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Massachusetts Department of Transportation

North Adams Adventure Trail Feasibility Study
Protection Avenue to River Street

North Adams, Massachusetts

Acknowledgements

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Contents

Background

The North Adams Adventure Trail (NAAT) is an envisioned east-west, primarily off-road, shared-use path connecting Williamstown to North Adams along a similar alignment as the existing State Route 2, active freight rail corridor, and the Hoosic River. As shown in Figure 1, the future trail is divided into three distinct sections in various stages of planning and design.

- The first section is the 2.5-mile Mohawk Bicycle/Pedestrian Trail—a MassDOT-funded project began construction in 2021.
- The second section is a 1.3-mile section from the Williamstown border to Protection Avenue in North Adams. At the writing of this document, the City of North Adams is working with a private developer to advance this section through design and into construction. The City refers to this section as the North Adams Adventure Trail (NAAT) Phase I, which will connect to the Mohawk Trail at the Williamstown Line.
- The remaining approximately 2 miles is the focus of this feasibility study, stretching from Protection Avenue to River Street and eventually to the grounds of the Massachusetts Museum of Contemporary Art (MASS MoCA). This section is referred to as the NAAT Phase II.

This east-west corridor has been identified as a high priority for the Commonwealth's trail and greenway system in numerous initiatives and statewide planning documents, including Massachusetts Department of Transportation's (MassDOT) Statewide Bike and Pedestrian Plans, Department of Conservation & Recreation's (DCR) Commonwealth Connections, and various local and regional plans.

The trail is envisioned to be a significant regional draw for both recreation and active transportation, while linking two major cultural institutions—the Clark Art Institute and MASS MoCA. Ultimately, the completion of this trail would further the goal of a future connection with the popular Ashuwillticook Rail Trail to the south, creating a completely off-road network of nearly 30 miles through the Berkshires, linking Williamstown, North Adams, and Pittsfield. The north-south Ashuwillticook Trail between Lanesboro and Adams is a great success, but was almost entirely a rail-to-trail conversion. The rail lines in North Adams and Williamstown are still active however, and thus an alternate alignment for the trail is required.

MassDOT understands that promoting a healthy and vibrant community requires creating attractive, safe, and purposeful places for people to walk, bike, exercise, and travel. Phase 1 is a critical first step to providing connectivity from the Mohawk Trail terminus in Williamstown to downtown North Adams via MASS MoCA and eventually connecting to the Ashuwillticook Rail Trail in the south. It also provides a new direct connection to the Appalachian Trail. The previous Mohawk Trail alignment in North Adams had challenges, including opposition from residential neighborhoods and concerns with the number of trail crossings along State Route 2.

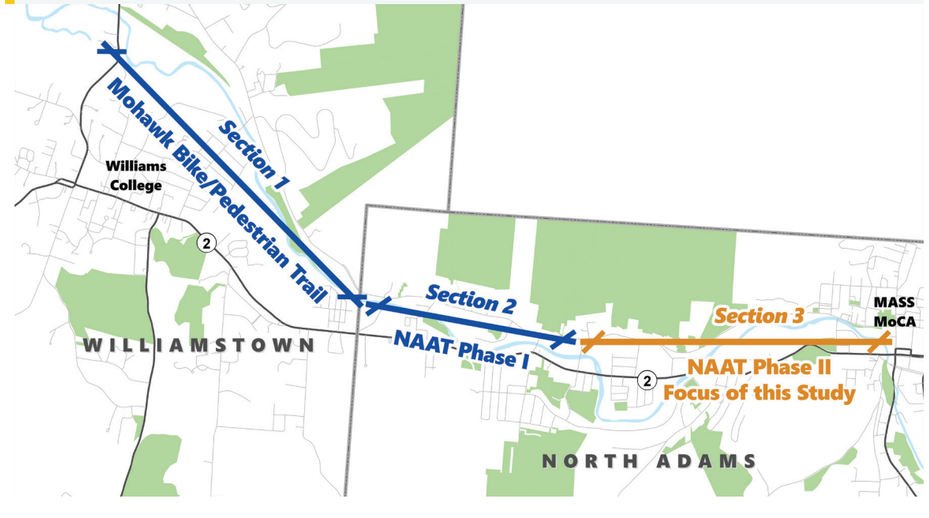
The Adventure Trail provides an alternative alignment that capitalize on the picturesque summit of Mount Williams to the south and the vista of Pine Cobble Mountain to the north. North Adams' standing as an important cultural and economic center in the Berkshires will be further enhanced with the construction of this trail by growing its bicycle and pedestrian network and providing an alternative means of transportation from Williams College to downtown North Adams and points between.

Study Purpose

The MassDOT Office of Transportation Planning (OTP) initiated efforts to conduct a feasibility study to complete the construction of a section of the NAAT as part of an off-road shared-use path from Williamstown to North Adams. This feasibility study focuses on the eastern segment of the overall trail, located entirely in North Adams, primarily between Protection Avenue and MASS MoCA, also referred to as Phase II of the NAAT.

Due to the unique nature of determining a suitable right-of-way for the future trail, an appropriate order of magnitude impact and cost assessment has been considered in this feasibility study. Property acquisition costs are not included in the cost assessments. This study focuses on three different alignment concepts (see Figure 2) connecting the path between the approximate trailhead of Section 2 at the western edge of Protection Avenue to River Street and eventually MASS MoCA. While each alignment presents a distinct route to connect these points, a final preferred route may be a hybrid of two or three of the alignments.

Figure 1—North Adams Adventure Trail Overview

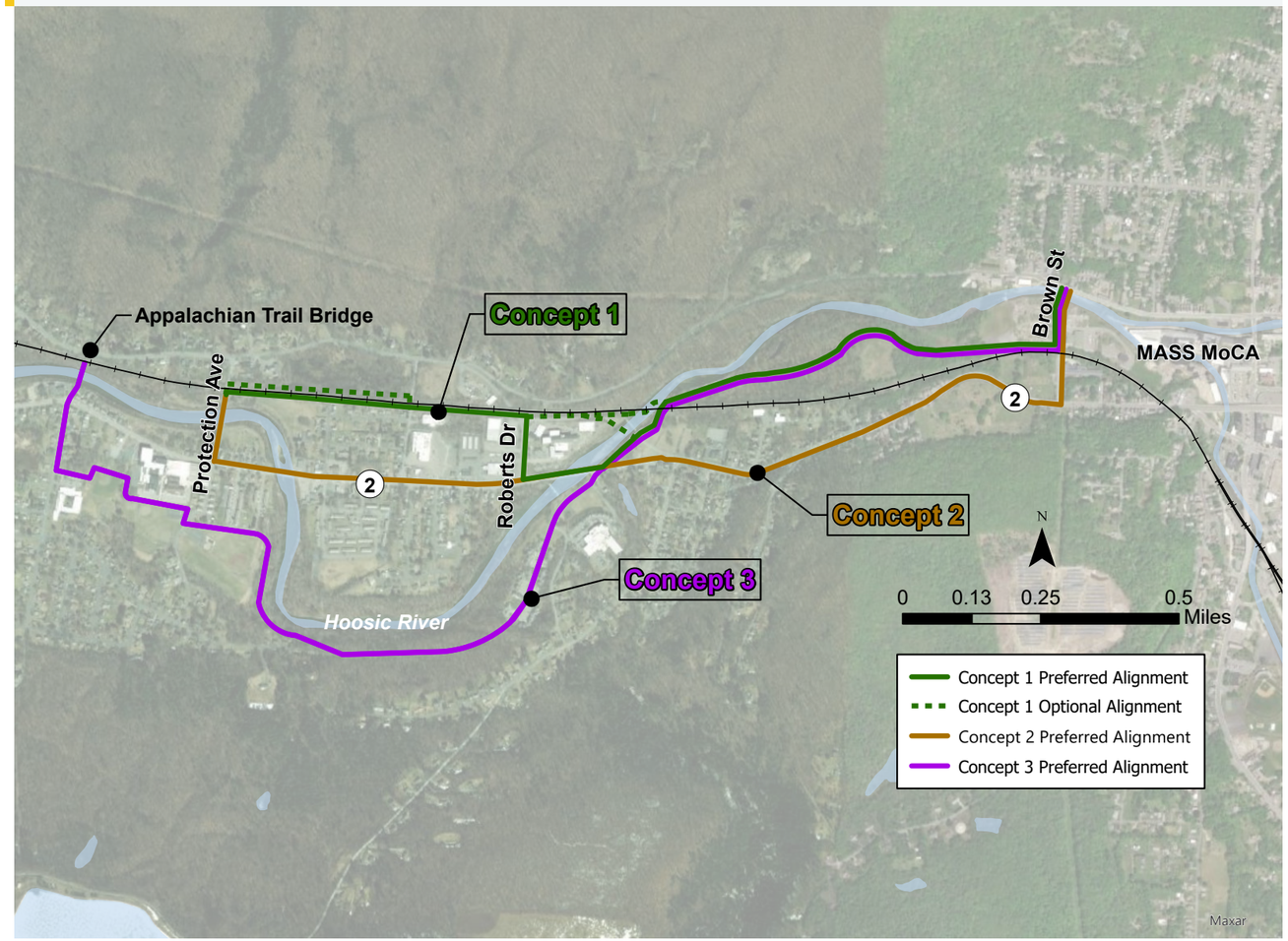


Study Tasks

MassDOT determined that the logical and appropriate first step for this feasibility study would be to complete the following tasks:

- Conduct a desktop analysis of existing conditions to inform site visit
- Map and analyze the alignment identified by recent planning efforts, known as *The Vision*
- Conduct a field assessment of the project area at critical locations to verify the record information
- Identify alternate trail routes, including the State Route 2 corridor
- Identify potential impacts of the selected alignment concepts

Figure 2—Three concepts analyzed in this study



Note Concept 3 overlaps with Phase I of the NAAT between the Appalachian Trail bridge and Protection Avenue. Coordination between the two projects would be necessary.

Project Location and Limits

The current thinking for this section of the NAAT alignment begins at or near Protection Avenue and continues east for approximately 2 miles to the grounds of MASS MoCA. However, one of the concepts does analyze the potential to connect directly with the Appalachian Trail. The flat terrain of the Hoosic River Valley is ideal for cycling and walking, and this study will focus on a trail along the river where it makes sense, some portions which have already been diverted into designated culverts/underpasses. A recent independent planning report presented an alignment concept, referred to as *The Vision,* that will be analyzed as part of Concept 1 in this study. That alignment includes a portion of rail-with-trail along the active freight rail corridor which will be evaluated as well as alternative alignments that were identified in certain segments. The study indicates ROW requirements needed from the freight operator as appropriate for each concept.

Numerous challenges to trail construction along the riverbank are expected. Therefore, the State Route 2 highway layout—which is under MassDOT jurisdiction west of Notch Street—will also be evaluated for a side path facility. After meeting with City officials, MassDOT agreed to develop and analyze a third alignment that more closely follows the oxbow of the Hoosic River, connects numerous community facilities, and includes a segment that follows an existing off-road path within a right-of-way (ROW) for a portion of a road that was never constructed.

- **Concept 1** is the northernmost alignment analyzed that follows *The Vision* alignment as developed in previous planning efforts but presents a few alternatives to that alignment in certain locations. This alignment generally follows the active freight rail ROW before diverting into the former fairgrounds parcel towards Brown Street.
- **Concept 2** follows the State Route 2 corridor from Protection Avenue to Brown Street as a separated bike facility sharing the existing roadway ROW.
- **Concept 3** carries the NAAT adjacent to the south bank of the Hoosic River over off-road paths, including a stretch through wooded terrain along an existing trail on a municipal ROW.

Each concept is broken down further into segments with a general description of existing conditions, potential trail options, and a rating of difficulty of implementation from low to high. A summary matrix is included.

Concept 1

Summary of Proposed NAAT Alignment and Alternate Segments

Concept 1 begins at the Trailhead of NAAT section 2 at Protection Avenue and generally follows the alignment proposed as part of The Vision, but presents alternative alignments in segments for areas that were deemed excessively challenging to implement. The initial segments follow the rail corridor between Protection Avenue and Roberts Drive and would require the path to be bench cut into the existing earthen berm between the rail and private property to the south. Final location along the railroad ROW and potential impact will be established as part of a later phase of the project. The alignment then continues as a side path along Roberts Drive and along the State Route 2 bridge over the Hoosic River. Once across the river the path returns off-road, crossing under the railroad ROW and through the fairgrounds parcel to Brown Street where it parallels the roadway to River Street. The following section provides more detail on each segment of Concept 1. Resource maps for Concept 1 can be found starting on page 8.

Figure 3—Concept 1

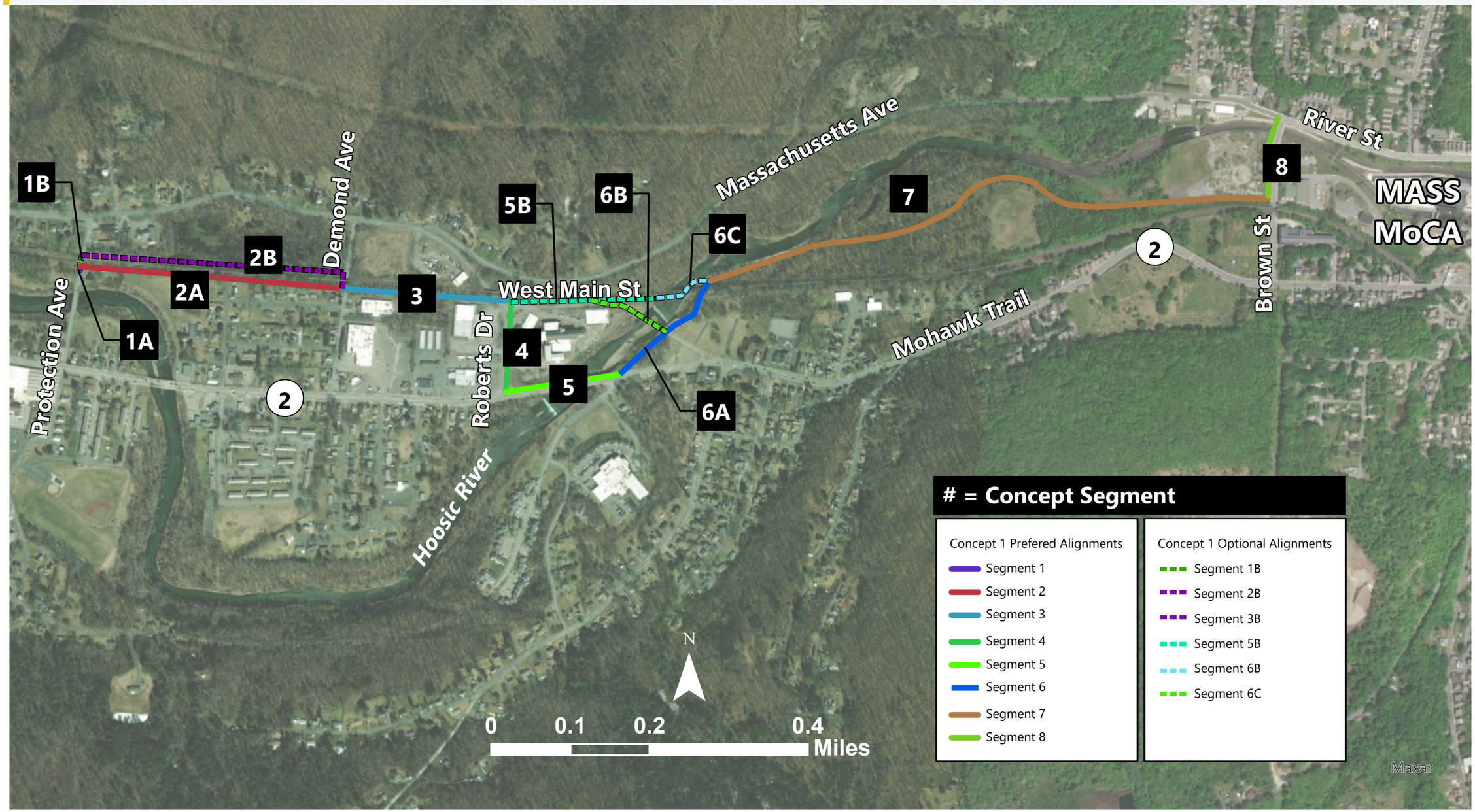
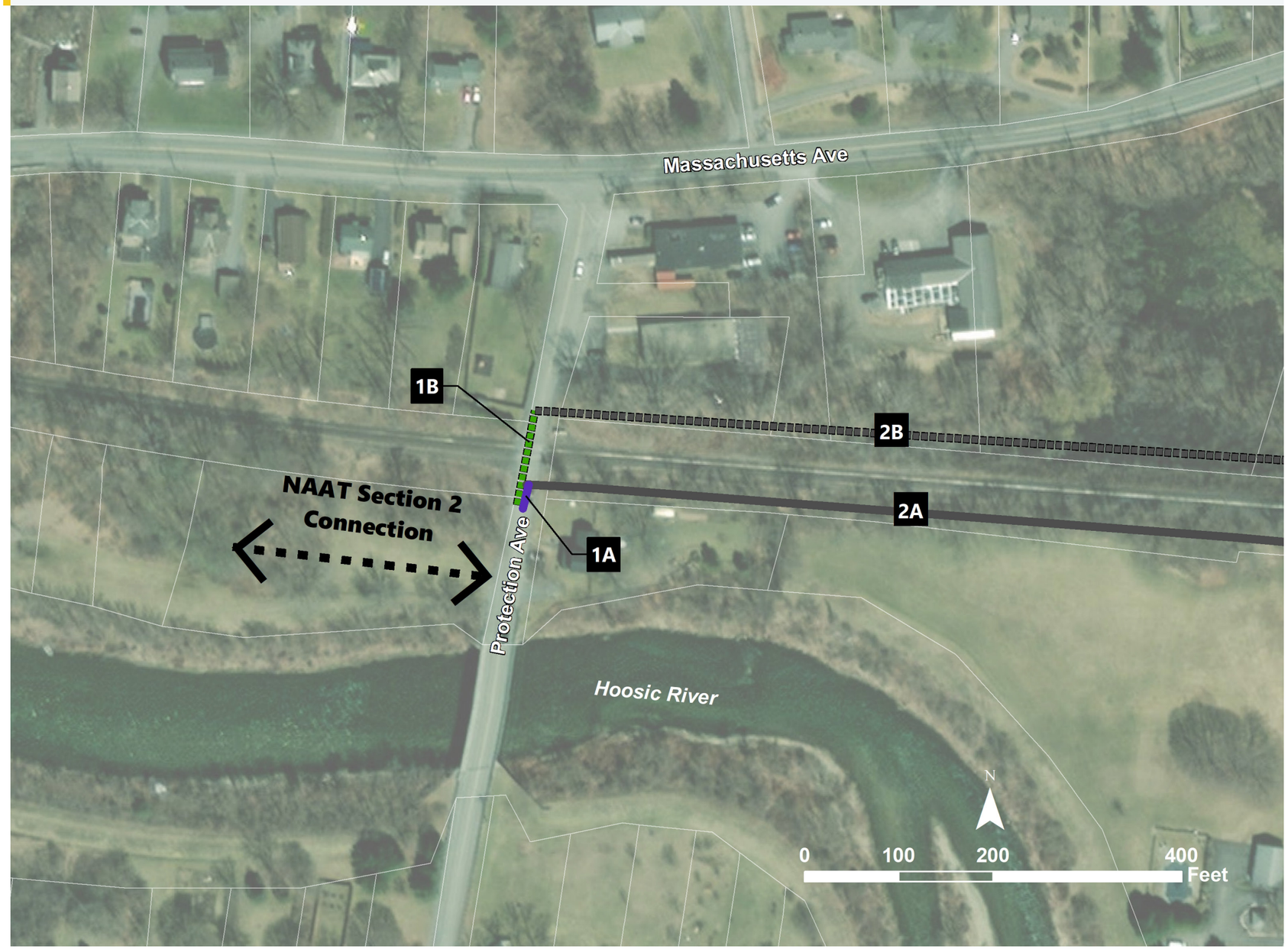


