adverse effects is identified, time-of-year restrictions on construction activities generally are sufficient to avoid these effects. A new rule pertaining to the status of the northern long eared bat will be published 2022 for public comment, and the final rule is anticipated to be adopted late in the year. The results of this process may change the current IPaC-based consultation process and accepted mitigation measures.

In 2020, the USFWS concluded that listing the monarch under the Endangered Species Act (ESA) is warranted but precluded by higher priority listing actions. Based on the USFWS' priorities and workload, the USFWS intends to propose listing the monarch in Fiscal Year 2024, if listing is still warranted at that time. In the meantime, the monarch is designated as a candidate under the ESA. Candidate species are not protected under the ESA, but the USFWS reviews their status annually, and could decide to initiate the listing process sooner than 2024.

SOUTHBRIDGE TRAIL FEASIBILITY STUDY

NHESP RARE AND ENDANGERED SPECIES HABITATS MAP



LEGEND

- Study Area
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BSC GROUP

1 INCH = 750 FEET

0 750 1,500

Feet

DATA SOURCE: MASSGIS, Town of Southbridge, BSC Group, Inc.



Permitting Strategy

Rare Species

A Massachusetts Endangered Species Act (MESA) checklist will be filed with the Massachusetts Natural Heritage & Endangered Species Program (NHESP) to determine the state-listed wildlife species that the project may impact and to determine what will be required to avoid an illegal “Take” of a state-listed species. A US Fish & Wildlife Service Information for Planning and Consultation (IPAC) inquiry will be filed concurrently to ensure compliance with the federal Endangered Species Act.

Wetland Permitting

Permitting under the Massachusetts Wetlands Protection Act (M.G.L. ch. 131 §40) and its implementing regulations (310 CMR 10.00 *et seq.*) will require wetland delineation along the project length where the proposed route is located within 200’ of perennial streams and 100’ of other jurisdictional wetlands. A Notice of Intent will be prepared and filed with the Southbridge Conservation Commission and MassDEP.



Implementation Strategy



Implementation of the preferred route presents several challenges that will require key decisions by the Town with careful consideration to functionality, aesthetics, access, ADA compliance, environmental impacts, trail surface, safety, maintenance, public input, construction cost and long-term maintenance cost and available funding.

Lease Agreement with MassDOT

MassDOT has been coordinating with the Town and their legal counsel over the last several months and recently began moving forward to entering into a long-term (99-year) lease agreement that will allow for the construction of a multi-use trail along the abandoned railbed from the intersection with Cross Street to the Dudley town line for use by the general public. This is a major step in this process that will transfer and establish a tremendous asset to the Town for decades to come and provide a vital link to adjacent communities including the State of Connecticut. The process is expected to be completed in 2022.

Rail bed

Portions of the abandoned railbed with existing track (steel rail with wood ties) still in place will require a program to remove these elements and comply with current environmental standards and protocols. The steel rails can easily be removed and are typically sold to

a salvage company with any profits credited toward the trail project to offset any other costs. This operation can either be executed by the Town through a Contractor prior to the start of construction or by the General Contractor hired to do the overall rail trail construction contract. The wood ties that are in the rail bed or have been removed from the bed and are currently stacked along portions of Section 8 are typically removed and disposed of through a state-licensed facility with oversight by a Licensed Site Professional (LSP). Again, this can be completed either by the Town or a General Contractor prior to the start of construction or as part of the construction contract. Once the existing track has been removed the remaining material will be supplemented with new gravel base material, shaped, regraded to the proposed elevations, compacted and either finished with a stone dust surface or a layer of hot mix asphalt, typically to a depth of 2.5 to 3.5 inches.

The section of the abandoned railbed with no track from the intersection with Route 131 to the Dudley Town Line will likely be reclaimed and similar to the portions with track, supplemented with new gravel base material, shaped, regraded to the proposed elevations, compacted and either finished with a stone dust surface or a layer of hot mix asphalt, typically to a depth of 2.5 to 3.5 inches.

Bridges

The two existing vehicular bridges (one over the Quinebaug River, the other over McKinstry Brook) located along Mill Street between the intersection with Main/Hamilton/West Street to the intersection with River Street will remain in place with scheduled upgrades by the Town in cooperation with MassDOT within the next few years. The existing vehicular bridge over the Quinebaug River located along River Street will remain in place with no improvements to the bridge.