Figure 4—Concept 1, Segment 1



Concept 1 Segment 1

On-road connection with Section 2 of North Adams Adventure Trail at Protection Avenue trailhead

Segment 1—Protection Avenue Connection The NAAT begins where the central section ends, at Protection Avenue (see Figure 5). Protection Avenue is a low-volume low-speed local roadway with 40 feet of total ROW with approximately 30 feet of pavement with two 12-foot travel lanes and 3-foot shoulders (variable) with no sidewalk (see Figure 6).

The length of Segment 1 is dependent on the final alignment and trailhead location of the central section of the overall North Adams Adventure Trail and whether Segment 2 (heading east) runs along the northern or southern edge of the rail corridor.

Segment 1a—Protection Avenue Connection South Side of Railroad The preferred path alignment would run along Protection Avenue to the southern edge of the rail corridor. This would be accommodated through pavement widening along the western edge of Protection Avenue for approximately 50 feet where the path would cross Protection Avenue and enter the railroad ROW. This could be accommodated through striping and signage of the existing pavement width or expanding the pavement to accommodate the shared-use path and associated buffer along the western edge. Maintaining the existing roadway cross-section and adding the shared-use path and buffer along the western edge would likely encroach on a private parcel.

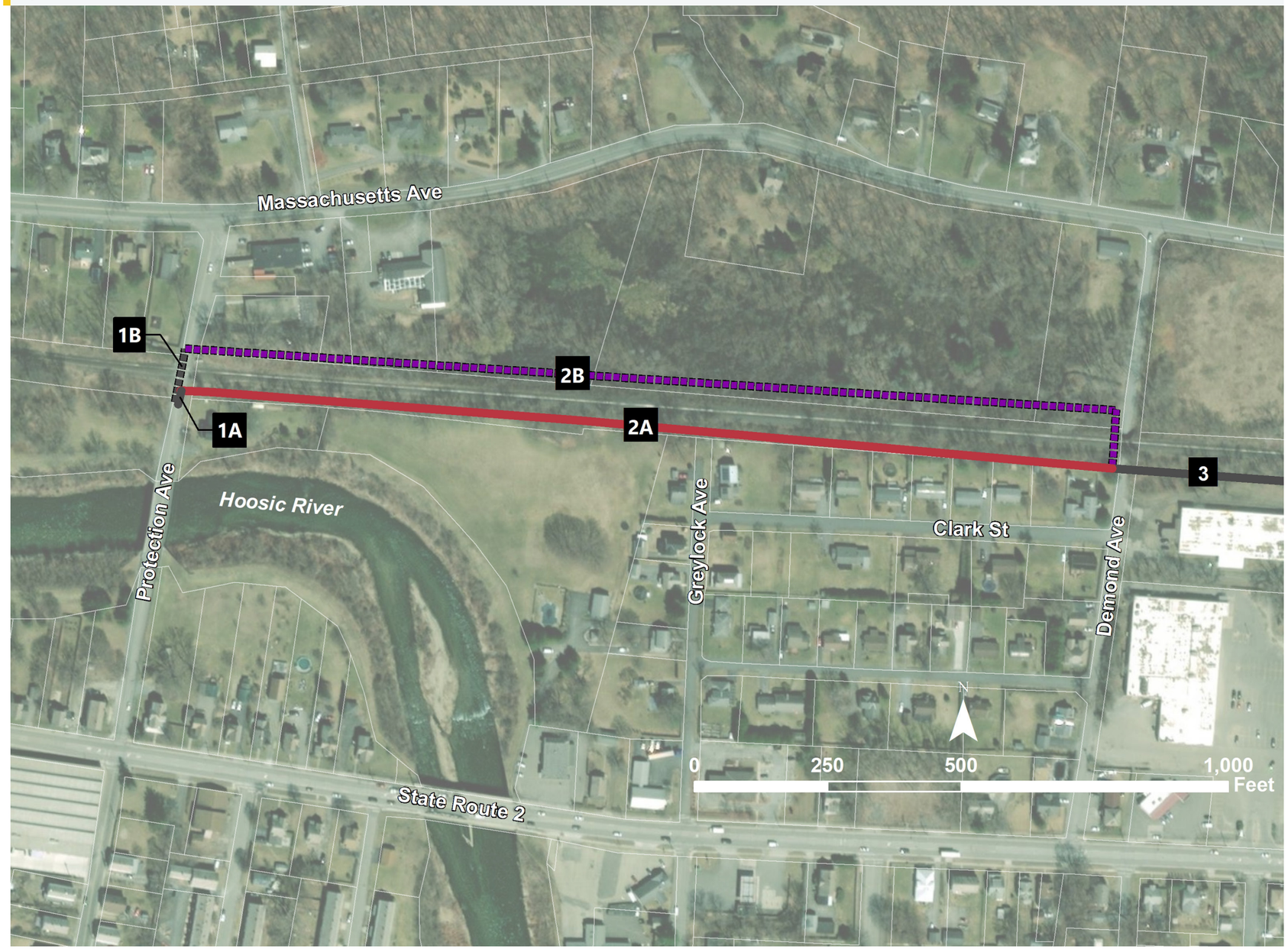
Segment 1b—Protection Avenue Connection North Side of Railroad The alternate alignment would run along Protection Avenue to the northern limit of the rail corridor for approximately 125 feet and would require an at-grade rail crossing, including required crossing equipment. It is possible that the project would be required to have an approved fully active crossing design, including gates, signal, and other measures. Though Protection Avenue currently crosses the active rail line at-grade, incorporation of a shared-use path crossing will require approval from the Department of Public Utilities, or other appropriate authorities having jurisdiction.

Enhanced signage and markings at roadway crossings will be needed for either alternative. Additionally, coordination with the operating railroad will be necessary for either alternative.

Figure 5—Looking west from Protection Avenue at proposed trailhead area

Figure 6—Looking north along Protection Avenue towards railroad crossing

Figure 7—Concept 1, Segment 2



Concept 1 Segment 2

Adjacent to rail alignment along the rail corridor between Protection Avenue and Demond Avenue

Segment 2 The NAAT takes the trail off-road along the railroad ROW. The rail corridor runs along an embankment through this section bordered to the north by a GIS-mapped wetland area and commercial property and to the south by residential property along Clark Street.

Segment 2a The preferred corridor alignment continues east along the south side of the approximately 80-foot-wide rail ROW. With a minimum of 40 feet between the centerline of the tracks and the adjacent property line, the 10-foot-wide, paved path would run along the side of the approximate 15-foot tall embankment. To accommodate the grade change, the path would run within a bench cut roughly half-way between the edge of tracks and the property line. A retaining wall between the path and the railroad embankment top-of-slope is anticipated in the steepest portions of the embankment. The final wall size and location will be determined after additional structural analysis. The ROW between the path and the property line would be heavily planted to mitigate the loss of trees and shrubs close to the adjacent residential properties.

As the NAAT corridor approaches Demond Avenue, the path's bench cut would slope at a 5% grade to meet the roadway grade. The path alignment would veer slightly south to improve the sight lines for southbound motor vehicles passing through the existing tunnel. A flat landing on each side of Demond Avenue provides space for trail users to pause before crossing the roadway.

Segment 2b The alternate NAAT corridor alignment continues east along the north side of the approximately 80-foot-wide rail ROW. Although roughly 40 feet of space lies between the centerline of the tracks and the adjacent property line, the 10-foot-wide shared-use path may require a property easement to the north to avoid sensitive wetlands at the toe of the embankment (see Figure 9). With or without the easement, the path would require approximately 1,000 feet of boardwalk to bridge wetlands and other sensitive environmental constraints (wetland verification and delineation would be required in the field).

As the NAAT corridor approaches Demond Avenue, the path's boardwalk segments would return to *terra firma* to meet the roadway grade. A paved portion of the path would make a 90-degree turn and merge with the adjacent 20-foot-wide roadway. This short stretch merges with the Demond Avenue segment through the existing narrow tunnel (see Figure 11) and requires pedestrians, bicyclists, and motor vehicles to share the roadway. Ideally the tunnel would be widened, but at least enhanced signage and markings at road crossings would be needed in advance of the tunnel on both approaches. Another option for this segment would be to dead-end Demond Street to eliminate two-way traffic minimizing potential conflict. Additional coordination with the City of North Adams would be necessary for this.

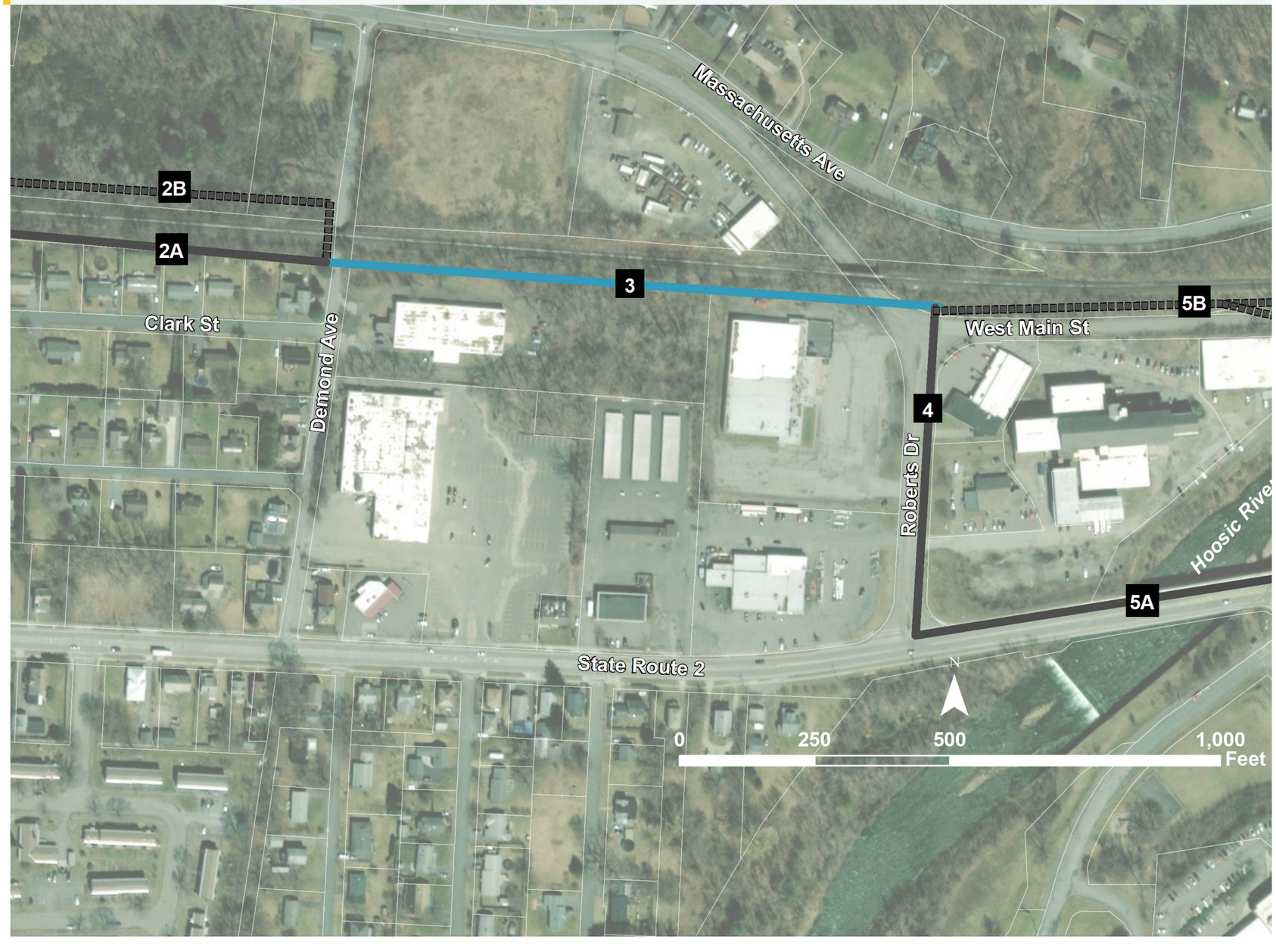
Figure 8—Looking east down rail corridor from Protection Avenue towards Demond Avenue

Figure 9—View of wetland at embankment

Figure 10— View of residential property south of rail corridor

Figure 11—Looking south from Demond Avenue underpass

Figure 12—Concept 1, Segment 3



Concept 1 Segment 3

Adjacent to rail alignment along the rail corridor between Demond Avenue up to and crossing Roberts Drive

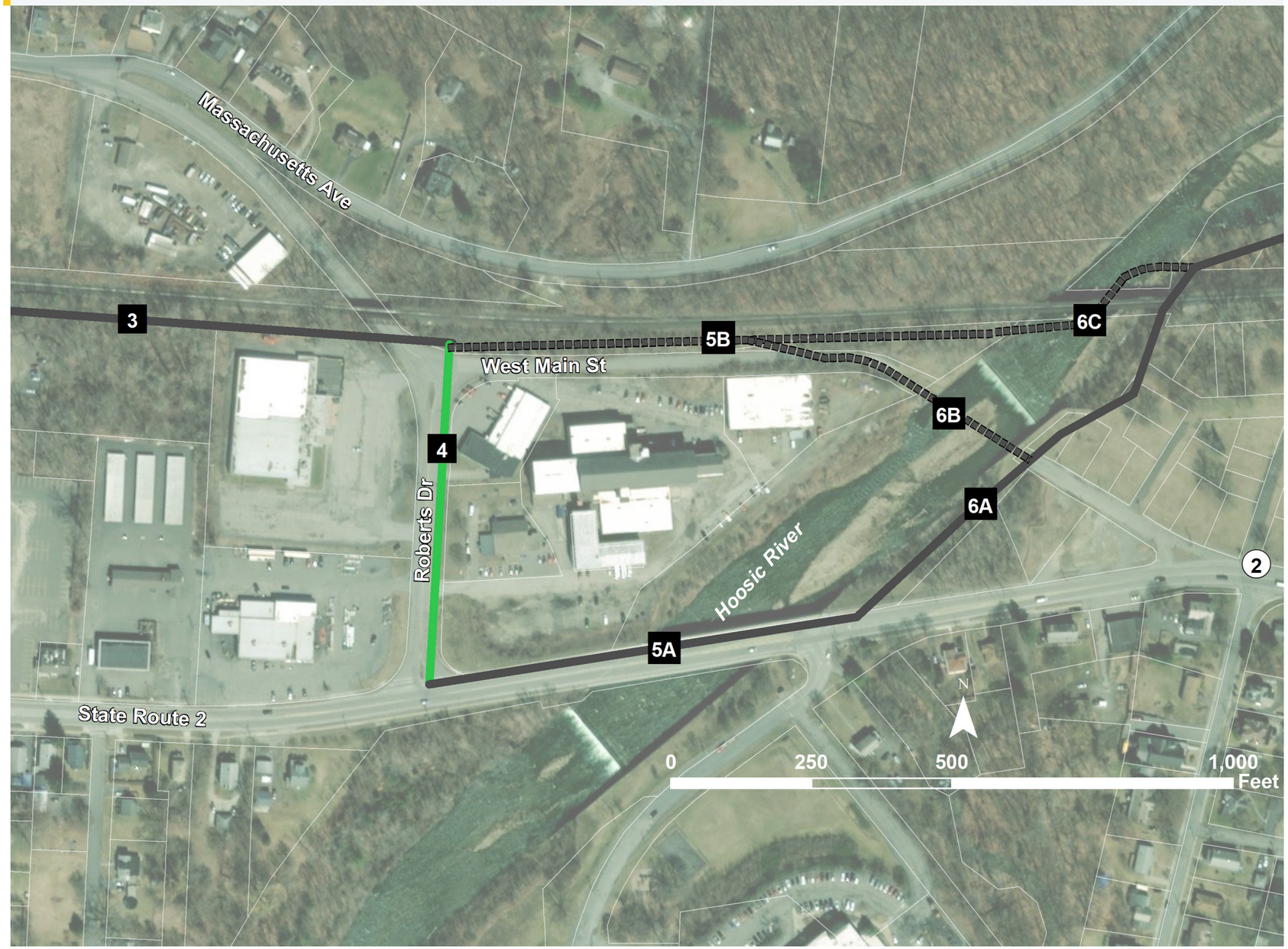
Segment 3 The NAAT continues along the south side of the rail ROW from the Demond Avenue crosswalk (with associated signage and striping) to Roberts Drive. Similar to Segment 2, the railroad ROW is 80 feet wide, offering adequate space between the centerline of the tracks and the adjacent property line to the south. The 10-foot-wide, paved path would run along the side of the approximately 15-foot tall embankment within a bench cut, avoiding the utility poles and powerlines on the south edge of the ROW (see Figure 13). A retaining wall between the path and tracks is anticipated in the steepest portions of the embankment. The final wall size and location will be determined after additional structural analysis. Because adjacent land uses are commercial and industrial, additional landscape buffering would not be required.

As the NAAT corridor approaches Roberts Drive, the path's bench cut would slope at a 5% grade to meet the roadway grade and bend to the south to improve visibility of the crosswalk and for an improved geometry for roadway crossing. Enhanced pavement markings and signage would be installed at the roadway crossing. A flat landing on each side of Roberts Drive provides the space for trail users to pause prior to crossing the roadway.

Figure 13—Looking east from Demond Avenue towards Roberts Drive

Figure 14—Looking north towards rail bridge at proposed location of Roberts Drive crossing

Figure 15—Concept 1, Segment 4



Concept 1 Segment 4

On-road separated path along Roberts Drive

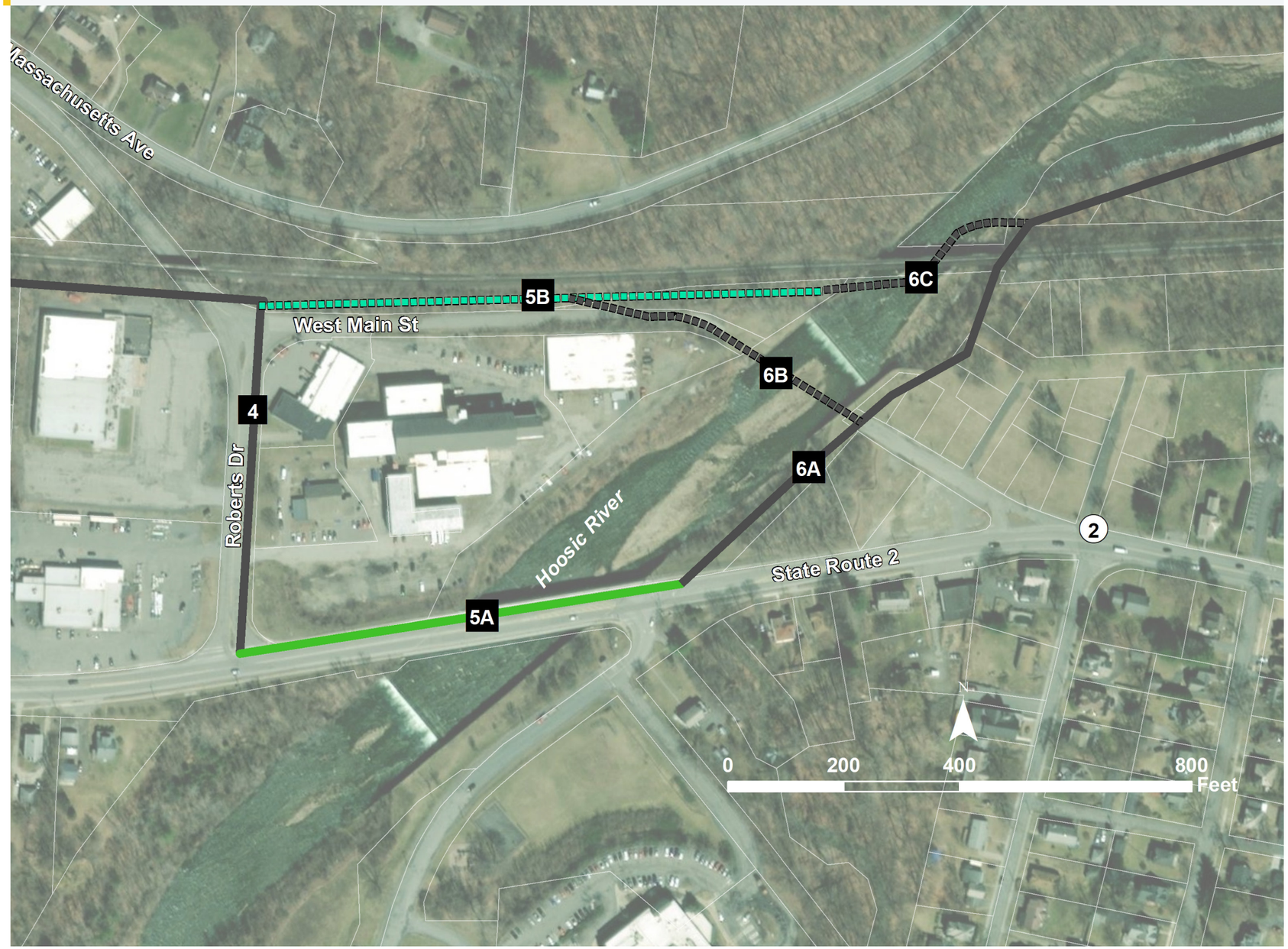
Segment 4 The preferred path alignment would cross West Main Street just east of the intersection with Roberts Drive. From the south side of West Main Street to State Route 2, the NAAT would be a 10-foot-wide side path along the east side of the 58-foot-wide Roberts Drive ROW. Along this nearly 1,000-foot-long block, Roberts Drive contains two 20-foot-wide travel lanes, a marked centerline but no marked shoulders, and a 5-foot-wide sidewalk separated from the roadway by a 6-foot-wide grass strip (see Figure 16). Four utility poles lie within the grass strip and would be unaffected by the sidepath, which would occupy the current sidewalk location plus five extra feet away from the roadway (see Figure 17). A marked roadway crossing and trail crossing signage is expected at two wide driveway crossing locations along the segment.

Several buildings within the complex at the intersection of Roberts Drive and West Main Street are of historic significance, but no impacts are anticipated as part of this project. Starting at about the intersection of Roberts Drive/Route 2 and east towards the bridge, the path and roadway are within the FEMA 100 year floodplain boundary.

Figure 16—Looking south down Roberts Drive

Figure 17—Looking north along Roberts Drive towards West Main Street

Figure 18—Concept 1, Segment 5



Concept 1 Segment 5

On-road shared-use path along Route 2, including bridge over Hoosic River

Segment 5a The north-south side path turns east at the south end of Roberts Drive, and the preferred alignment continues as a side path along the north side of State Route 2. Although 10 feet-wide at the Robert Drive intersection, the side path tapers to approximately 8 feet in width to meet the existing sidewalk on the north side of the Route 2 bridge over the Hoosic River. One utility pole would need to be relocated to the north side of the existing guard rail to accommodate the 8-foot path between the guardrail and existing granite curb (see Figure 20). Providing a 5 foot separation from the roadway would require widening of the Route 2 bridge which is not practical or feasible due to ROW and environmental impacts. A concrete barrier between the path and roadway edge would provide positive separation without having to widen the Route 2 bridge. A similar application was recently installed on Route 122 in Rhode Island (see Figure 19). Structural analysis and modification of the bridge joints are required to accommodate the NAAT on the bridge. Approximately 100 feet east of the bridge, a break would be needed in the guardrail to provide space for the NAAT corridor to veer to the north along the east bank of the Hoosic River. This segment would need to coordinate with improvements proposed in the Brayton Elementary School Safe Routes to School project.

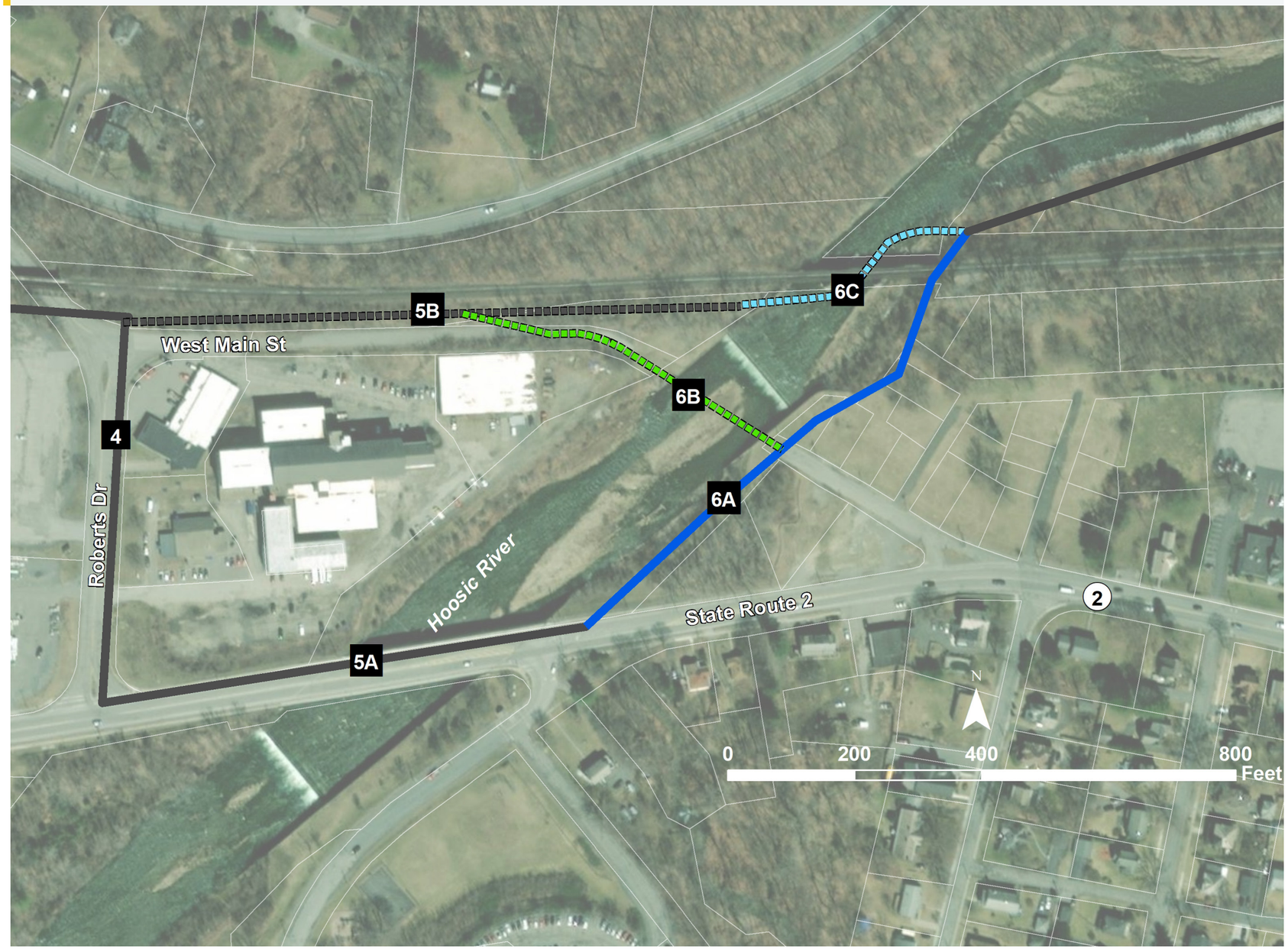
Segment 5b The alternate alignment for the NAAT continues as an off-road path along the south side of the rail ROW from Roberts Drive to, and beyond, the east end of the West Main Street ROW. The railroad ROW is 80 feet-wide, offering adequate space between the centerline of the tracks and the West Main Street roadway to the south. The 10-foot-wide paved path would run along the side of the modest embankment potentially requiring a bench cut with small retaining wall or cheek wall between the path and the tracks. Travelling east from the Roberts Street bridge, the rail corridor declines in elevation until it is at-grade with West Main Street approximately 380 feet from the bridge. West Main Street historically continued approximately 900 feet to a bridge over the Hoosic River, but the bridge was removed and the roadway was dead-ended with a security gate approximately 600 feet from Roberts Drive. Today the street provides a secondary access point to a business plaza located at the corner of West Main Street and Roberts Drive and carries very little vehicular traffic. There are a series of utility poles that run parallel with this alignment as well as multiple culverts under the rail bed that would need to be addressed (see Figure 21). At the east end of the dead-end road, the path could continue following closely to the railroad tracks or it may diverge to the southeast. Both options provide the opportunity to cross the Hoosic River on a new trail bridge described in Sections 6B and 6C. Continuing along the rail corridor would require additional property research as the railroad property line shifts north as the West Main Street ROW veers southeast leaving a privately owned parcel in between that would likely be impacted by the NAAT alignment approach to the Hoosic River crossing.

Figure 19—Bidirectional shared-use path recently installed on a Route 122 bridge in Cumberland, Rhode Island

Figure 20—Looking east down Route 2 at Roberts Drive

Figure 21—Looking east between rail corridor and West Main Street

Figure 22—Concept 1, Segment 6



Concept 1 Segment 6

At-grade path adjacent and parallel to Hoosic River from Route 2 to the rail ROW

Segment 6a The preferred NAAT alignment runs along the riverbank from Route 2 to the railroad corridor (see Figure 23). Property ownership varies between public and private adjacent to the river and would need to be confirmed in next stages of planning and design. It is likely an easement for the path will be required along some portions of this section, especially north of the old West Main Street dead-end stub.

The approach to the rail corridor requires felling a number of trees to provide space for the 10-foot path and required offsets. Because of the height of the rail corridor embankment, a path crossing under the rail corridor may be the preferred option. The preference is that the NAAT can stay on a consistent level and will not be required to dip below grade when passing under the tracks. Similar to the new Norwottuck Rail Trail underpass in Northampton or the Blackstone River Greenway in Blackstone, the intent is for a pre-cast concrete or metal culvert or tunnel to be installed below the tracks with minimal disruption to rail service above (see Figure 24).

Segment 6b As another alternative to using the existing Route 2 bridge, the NAAT alignment could cross the Hoosic River on a new trail bridge that runs along the old West Main Street alignment (see Figure 25). This option could possibly take advantage of the existing foundations and abutments of the former roadway bridge over the river. A structural analysis of the abutments on each riverbank will be required to understand if reuse is possible. A potentially more feasible approach would be to build new bridge abutments behind the walls and span the floodwalls and river. Because this option crosses the river at a close-to-perpendicular angle, it has a higher potential to cross the river in a single span with minimal disruption to the riparian environment. A single span bridge would also minimize impacts to the river hydraulics and US Army Corps of Engineers (USACE) facilities. After crossing the river, the NAAT would incorporate a similar alignment and travel along the river and cross under the railroad tracks, as described in Section 6A above. This segment would provide a landmark bridge opportunity and should be considered as a future project if not included in the initial preferred alignment.