The section of abandoned railbed that crosses Main Street near the rotary, where there once was a rail bridge, will either transition to street level, continue over Main Street via a new single span pedestrian bridge or both. This will depend on available funding and may require a phased approach to implement.

The existing railroad bridge over Morris Street presents options for the Town including retaining the existing steel structure and constructing a new deck with safety rails directly on top or installing a new pedestrian bridge supported on new concrete foundations outside of the existing stone abutments so the new bridge spans over and above the existing. Again, this will depend on available funding and may require a phased approach with the long-term solution being the bridge option and the short-term solution requiring an access ramp from the elevated railbed to street level of East Main Street.

The two existing pedestrian bridges located along the abandoned railbed from the intersection with Route 131 and the Dudley Town Line will remain in place with minor improvements to the bridge including deck/rail repairs, hardware replacement, tightening of bolts, power washing, etc. Otherwise, these two structures installed by the Town 10 years ago are in great shape.

On-Road

The on-road portion of the trail essentially begins at the school entrance at West Street and ends at the intersection with Cross/Crane Street. The section along West Street will consist of an 8'-12' wide paved surface path along the west side of the street separated by granite curb with 6" reveal. The section along Mill Street will consist of an 8'-12' wide paved surface along the west side of the street separated by granite curb with 6" reveal from the intersection with Main/West/Hamilton Street to the 90° turn where the trail will either continue along the east side of the street as a separated path (with curb) or as a shared-use to the intersection with River Street. The section of trail along River Street will consist of an 8'-12' wide paved surface along the south side of the street separated by granite curb with 6" reveal and highway guard/fence along the river side to the intersection with Cross Street where it will terminate with an established pedestrian crosswalk to connect to the abandoned railbed.



The trail will take advantage of overgrown and underused areas to connect on-road sections and crossings.

Trail Heads and Trail Access

The existing trail system from the Westville Dam Recreation Area access road to the athletic fields parking lot behind the Elementary School will remain in place with no upgrades or improvements. The proposed multi-use trail will begin at the existing parking lot at the West Street athletic fields which will serve as a trailhead with parking, an information kiosk, benches, and bicycle racks.

The proposed multi-use trail along West Street will connect to the west side of the Main/Mill/Hamilton Street intersection and allow users to dismount their bicycles and navigate through the intersection as any pedestrian does today. Once through the intersection, users will connect to an 8'-12' wide paved path along the west side of Mill Street and continue northerly.

Where the trail transitions from on-road to off-road along Crane Street, there is enough land area for a trailhead with parking, an information kiosk, benches, and bicycle racks. This area can also highlight the Optical Heritage Museum located here. Furthermore, the Town has long-term plans to create a riverfront park along the Quinebaug River in this area, and once that park is constructed, there will be a rail trail connection from the park to the trailhead on Crane Street.

Where the trail crosses through the center of town by the old train depot building, there is a municipal parking lot that will serve as a trailhead location. In addition, designed and funded roadway improvements in this area will provide access from the rail trail to downtown businesses, retail and services. The section of the rail trail that runs through the downtown is expected to be signed and highlighted as a major recreational amenity for the Town, attracting both residents and visitors to access the trail at this central business district location.

There are also a number of residential neighborhoods, multi-family housing buildings, and housing authority property in the downtown area. The rail bed runs adjacent to many of these residential areas. Connections to the rail trail will be established from neighboring streets, the Housing Authority property, and other residential clusters in this area.

As the trail heads out of the downtown to its location at the rotary and Morris Street area, the trail is adjacent to the former American Optical campus. The campus has been updated to include a hotel, training and conference center facilities, and current improvements are adding housing into the campus. The rail trail will be a valuable amenity for the various uses at the campus, and there will need to be strong bicycle and pedestrian connections between the campus and rail trail.

South of Old Woodstock Road, the rail trail parallels the commercial corridor along Route 131. There are many retail destinations for the community along this corridor. Fortunately, there is a parcel of town owned land that connects the rail bed to Route 131. Another trailhead with parking and wayfinding signage is planned for this parcel, as well as the installation of a new crosswalk to allow a safe connection from the rail trail on one side of Route 131 to the retail plaza on the opposite side of the roadway.

At the southeasterly section of the abandoned railbed, the proposed trail will connect to the existing dust stone surface trail at the Dudley Town Line either as a stone dust or paved trail. The Dudley section of the QVRT has a trailhead very close to the Southbridge town line. This will provide another connection to the rail trail and highlight the entire QVRT as a regional amenity.