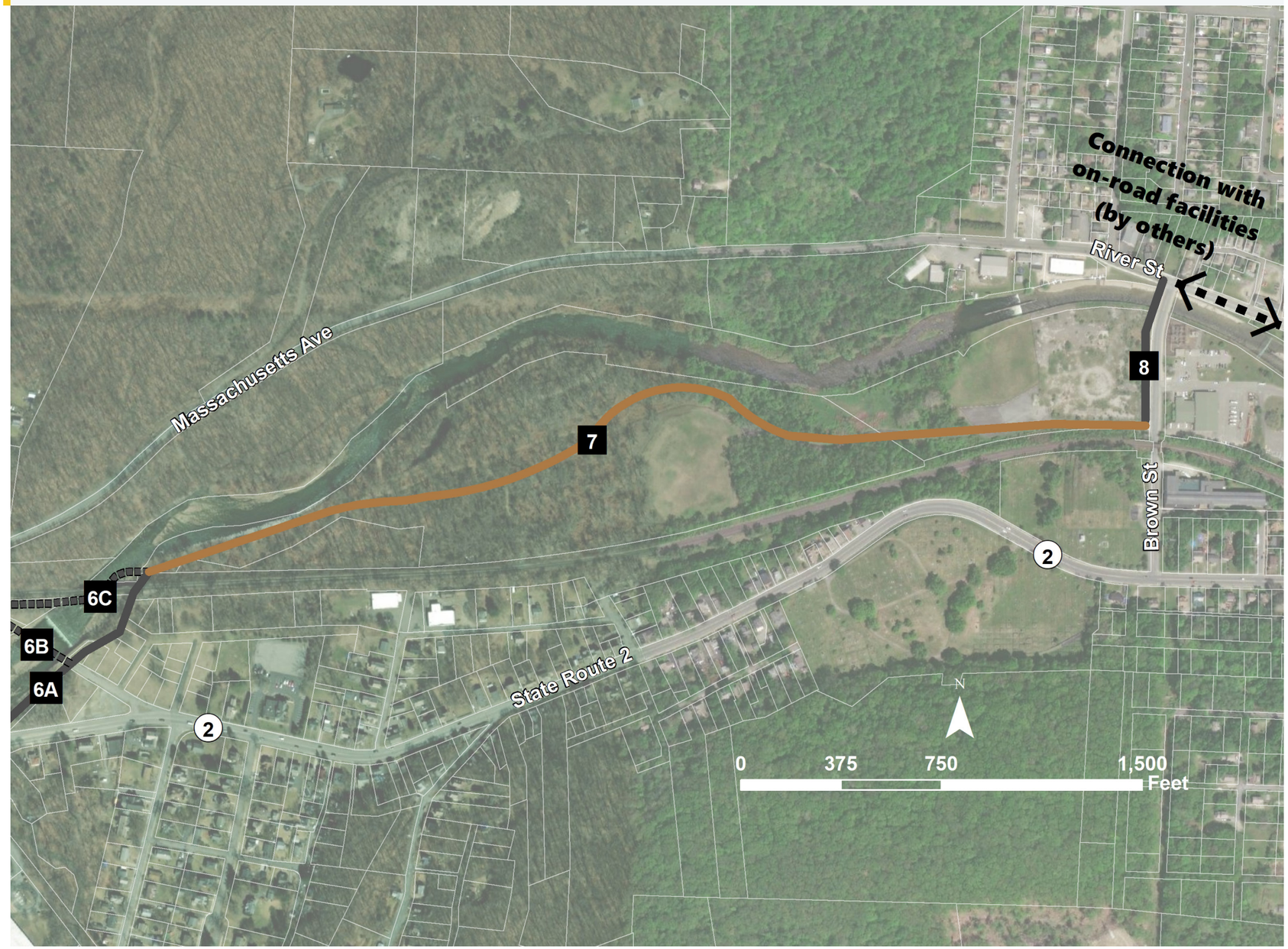
Segment 6c As an alternative to using the existing Route 2 bridge to cross the Hoosic River, the NAAT alignment could cross the river on a new trail bridge. This option crosses the river adjacent to, and directly below, the existing rail bridge. The NAAT bridge would cross the river at an angle and immediately turn to the north-east at the abutment on the south bank of the river. The path would cross under the bridge—potentially on piles or piers in the river—until reaching a stable area where the path could veer into the wooded property between the rail line and the river. This work constitutes filling of the river floodway and floodplain and would most likely impact the river hydraulics and USACE flood facilities and present maintenance challenges. It is unlikely that this alternative would be eligible for approval from USACE as the least environmentally damaging practical alternative. This alignment may not be able to meet required vertical clearances under the railroad bridge. Additional analysis would be necessary.

Figure 23—Looking southwest towards Route 2 along south riverbank with West Main Street stub in foreground

Figure 24—Blackstone River Greenway Underpass

Figure 25—View looking from West Main Street corridor at north bank of river

Figure 26—Concept 1, Segment 7



Concept 1 Segment 7

At-grade path along fairgrounds parcel to Brown Street adjacent to Hoosic River

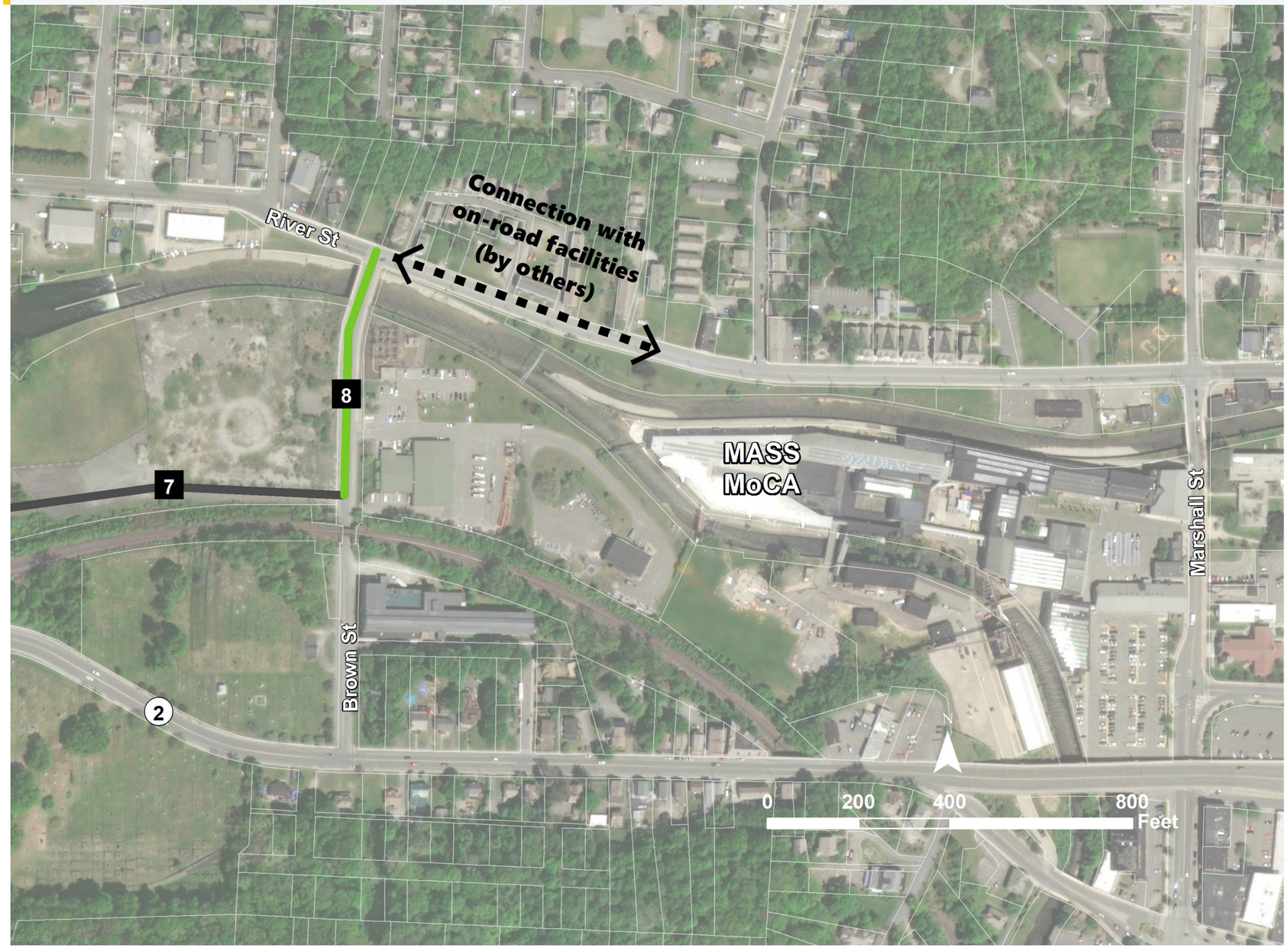
Segment 7 After crossing the river and the rail corridor, the NAAT would continue east through the fairgrounds property, utilizing an existing path where possible (see Figure 27). Wetlands exist in the area and verification and/or delineation of the wetlands as well as other regulated buffer areas would be necessary within this segment of the path. As the final alignment is identified, coordination with the City of North Adams Conservation Commission regarding potential work within the riverfront area and/or buffer zone would also be necessary. The fairgrounds parcel is currently under private ownership and coordination with the owner would be necessary. Historically, there has been use of hazardous materials on the property, so further investigation would be required to ensure minimal disruption and/or mitigation requirements and determine if coordination with DEP and development of a soil management plan or best management practices during construction in accordance with MassDEP's guidance on developing rail trails would be required. There appears to be active monitoring throughout the fairgrounds parcel and the surrounding parcels, as there are a number of well-worn paths and paved driveway access for about 1,500 feet from Brown Street (see Figure 28).

On the approach to Brown Street, the NAAT alignment could either remain closer to the edge of the river while minimizing impact to the riverfront area or run along the active paved driveway between Brown Street and the fairgrounds. The latter reduces the likelihood of disturbing contaminated soils on the former industrial site closer to the Hoosic River.

Figure 27—Existing path through fairgrounds parcel

Figure 28—Existing path through fairgrounds intersecting with paved driveway

Figure 29—Concept 1, Segment 8



Concept 1 Segment 8

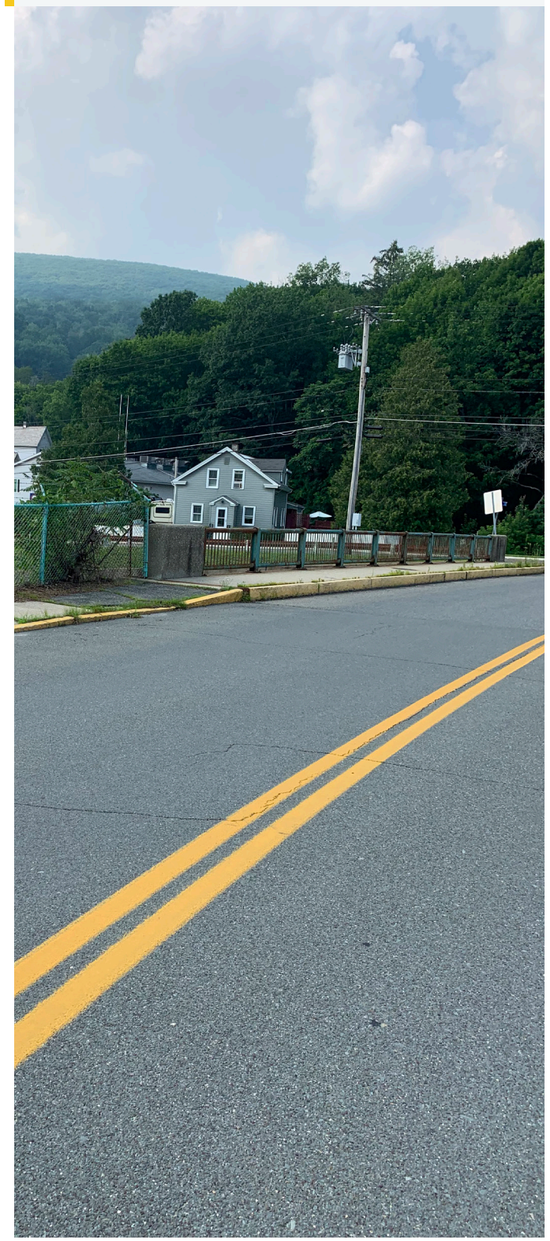
On-road shared-use path along western edge of Brown Street

Segment 8 At Brown Street, the NAAT corridor turns north and runs along the west side of the roadway to River Street. Currently, the 50-foot-wide ROW contains 7-foot sidewalks on each side with an approximately 34-foot roadway that contains two wide travel lanes (see Figure 30). As Brown Street crosses the Hoosic River, the roadway widens slightly to 36 feet, flanked by 7-foot sidewalks to form a 50-foot-wide bridge. Retrofitting the roadway for trail use requires narrowing the curb-to-curb width of the roadway to 30 feet—two 11-foot travel lanes with 4-foot shoulders—and widening the west sidewalk to 12 feet including a crash barrier/guard rail (If adequate 5-foot separation/buffer cannot be provided without significant impacts to widen the roadway or bridge.) adjacent to the curb (10-foot clear). At the intersection with River Street, coordination with the proposed bicycle facilities on River Street is required to ensure an effective transition. At the very least, enhanced pedestrian crossing signs and pavement markings are recommended across Brown Street to better connect pedestrians from the west side path to the south sidewalk on River Street.

Note The centerline shift of 2 feet to the east may trigger the need for a mill and resurfacing effort to adjust the roadway crown and would need to be further analyzed. Impacts to existing roadway drainage system would need to be evaluated. Additionally, structural analysis of the Brown Street bridge and modification of the bridge joints would be required to accommodate the wider concrete sidewalk and crash barrier.

Figure 30—Looking north along Brown Street towards River Street

Figure 31—Looking north at west side of Brown Street bridge



Concept 1

	Limits	Length	Type	Right-of-Way Actions	Active Railroad Right-of-Way	Roadway Crossings	Railroad Crossings	FEMA Floodplain	Wetlands	Habitat	Comments	Difficulty
1a	**NAAT Section 2 Trailhead to Southern Edge of Railroad ROW**	25 feet	On-road	Possible strip taken adjacent to road	No	1					Property would be impacted by NAAT Section 2 as well, potentially easing process	Low
1b	**NAAT Section 2 Trailhead to Northern Edge of Railroad ROW**	125 feet	On-road	Possible strip taken adjacent to road	No	1	1				Property would be impacted by NAAT Section 2 as well; would require at-grade crossing of railroad	Low
2a	**Protection Avenue to Demond Avenue**	1,750 feet	Off-road	Possible impact to parcels south of path; could be avoided	Yes	1					Would require benchcut in rail berm and provision of trees and shrubs for privacy for residents	Moderate
2b	**Protection Avenue to Demond Avenue**	1,175 feet	Off-road	Possible impact to parcels north of path; could be avoided	Yes	1			Approximately 1,000 linear feet of potential wetlands impact		Wetlands area adjacent to rail berm would require elevated boardwalk; railroad utility poles would need to be removed; requires on-road shared section along Demond Avenue under bridge (~20 feet roadway)	High
3	**Demond Avenue to Roberts Drive**	1,135 feet	Off-road	Possible impact to parcels south of path; could be avoided	Yes	1					Would require benchcut in rail berm and crossing Roberts Drive	Moderate
4	**West Main Street to Route 2**	625 feet	On-road separated path		No			Path located in 100-year floodplain			May have utility impacts (utility poles and/or hydrant); Several historic properties located adjacent to the roadway, but no impact anticipated	Low
5a	**Roberts Drive to Brayton Hill Terrace**	770 feet	On-road		No			Path located in 100-year floodplain		Path along Route 2 located in GIS-mapped priority habitat associated with the Hoosic River	Bidirectional path along Route 2 would require concrete barrier; structural analysis of bridge necessary; may impact utility pole	Low
5b	**Roberts Drive to Hoosic River**	975 feet	Off-road		Yes			Path located in 100-year floodplain		Path travels through GIS-mapped priority habitat associated with the Hoosic River	May have utility impacts (utility poles and/or culverts)	Low
6a	**Route 2 to Railroad ROW**	880 feet	Off-road	Mix of public/private ownership, some private impact likely; crosses under the railroad ROW	Yes		1			Path travels through GIS-mapped priority habitat associated with the Hoosic River	Runs adjacent to headwall for Hoosic River, may require coordination with ACOE; includes crossing under railroad ROW; both public and private property ownership	Low
6b	**Hoosic River Crossing**	750 feet	Off-road river crossing	Crosses under the railroad ROW	Yes		1	Path located in 100-year floodplain		Path travels through GIS-mapped priority habitat associated with the Hoosic River	Need to verify condition of existing structural elements; would likely require ACOE coordination; includes crossing under railroad ROW; USACE Flood Protection Project Coordination could be required	Moderate
6c	**Hoosic River Crossing**	500 feet	Off-road river crossing	Crosses under the railroad bridge	Yes		1	Path located in 100-year floodplain	Touchdown point on east bank of river would likely impact wetlands	Path travels through GIS-mapped priority habitat associated with the Hoosic River	Would require significant coordination with USACE and with operating railroad for allowance under the bridge; USACE Flood Protection Project Coordination could be required	High
7	**Hoosic River to Brown Street**	4,075 feet	Off-road	Entire segment is within private property	No			Path located in 100-year floodplain	Approximately 2,400 linear feet of potential wetlands impact	Path travels through GIS-mapped priority habitat associated with the Hoosic River	Potential hazardous materials concerns throughout this site; wetland locations should be field verified	Moderate
8	**Brown Street to River Street**	545 feet	Off-road		No	1					Plenty of ROW, but curb and utility adjustments may be necessary; structural analysis of bridge necessary	Low

Concept 1—Potential Construction Cost Estimate

	Description	Length	Type	Approximate Cost/Feet	Potential Construction Cost	Notes
1a	Protection Avenue Crossing	25 feet	Roadway/Shared Use Path	$900.00	$22,500.00	Transition from off-road to on-road and provide bicycle accommodations on roadway.
1b	Protection Avenue Crossing*	125 feet	Roadway/Shared Use Path	$900.00	$142,500.00	Transition from off-road to on-road and provide bicycle accommodations on roadway. Add warning flashers for trains, ideally solar powered and alternative train detection outside railroad ROW so an annual agreement with railroad company is not needed. Say +$30,000 for flashers.
2a	Benchcut Path in Rail Berm	1,750 feet	Benchcut Path	$700.00	$1,225,000.00	Benchcut path along rail berm gradually sloping down to meet grade at Demond Avenue. Assumes a wall along the entire stretch ($500/foot for wall, $200/foot for path).
2b	Elevated Boardwalk (Not Typical)*	1,175 feet	Boardwalk Elevated	$1,200.00	$2,130,000.00	Boardwalk that elevates to cross railroad at-grade just before Demon Avenue bridge. Assume boardwalk to gradually elevate to reach railroad elevation. All through wetlands. If new railroad crossing is not allowed, consider signalizing narrow roadway under bridge with trail to alternate bike-auto traffic.
3	Demond Avenue to Roberts Drive Benchcut Path	1,135 feet	Benchcut Path	$700.00	$794,500.00	Benchcut path between rail berm and industrial property. Assumes a wall along the entire stretch ($500/foot for wall, $200/foot for path).
4	Roberts Drive Side Path	625 feet	Path	$1,200.00	$750,000.00	Roadway improvement to account for trail. Possibly roadway improvements for converting existing sidewalks to shared use path on Roberts Drive.
5a	On-Road (Route 2) Separated Path	770 feet	Path	$900.00	$763,000.00	Bi-directional path along Route 2 would require +/-350-foot length concete barrier along bridge. Assume $200/foot for concrete barrier = $70,000
5b	Path to Hoosic River*	975 feet	Path	$200.00	$545,000.00	At-grade path adjacent to railroad and West Main Street. Potential utility pole impacts and relocations +$200,000. Assume 300 feet of retaining wall ($500/foot for wall = +$150,000).
6a	Path to Railroad ROW from Route 2, including Tunnel Under	880 feet	Path/Tunnel	$200.00	$736,000.00	At-grade path and tunnel under railroad. Assume 40-foot culvert at $14,000/linear foot = $560,000
6b	Hoosic River Crossing*	350 feet	Pre-Fab Bridge Truss	$5,500.00	$2,125,000.00	Determine if feasible and what is needed to permit and construct, think ice dams, flood elevations, etc. Priced as bridge.
6c	Hoosic River Crossing*	200 feet	Pre-Fab Bridge Truss	$5,500.00	$1,660,000.00	Need analysis to determine condition of existing abutments. Determine span length based on and if they are usable, or if they part of the flood barrier and off limits). Alternative includes tunnel under railroad. Assume 40-foot culvert at $14,000/linear foot = $560,000
7	Path in Fairgrounds to Brown Street	1,675 feet	Boardwalk/Path	$200.00	$3,215,000.00	Segments of boardwalk likely necessary based on GIS wetlands mapping, need field verification. Assuming 2,400 feet of boardwalk and 1,675 feet of path for estimate purposes (boardwalk = $1,200/foot).
8	Brown Street	545 feet	Roadway/Shared Use Path	$900.00	$490,500.00	Roadway improvement to account for trail, no new bridge on Brown Street. Possibly bridge modifications and roadway improvements for converting existing sidewalks to shared use path.

Linear Feet—14,135 feet | Miles—2.68	$7,996,500.00	(see first Note)
Desktop Concept Design Contingency For Unknowns—15%	$1,199,475.00	15%
Landscaping, Hardscaping, Wayfinding, Lookouts, Furnishings, etc	$200,000.00	Allowance for landscaping items along the path includes: benches, bike racks, repair stations, and trash receptacles.
Traffic Management—1%	$79,965.00	MassDOT Standard Contingencies.
Mobilization—3%	$239,895.00	
Police Details—3%	$239,895.00	
MassDOT Construction Engineering—10%	$799,650.00	
Construction Contingency—10%	$799,650.00	
Subtotal	**$11,555,030.00**	
Inflation (3% per year over 7 years)	$2,656,199.41	MassDOT Typical Inflation for TIP Projects to project out to future funding year. 3–4%.
Total Easterly Section	**$14,211,229.41**	
SAY	**$14,300,000.00**	

This estimate has been prepared with the following assumptions and is for planning purposes only:

- Survey, geotechnical evaluations, design, and permitting has not been completed.
- Concept plans included as part of the North Adams Adventure Trail Feasibility Study (Phase II—MassDOT Planning Phase) dated 10/04/2021 were developed using MassGIS information and simple line work on an aerial to depict existing and proposed conditions.
- Linear foot construction costs are based on other projects that are in various design stages, including the Ashuwillticook Rail Trail in Adams/North Adams (25%), Williamsburg Greenway/Route 9 Williamsburg (25%), North Adams Adventure Trail (NAAT) Feasibility Study Phase 1 (Concept), and a review of various bid prices from recent MassDOT TIP projects.
- ROW actions such as acquisitions or temporary/permanent easements have not been conducted.
- A desktop concept design contingency was added.

Additional Notes

- Construction cost is for Preferred Alignments (labeled with an "A")
- Assume 10-foot path for trail with 2-foot shoulders to minimize wetland impacts and disturbance in riverfront and flood plain areas.
- Easements for path with railroad ROW will require approval from railroad ROW and approval from Public Utilities Commission.
- ROW acquisitions, easements, etc. must follow the ROW process as per the MassDOT Right of Way Bureau under Massachusetts General Laws Chapter 79.
- 5,000 SF of direct wetland impacts will require a Variance through DEP, could be challenging to get approvals.
- Other than impacts noted above, utility impacts anticipated to be negligible.
- From a ROW, design and permitting perspective, the path through MassMoCA should not be included as part of the MassDOT design process.
- No Path/Street Lighting are included.
- Bridges and boardwalks have been assumed to be H-20 Loading for emergency vehicles, a typical requirement for MassDOT projects.
- Cost for RR flagging not included.

Concept 2

Summary of Proposed NAAT Alignment and Alternate Segments

Concept 2 primarily follows the State Route 2 corridor from Protection Avenue to Brown Street as a separated bike facility sharing the existing roadway ROW. Between Protection Avenue and Roberts Drive, the roadway consists mostly of one travel lane in each direction, a center-turning lane, shoulders, grass strips, and sidewalks on both sides. East of Notch Road, Route 2 is no longer under MassDOT jurisdiction and converts to one travel lane in each direction, wide shoulders that can accommodate parking, and sidewalks on both sides.

Figure 32—Concept 2

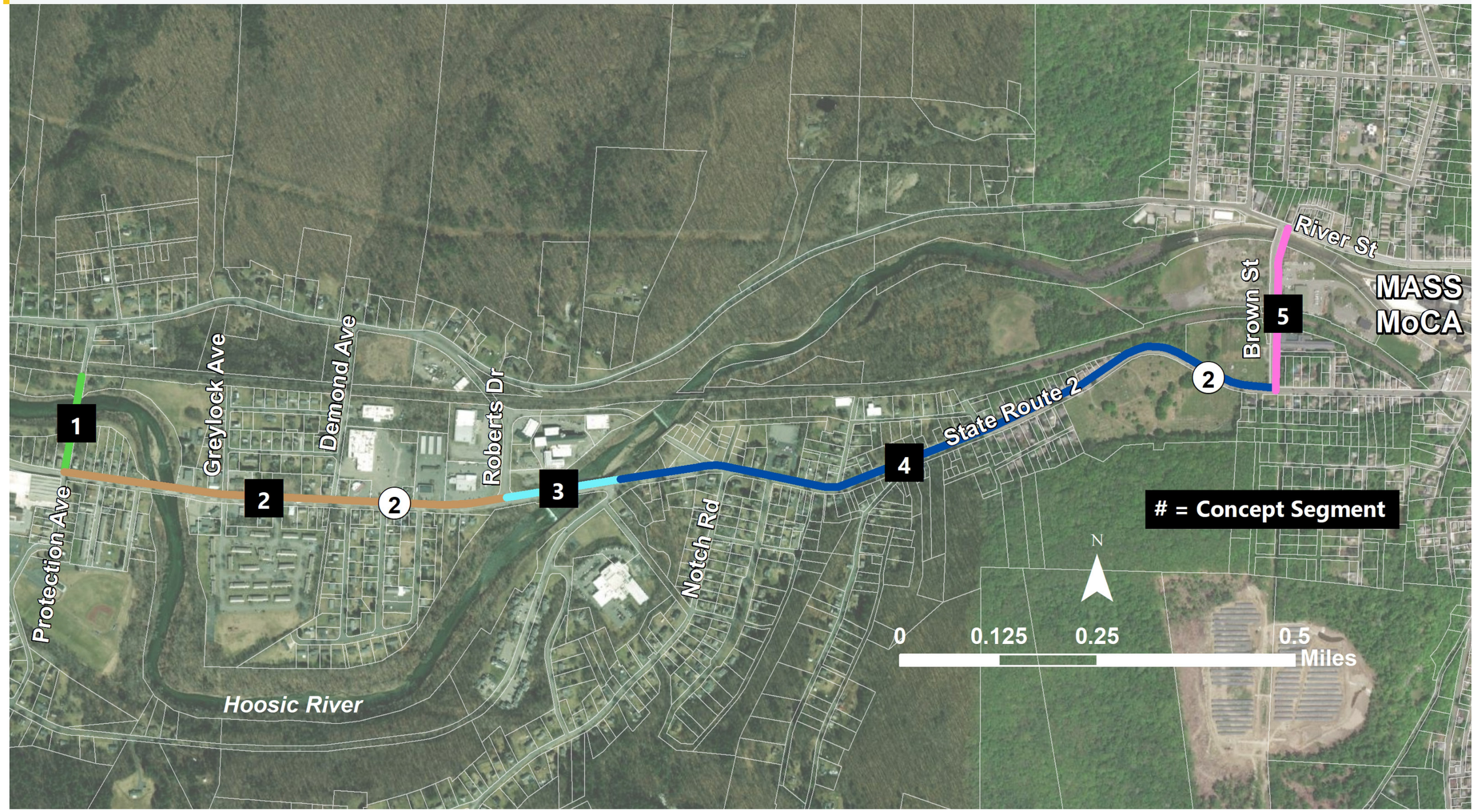


Figure 33—Concept 2, Segment 1

Concept 2 Segment 1

On-road shared use path along western edge of Protection Avenue (10 feet wide along roadway; 8 feet on the bridge segment)

Segment 1 As the future NAAT intersects Protection Avenue from the west, the path turns south and runs along the west side of the roadway to Route 2. Currently, the approximately 40-foot-wide ROW contains a 6-foot-wide sidewalk on the west side with a 24–28-foot roadway that includes two wide travel lanes (see Figure 34). Some segments feature a 3–4-foot wide shoulder, primarily on the bridge across the Hoosic River. Retrofitting the roadway for the NAAT requires extending the existing west sidewalk north to reach the future trailhead and narrowing the roadway width to a consistent 24 feet from end to end. This affords the opportunity for a consistent 10-foot-wide sidewalk/path from the trailhead to Route 2, except for the portion along the bridge which would be narrowed to 8 feet. At approximately 125 feet north of Route 2, a tree and a utility pole create a bottleneck (see Figure 35). The tree may need to be removed to ensure a consistent path width of 8 feet minimum. A structural analysis and modification of the bridge joints are required to accommodate the NAAT on the bridge.

Figure 34—Looking south along Protection Avenue towards Route 2

Figure 35—Looking north at Protection Ave intersection with Route 2

Figure 36—Concept 2, Segment 2

Concept 2 Segment 2

On-road shared-use path along the northern edge of Route 2 between Protection Avenue and Roberts Drive (10 feet wide along roadway; 8 feet on the bridge segment)

Segment 2 The north-south-running sidepath turns east at the south end of Protection Avenue and continues as a 10-foot-wide sidepath along the north side of State Route 2 to Roberts Drive. Currently, Route 2's 68-foot–70-foot wide ROW features an approximately 40-foot roadway flanked by 5-foot sidewalks with 7-foot–8-foot wide grass strip that contains signs and, on the north side, utility poles (see Figure 37). The roadway includes 11-foot travel lanes in each direction, a 14-foot two-way left turn median, and approximately 2-foot shoulders on each side. From Greylock Avenue west to the Hoosic River bridge, the cross-section changes to accommodate a retaining wall approaching the bridge and then for the bridge abutments (see Figure 38). This section would need to be analyzed closer in the next phase of design to identify the best way to adjust the cross-section to accommodate the path as well as utility poles and hydrant within and adjacent to the sidewalk.

The preferred design for the NAAT includes the removal of the north side grass strip, widening the existing sidewalk to 10 feet (asphalt or concrete) and adding a 3-foot bricked paver zone adjacent to the roadway to host a crash barrier and for relocated utility poles. At numerous locations along Route 2, wide commercial curb cuts disrupt the continuity of the sidewalks. At these locations, access management strategies are to be used to consolidate and/or narrow the curb cuts. Green pavement markings should be added to highlight the conflict zones.

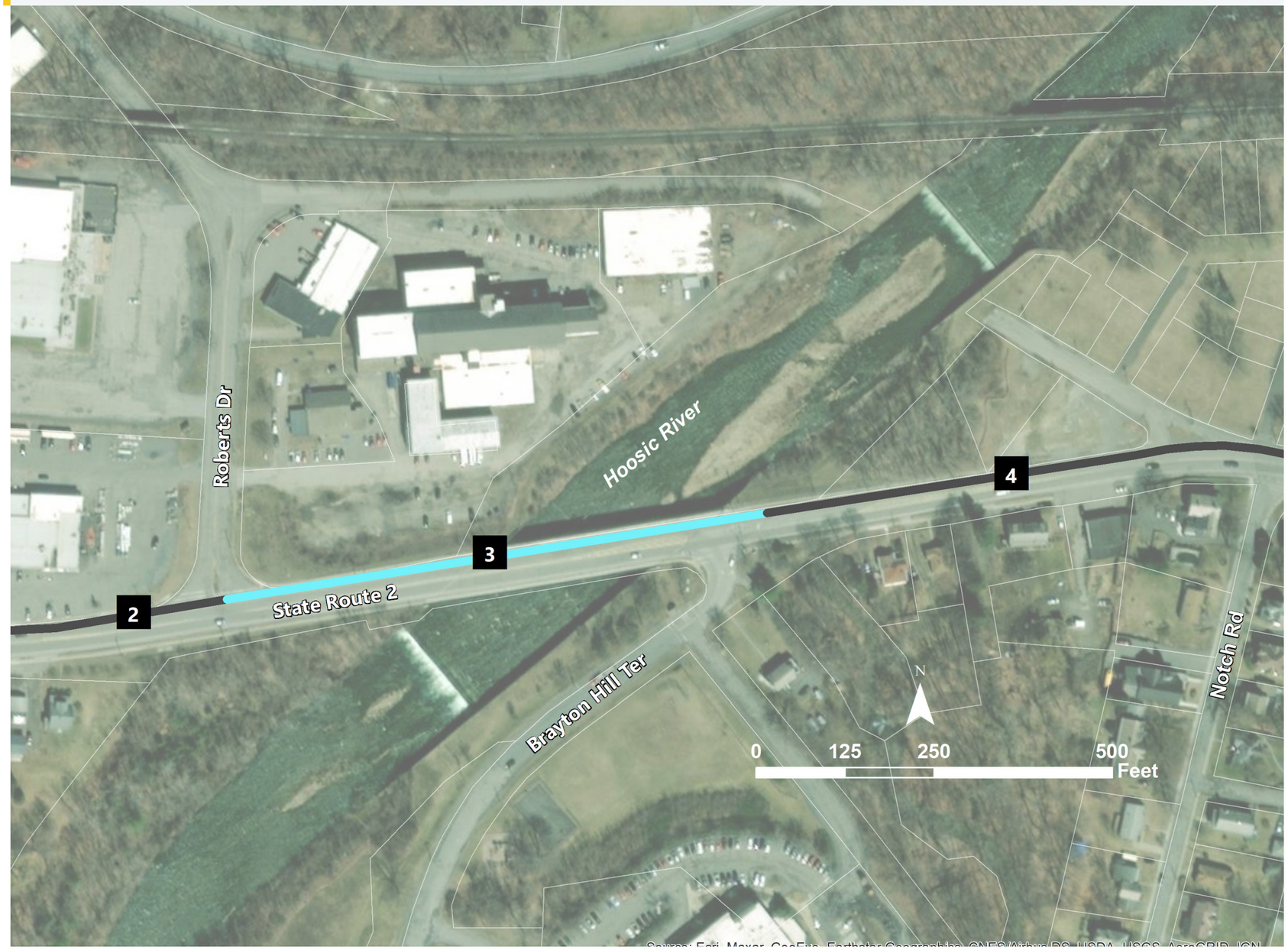
Due to the metal trusses on a portion of the bridge over the Hoosic River, the NAAT alignment would include a constrained width of 7–8 feet using the existing sidewalk adjacent to the truss (see Figure 39). However, MassDOT has identified this bridge for replacement and the design is underway. If this section of path is determined to be part of the preferred alignment, MassDOT OTP will coordinate with the MassDOT bridge project team to identify opportunities to accommodate the path within the future bridge cross-section.

Figure 37—Looking west along Route 2 between Demond Avenue and Greylock Avenue

Figure 38—Looking west towards Hoosic River bridge

Figure 39—Existing trusses and sidewalk on Hoosic River bridge

Figure 40—Concept 2, Segment 3



Concept 2 Segment 3

On-road shared-use path along the northern edge of State Route 2 between Roberts Drive and Brayton Hill Terrace (10 feet wide along roadway; 8 feet on the bridge)

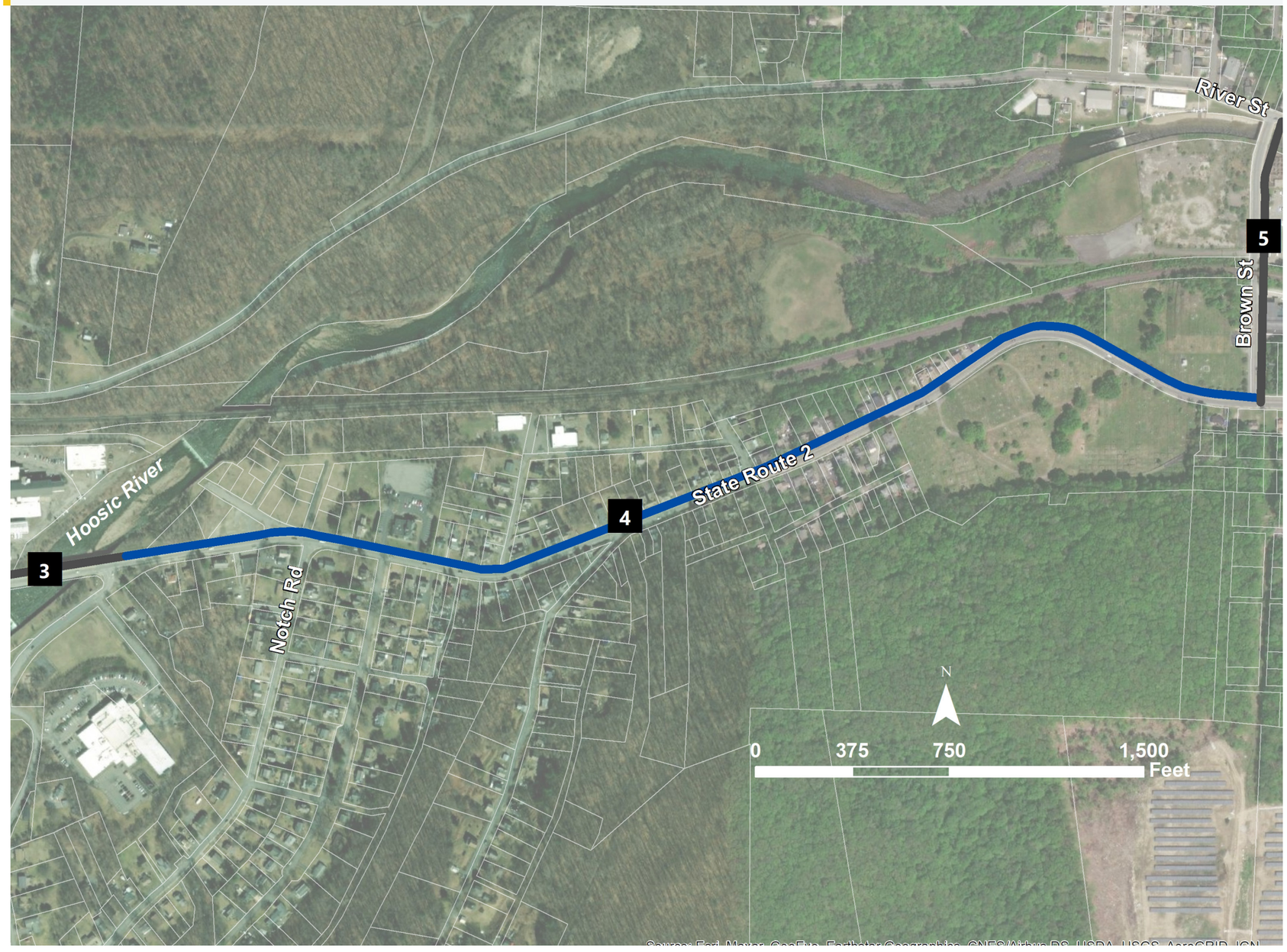
Segment 3 After crossing Roberts Drive on an enhanced crosswalk (with wider curb ramps), the NAAT sidepath continues along the north side of Route 2. The 10-foot-wide sidepath tapers to approximately 8 feet in width to meet the existing sidewalk on the north side of the Route 2 bridge over the Hoosic River. One utility pole would need to be relocated to the north side of the existing guard rail to accommodate the 8-foot path between the guardrail and existing granite curb (see Figure 41).

The existing sidewalk on the Hoosic River bridge would serve as the NAAT alignment. Because it does not meet the 10-foot-wide standard for a shared use path, a concrete barrier could be installed in the shoulder area, along the length of the bridge. This would increase the comfort level of path users, especially eastbound bicyclists facing westbound motor vehicle traffic. A structural analysis and modification of the bridge joints are required to accommodate the NAAT on the bridge (see Figure 42). This segment would need to coordinate with improvements proposed in the Brayton Elementary School Safe Routes to School project.

Figure 41—Looking east along Route 2 at Roberts Drive

Figure 42—Looking east along Route 2 bridge

Figure 43—Concept 2, Segment 4



Concept 2 Segment 4

On-road shared-use path along the northern edge of State Route 2 between Brayton Hill Terrace and Brown Street

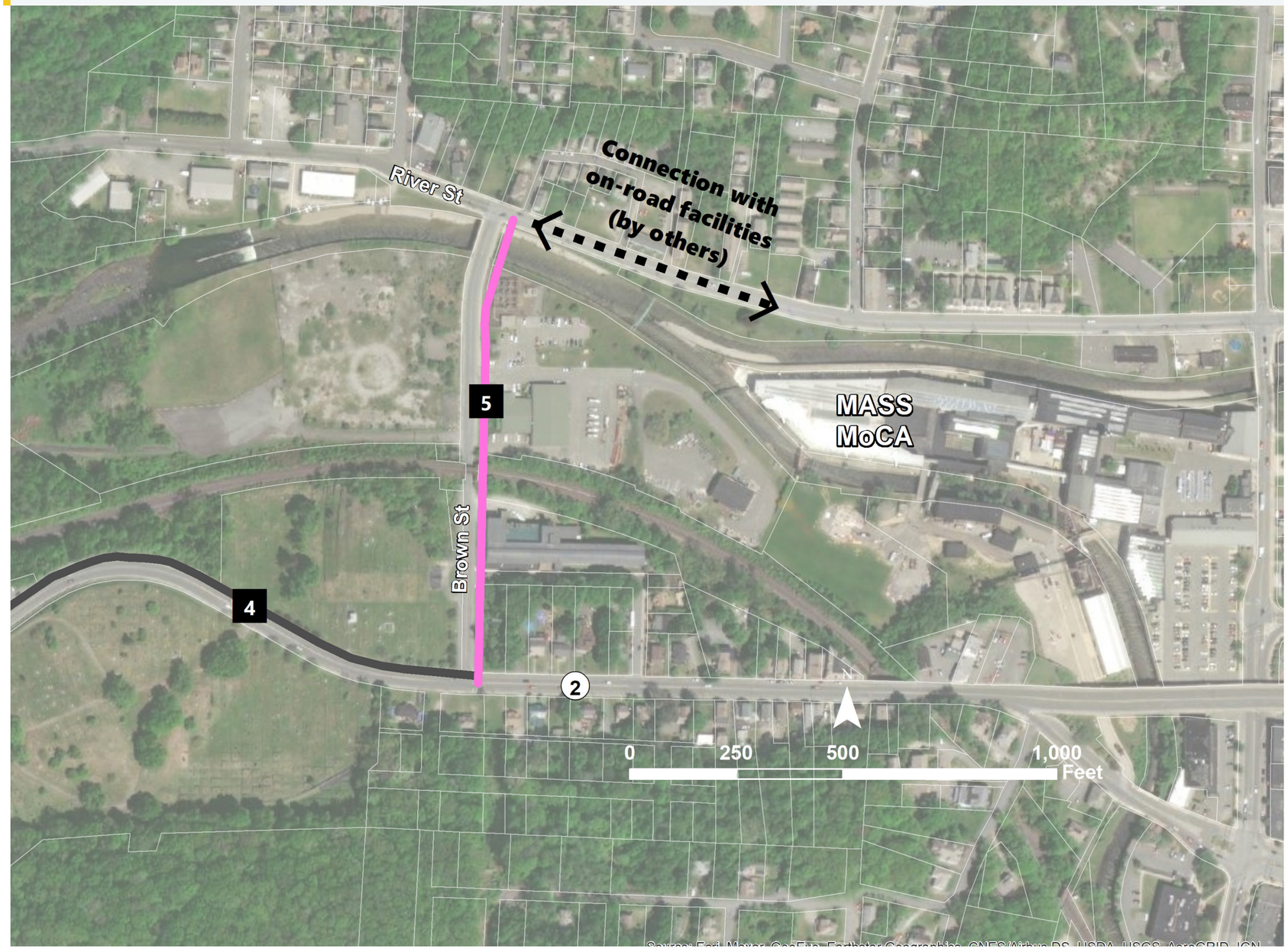
Segment 4a East of the Hoosic River bridge at Brayton Hill Terrace, Route 2's ROW narrows to 56 feet and narrows further to 52 feet east of Richview Avenue. From the bridge to Brown Street, the 42-foot roadway includes a pair of 13-foot travel lanes with approximately 8-foot shoulders on each side (see Figure 44). The preferred option for the NAAT, similar to Segments 2 and 3 above, would feature a minimum 8-foot-wide sidepath on the north side. This requires relocating the north curb 4 feet–6 feet closer to the center of the roadway and restriping the road with 11-foot travel lanes and 6-foot–7-foot shoulders. During design narrower shoulders could be explored (4 feet) but functionality of the shoulder would need to be discussed with the City or MassDOT. Relocation of catch basins and utility poles (north side only) along the length of the section would be required.

Segment 4b An alternative option would leave the sidewalks untouched from the Hoosic River bridge to Brown Street. Instead, the roadway would be restriped with 8-foot-wide buffered bike lanes in each direction (with white delineator posts set within the 3-foot buffer). Doing this requires the removal of parking on both sides. Transitions for eastbound bicyclists who must depart the sidepath on the north side and use the eastbound bike lane on the south side of Route 2 would need to be carefully considered. The transition for eastbound bicyclists would occur at the Brayton Hill Terrace signalized intersection and at the existing crosswalk at Brown Street to access the sidepath described in Segment 5.

Note Relocating the north curb and shifting the centerline 2 feet–3 feet to the south in the preferred options likely triggers the need for a mill and repaving effort to adjust the roadway crown. Impacts to existing roadway drainage system would need to be evaluated.

Figure 44—Looking east along Route 2 towards Richview Avenue

Figure 45—Concept 2, Segment 5



Concept 2 Segment 5

On-road shared-use path along eastern edge of Brown Street

Segment 5 At Brown Street, the NAAT corridor turns north and runs along the east side of the roadway to River Street. South of the rail corridor, the 50-foot-wide ROW includes a 7-foot sidewalk on the east side with an approximately 34-foot roadway that contains two wide travel lanes. At the rail overpass, the roadway narrows to 18 feet with a 3-foot–4-foot wide sidewalk. North of the rail corridor, the 50-foot-wide ROW includes 7-foot sidewalks on each side with an approximately 34-foot roadway with two wide travel lanes. As Brown Street crosses the Hoosic River, the roadway widens slightly to 36 feet, flanked by 7-foot sidewalks to form a 50-foot-wide bridge.

Retrofitting the roadway for trail use requires narrowing the curb-to-curb width of the roadway to 30 feet—two 11-foot travel lanes with 4-foot shoulders—and widening the east sidewalk to 12 feet, which includes a crash barrier/guard rail at the top of the curb (10 feet clear). At the rail overpass, only 21–22 feet total is available (see Figure 46). Here, the east sidewalk narrows to 8 feet (no guardrail) with a 14-foot-wide travel lane requiring motor vehicle queueing, similar to what is proposed in Concept 1, Segment 2B (as a precaution for emergency vehicles, a beveled/rolled curb provides an opportunity for emergency vehicles to use the sidewalk if necessary). At the north termination of the NAAT, coordination with the proposed on-road bicycle facilities on River Street would provide an effective transition.

Note The centerline shift of 2 feet to the west may trigger the need for a mill and resurfacing effort to adjust the roadway crown. Impacts to existing roadway drainage system would need to be evaluated. Additionally, structural analysis of the Brown Street bridge and modification of the bridge joints would be required to accommodate the wider concrete sidewalk and crash barrier.

Figure 46—Looking north along Brown Street at the rail crossing

Concept 2

	Limits	Length	Type	Right-of-Way Actions	Active Railroad Right-of-Way	Roadway Crossings	Railroad Crossings	FEMA Floodplain	Wetlands	Habitat	Comments	Difficulty
1	**NAAT Section 2 Trailhead to Route 2**	665 feet	On-road		No						Curb adjustments, utility relocations and tree removal would be necessary; structural analysis of bridge necessary	Low
2	**Protection Avenue to Roberts Drive**	2,980 feet	On-road	Possible impact on east side of bridge	No	3		Path located in 100-year floodplain		Path along Route 2 located in GIS-mapped priority habitat associated with the Hoosic River	Approaches to bridge taper would need more detailed alignment location, may impact utility poles/ hydrants; existing trusses on bridge create pinchpoint, bridge replacement project may accommodate wider path; structural analysis of bridge necessary	Moderate
3	**Roberts Drive to Brayton Hill Terrace**	770 feet	On-road		No			Path located in 100-year floodplain		Path along Route 2 located in GIS-mapped priority habitat associated with the Hoosic River	Portion along the bridge would require concrete barrier; structural analysis of bridge necessary; may have utility impact (pole)	Moderate
4a	**Brayton Hill Terrace to Brown Street**	5,183 feet	On-road bidirectional shared use path		No	4					Would require curb modifications and utility relocations (catch basins, utility poles); would require removal of on-street parking on one side	Low
4b	**Brayton Hill Terrace to Brown Street**	5,183 feet	On-road bike lanes in both directions		No	10 (total for both sides)					Would require removal of on-street parking on both sides; complicated transition from bidirectional shared use path to bike lanes on each side	Low
5	**Route 2 to River Street**	1,110 feet	On-road		No		1	Path located in 100-year floodplain			Requires curb modification; would require narrowing to one travel lane and the path under the rail bridge requiring vehicle queuing	Low

Concept 2—Potential Construction Cost Estimate

	Description	Length	Type	Approximate Cost/Feet	Potential Construction Cost	Notes
1	Protection Avenue to Route 2	665 feet	Roadway/Sidepath SUP	$900.00	$598,500.00	Sidepath shared use path.
2	Route 2 from Protection Avenue to Roberts Drive	2,980 feet	Roadway/Sidepath SUP	$900.00	$2,982,000.00	Separated shared use path with buffer. Would require concrete barrier for +/-500 feet due to narrower ROW From the western edge of the Hoosic River bridge to Greylock Drive. Assume $200/foot for concrete barrier = $100,000. Potential utility pole impacts and relocations +$200,000.
3	Route 2 from Roberts Drive to Brayton Hill Terrace	770 feet	Roadway/Sidepath SUP	$900.00	$963,000.00	Separated shared use path with buffer. Would require +/-350-foot length concete barrier along bridge. Assume $200/foot for concrete barrier = $70,000. Potential utility pole impacts and relocations +$200,000.
4	Route 2 from Brayton Hill Terrace to Brown Road	5,183 feet	Roadway/Sidepath SUP	$900.00	$5,064,700.00	Separated shared use path with buffer. Potential utility pole impacts and relocations +$200,000.
5	Brown Street from Route 2 to River Street	1,110 feet	Roadway/Sidepath SUP	$1,100.00	$1,221,000.00	Separated shared use path with buffer. Would likely require concrete barrier the entire stretch.

This estimate has been prepared with the following assumptions and is for planning purposes only:

- Survey, geotechnical evaluations, design, and permitting has not been completed.
- Concept plans included as part of the North Adams Adventure Trail Feasibility Study (Phase II—MassDOT Planning Phase) dated 10/04/2021 were developed using MassGIS information and simple line work on an aerial to depict existing and proposed conditions.
- Linear foot construction costs are based on other projects that are in various design stages, including the Ashuwillticook Rail Trail in Adams/North Adams (25%), Williamsburg Greenway/Route 9 Williamsburg (25%), North Adams Adventure Trail (NAAT) Feasibility Study Phase 1 (Concept), and a review of various bid prices from recent MassDOT TIP projects.
- ROW actions such as acquisitions or temporary/ permanent easements have not been conducted.
- A desktop concept design contingency was added.

Linear Feet—14,135 feet | Miles—2.68	$10,829,200.00	
Desktop Concept Design Contingency For Unknowns—15%	$1,624,380.00	15%
Landscaping, Hardscaping, Wayfinding, Lookouts, Furnishings, etc	$200,000.00	Allowance for landscaping items along the path includes: benches, bike racks, repair stations, and trash receptacles.
Traffic Management—1%	$108,292.00	
Mobilization—3%	$324,876.00	
Police Details—3%	$433,168.00	MassDOT Standard Contingencies.
MassDOT Construction Engineering—10%	$1,082,920.00	
Construction Contingency—10%	$1,082,920.00	
Subtotal	**$15,685,756.00**	
Inflation (3% per year over 7 years)	$3,605,745.36	MassDOT Typical Inflation for TIP Projects to project out to future funding year. 3–4%.
Total Easterly Section	**$19,291,501.36**	
SAY	**$19,300,000.00**	

Additional Notes

- ROW acquisitions, easements, etc. must follow the ROW process as per the MassDOT Right of Way Bureau under Massachusetts General Laws Chapter 79.
- No additional street lighting.

Concept 3

Summary of Proposed NAAT Alignment and Alternate Segments

Concept 3 provides an alignment that connects numerous community facilities and links them to the overall NAAT network. The alignment meanders away from the Route 2 corridor, but creates an improved access for the affordable housing neighborhood along Brayton Hill Terrace to various community resources and the Greylock WORKS commercial property. This alignment also introduces a new active transportation connection to the Berkshire Family YMCA, connects two elementary schools, and intersects with the Cascade Trail. This concept intersects with the central section of the North Adams Adventure Trail further west than Concepts 1 and 2, at the Appalachian Trail Bridge over the railroad tracks and the Hoosic River. This is part of the NAAT Phase I Section that the City is actively pursuing. The trail then travels down Phelps Avenue towards the Greylock Elementary School where it turns eastward and continues off-road for approximately a half mile across a mix of public and private property, Greylock WORKS and the Alcombright Athletic Complex, to an existing foot path along the river. The alignment then connects with the Barbour Street extension, an existing dirt road along the never-completed roadway that connects Barbour Street with Brayton Hill Terrace. The path is currently used for municipal vehicles to access utility infrastructure that runs in the area. Concept 3 then continues along Brayton Hill Terrace, crosses State Route 2, runs off-road adjacent to the river, crosses under the rail corridor, and continues along a path through the fairgrounds parcel to Brown Street. From there it travels along Brown Street and connects with the on-road bicycle facilities proposed by others on River Street.

Figure 47—Concept 3

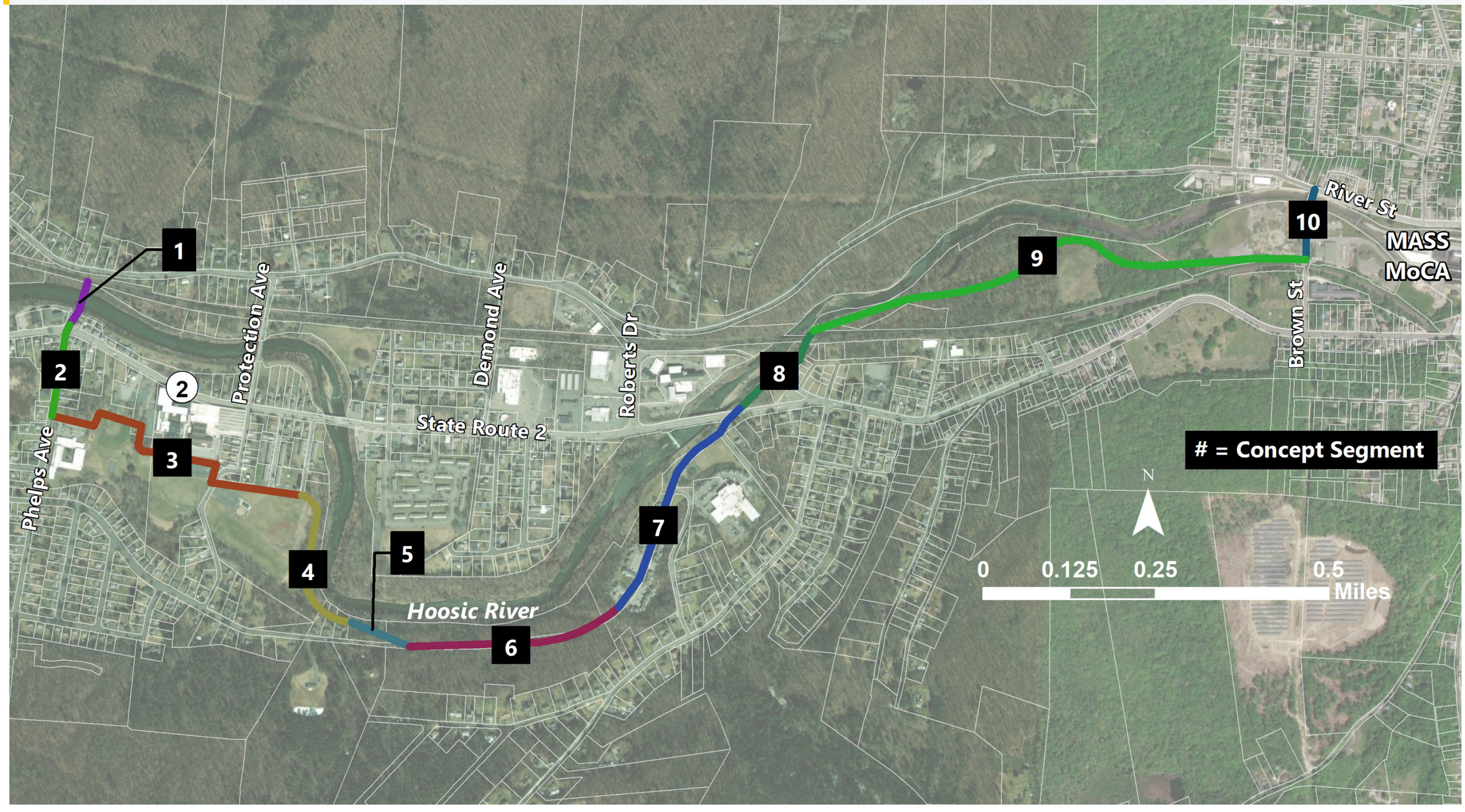
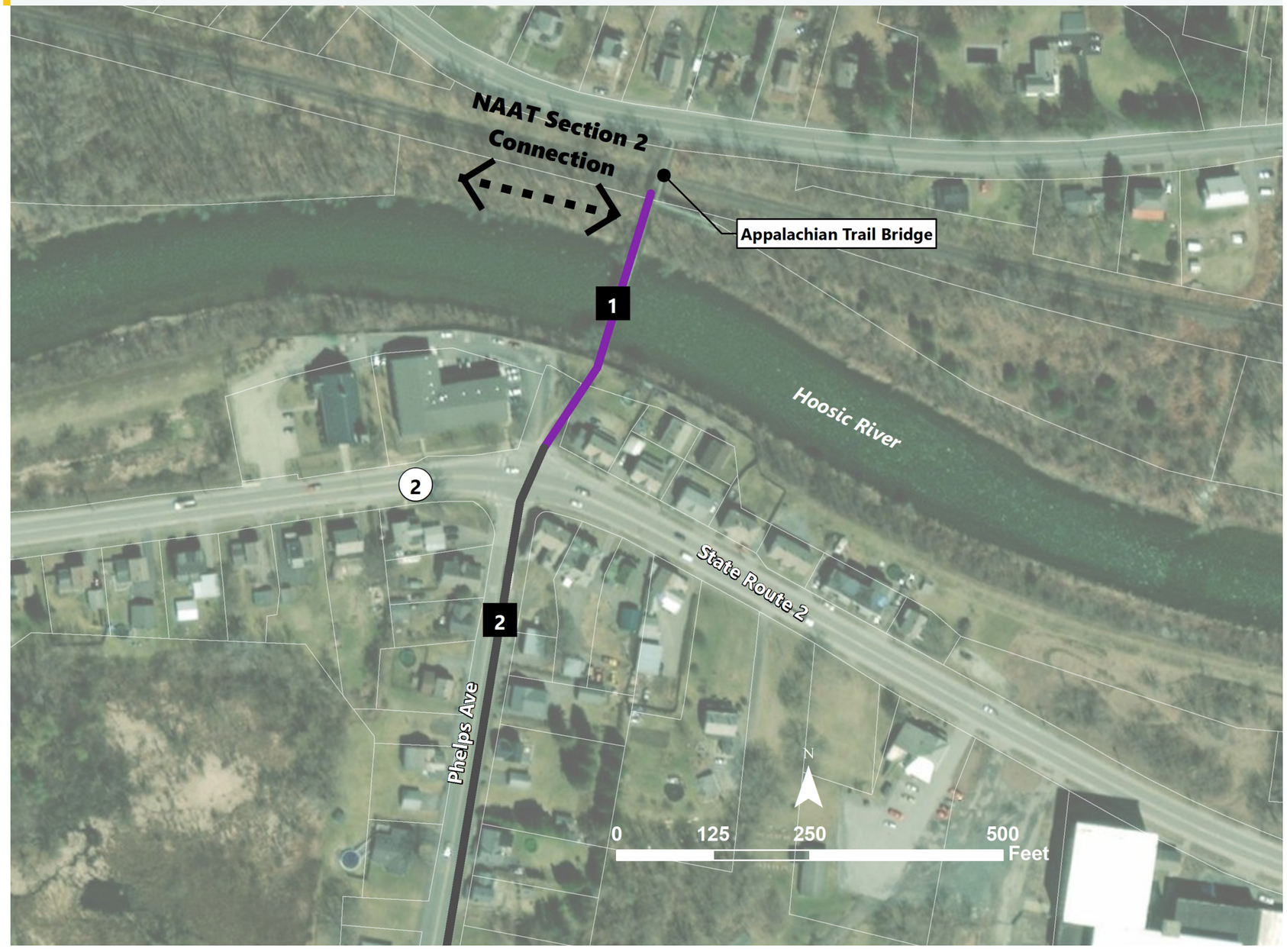


Figure 48—Concept 3, Segment 1



Concept 3 Segment 1

Appalachian Trail bridge and ramp, path to Route 2

Segment 1 As the future NAAT approaches from the west, a switchback ramp from either the rail corridor or the riverbank provides a connection to the existing Appalachian Trail bridge. The footbridge over the Hoosic River and the recently installed ADA ramp and path link to the intersection of Phelps Avenue and State Route 2 (see Figure 49). The existing Appalachian Trail Bridge could require modifications to support this segment. Additional analysis will be necessary to determine the best approach.

Figure 49—Ramp and access to Appalachian Trail Bridge

Figure 50—Concept 3, Segment 2

Concept 3 Segment 2

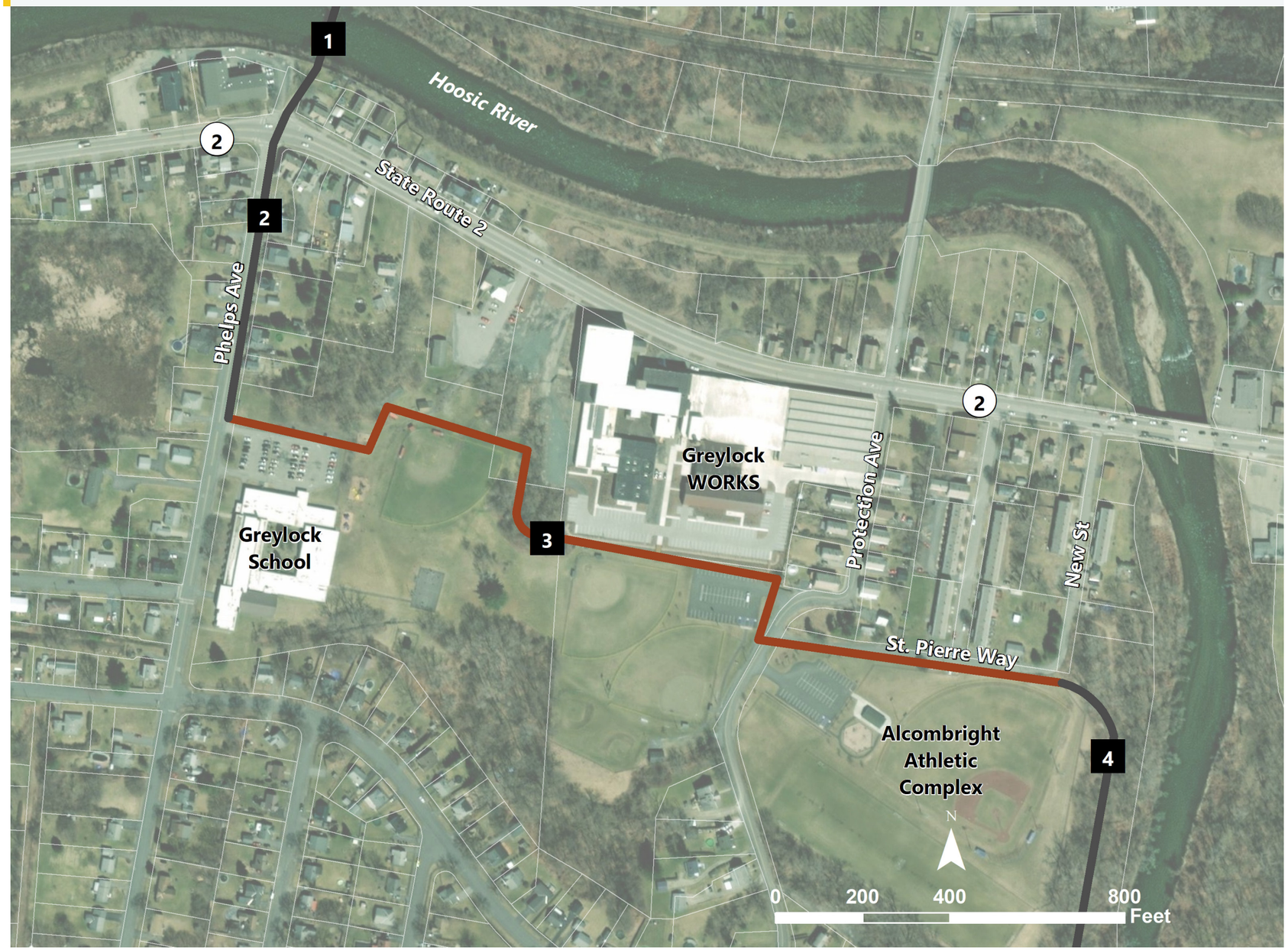
State Route 2 crossing and shared street with sidewalk along Phelps Avenue to Greylock Elementary School

Segment 2 Using the existing crosswalks at the Phelps Avenue/Route 2 signalized intersection, the NAAT continues south until turning to the east at the edge of the Greylock School's north parking lot. Traffic volumes and speeds on Phelps Avenue are moderate enough that many bicyclists are likely to ride on the roadway. To facilitate pedestrians and traffic-hesitant bicyclists, the east sidewalk is to be widened to 8 feet minimum by incorporating the existing 6-foot sidewalk and adjacent 3-foot-wide grass strip. New granite curbs would be needed for a smooth edge, but no encroachments on the clear width are expected since utility poles lie on the west side of the street.

Figure 51—Looking south along Phelps Avenue

Figure 52—Looking east from Phelps Avenue at ballfields adjacent to Greylock Elementary School

Figure 53—Concept 3, Segment 3



Concept 3 Segment 3

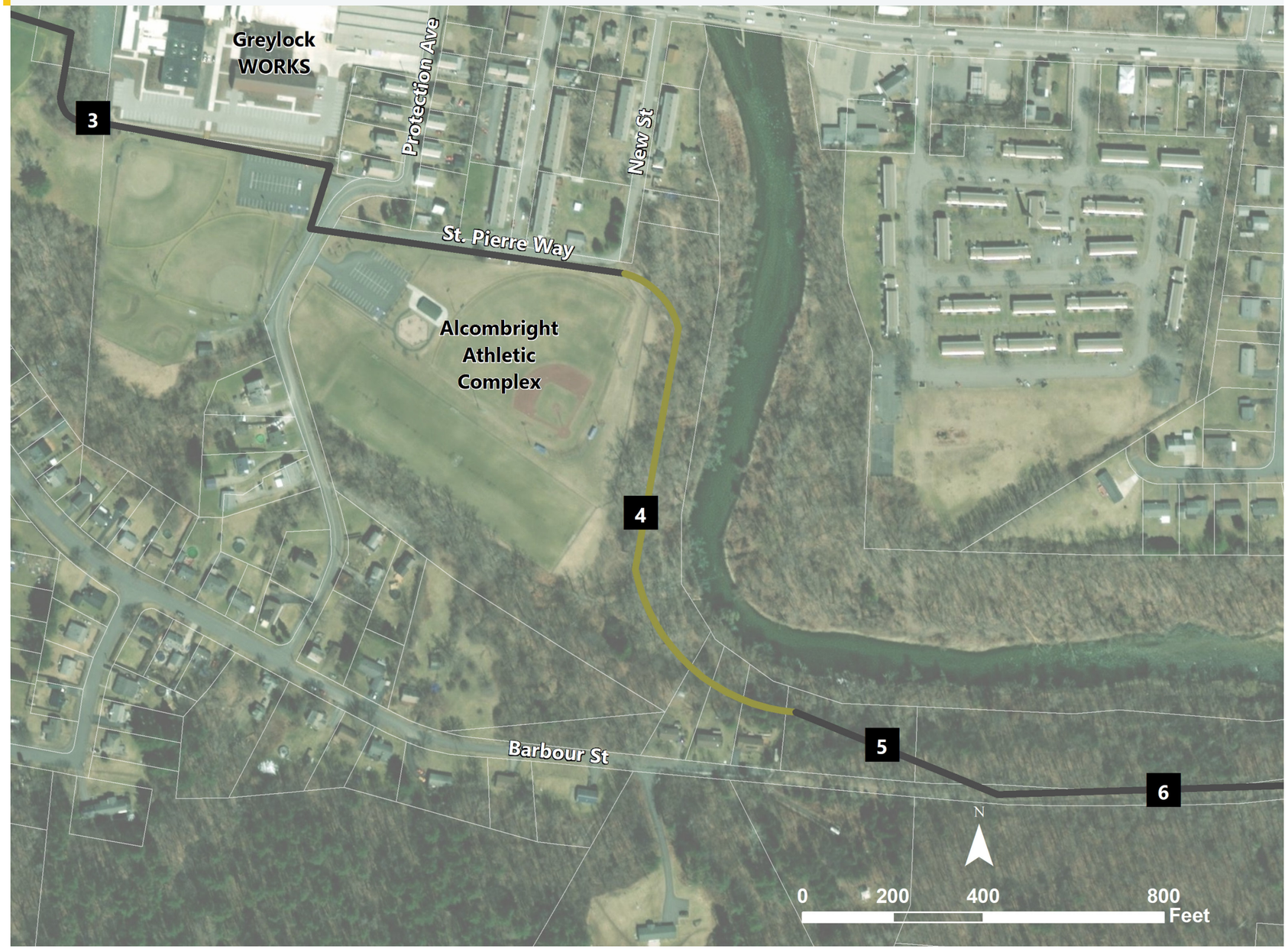
Off-road path through Greylock Park and Alcombright Athletic Complex

Segment 3 As it continues east from Phelps Avenue, the NAAT would be a 10-foot-wide paved path along the north perimeter of the City-owned land between Phelps Avenue and the Hoosic River. From west to east, the path alignment runs along the north side of the Greylock School parking lot, around the Greylock Park ballfields and between the parking lot adjacent to Protection Avenue and the Greylock WORKS property. It then turns south for a short stretch, parallel to Protection Avenue to a road crossing at the St. Pierre Way intersection. The NAAT continues east between the Alcombright Athletic Complex parking area and ballfield to an existing footpath in the wooded area adjacent to the river.

Figure 54—Looking east towards Saint Pierre Way between ballfield and Greylock WORKS

Figure 55—Alcombright parking lot and ball field

Figure 56—Concept 3, Segment 4



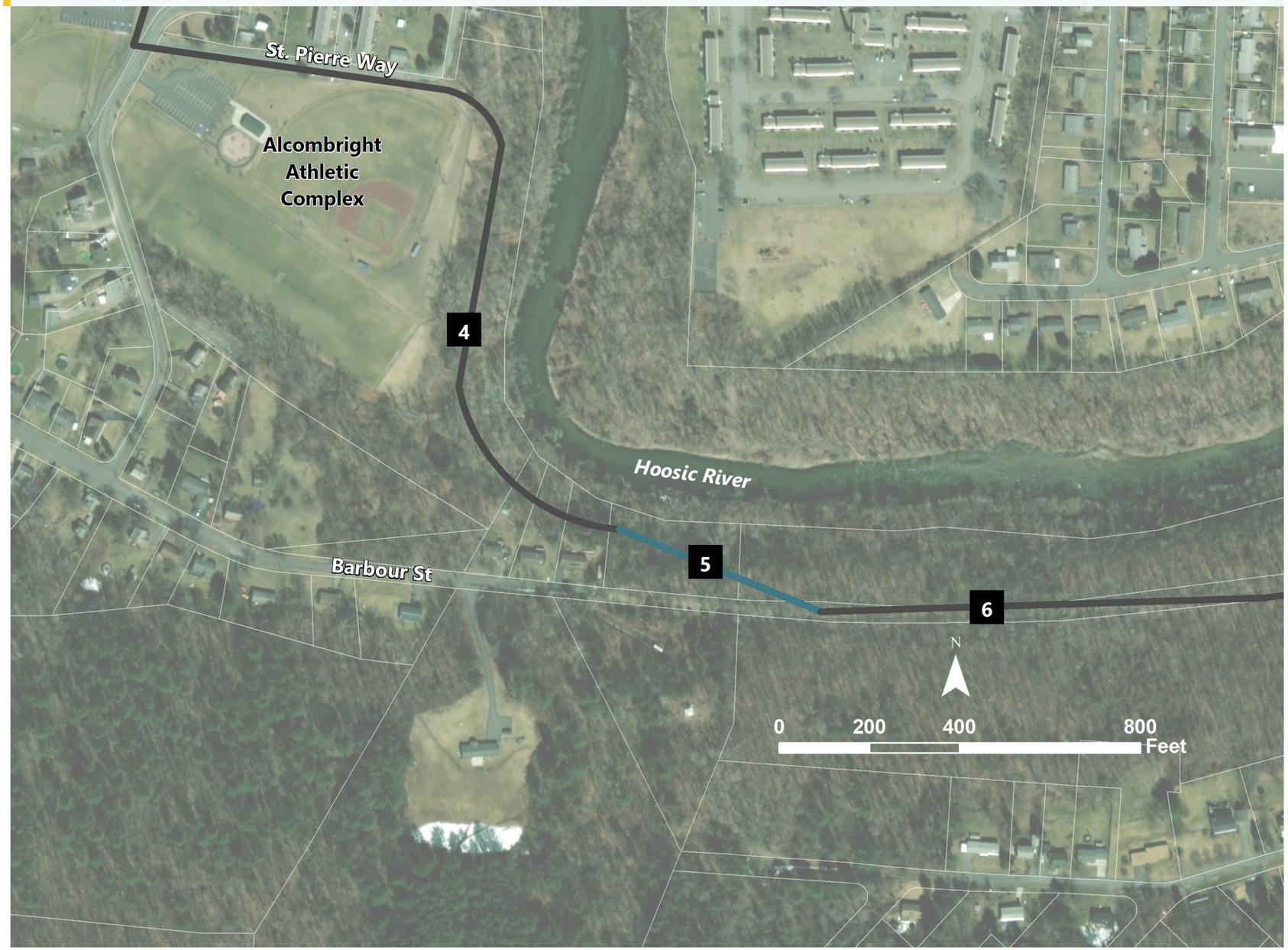
Concept 3 Segment 4

Off-road path along the Hoosic River

Segment 4 The path leaves the athletic complex and enters the wooded area adjacent to the river near the corner of New Street and St. Pierre Way. The path alignment follows an existing footpath and hugs the top of the embankment for roughly 1,000 feet. Because it is a wooded area, the path would require felling a number of trees to provide space for the 10-foot paved path and required offsets. As the path approaches the end of Barbour Street, easements would be required as it passes through residential properties adjacent to the river.

Figure 57—Existing footpath between river and athletic complex

Figure 58—Concept 3, Segment 5



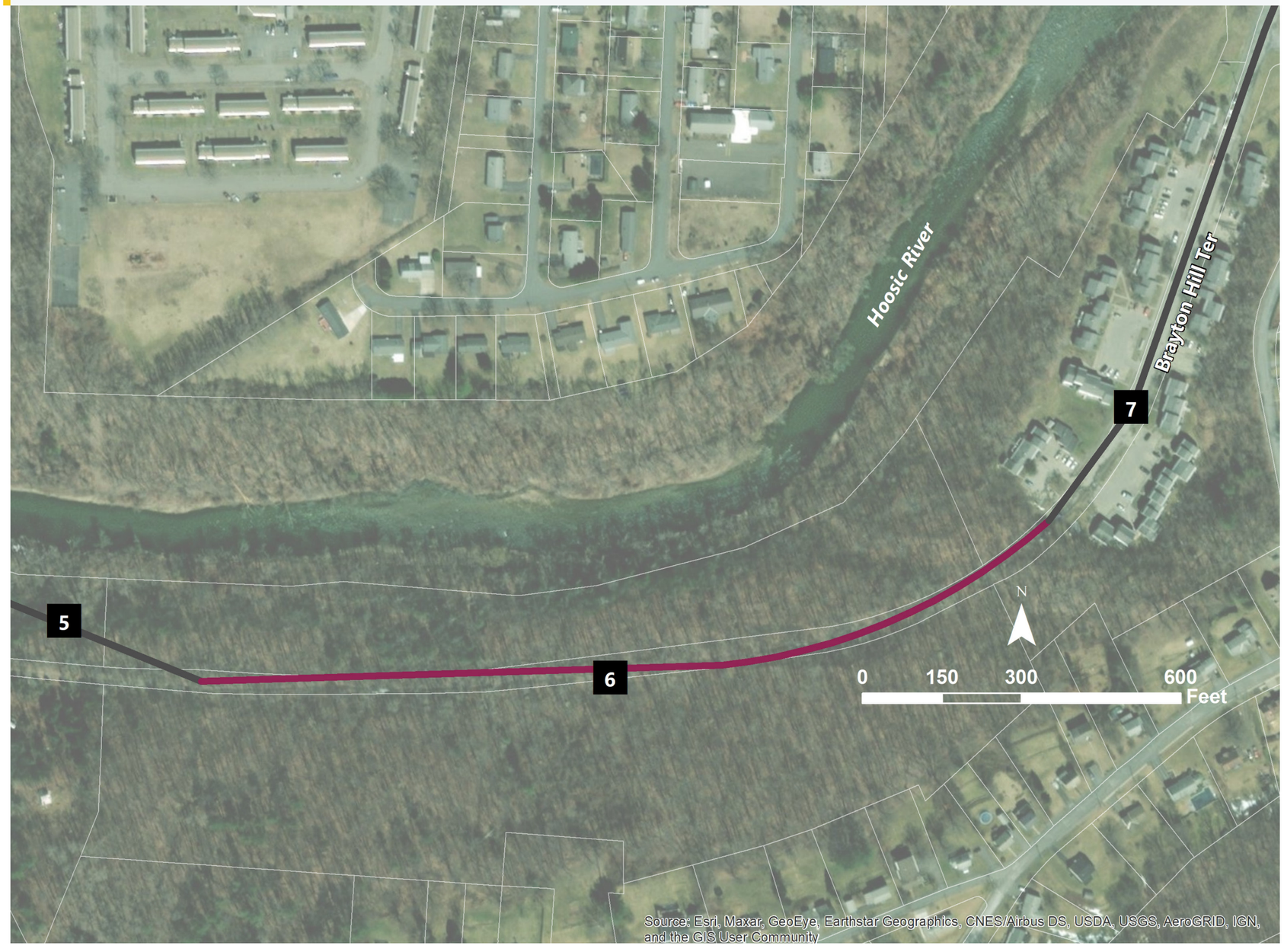
Concept 3 Segment 5

Grade change from lower path to upper path

Segment 5 Beyond the residential properties, the NAAT would ascend the steep incline to meet the paper street portion of Barbour Street (Barbour Street Extension). There is currently a gate at the western end of the paved portion of Barbour Street restricting access. The eastern end of the approximately half mile dirt road is open and is signed for public use (dog walking). Some impact to the adjacent private property is expected, but the need for a switchback to accommodate the roughly 20-foot vertical grade change is unlikely as there appears to be sufficient area to accommodate the gradual incline while considering the grade limitations for a shared use path. Exact alignment of the path traversing the grade change is to be identified as part of a future phase with field survey to finalize grading accommodations and location of an intermittent stream in the area.

Figure 59—Barbour Street Extension

Figure 60—Concept 3, Segment 6



Concept 3 Segment 6

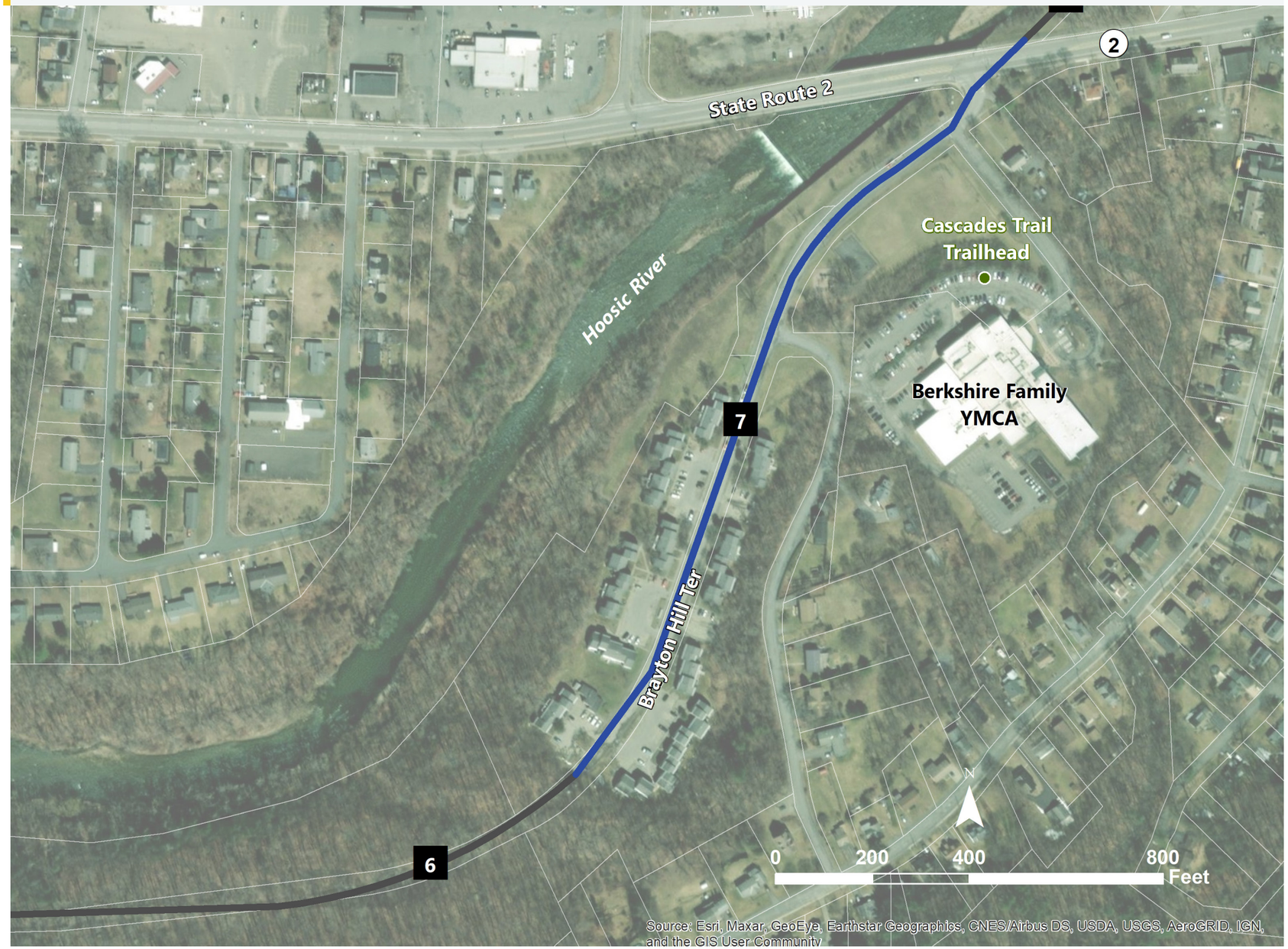
Off-road upper path

Segment 6 The path continues east by taking advantage of the dirt/gravel road bed between the gated dead end at Barbour Street and the access at Brayton Hill Terrace (see Figure 62). Although used by municipal vehicles to access utility infrastructure, some modest regrading and other minimal improvements are expected within the public ROW. There is an existing culvert carrying an intermittent stream under the dirt road that would need to be field checked. In addition to the municipal vehicles, the approximately 20-foot-wide dirt road is used as a recreational path through the access at Brayton Hill Terrace.

Figure 61—Looking west toward Barbour Street along the dirt road

Figure 62—Upper path access at Brayton Hill Terrace

Figure 63—Concept 3, Segment 7



Concept 3 Segment 7

On-road along Brayton Hill Terrace and through the intersection with State Route 2

Segment 7 From the end of the dirt/gravel road to State Route 2, the NAAT uses Brayton Hill Terrace, a low-volume street with modest traffic speeds. The speed limit is not posted, but it is assumed to be 25 mph. If the speed limit is higher than that, a shared use path may be more appropriate. The route provides a sidewalk on the west side for pedestrians with bicyclists using the roadway. Because of the topography, a climbing bike lane along the west curb provides more space for bicyclists to generate the momentum needed to ascend the hill. People riding downhill are generally able to maintain a similar speed as the local traffic and are expected to ride in the travel lane. Shared lane markings and signs are provided in the downhill direction to encourage safer positioning in the center of the northbound lane. Because the curb-to-curb width is 30 feet, parking would be restricted to the east side only and no center line marked within the 18-foot-wide two-way travel lane. This segment of the trail provides a direction connection to the Brayton Hill Park, the Berkshire Family YMCA, the Brayton Elementary School, and the Cascade Trail.

At the north end of Brayton Hill Terrace, path users cross Route 2 at the existing crosswalk. Because of the variable pedestrian and bicycle movements in both directions, an exclusive pedestrian crossing phase is recommended at the signalized intersection (if not incorporated already). This segment would need to coordinate with improvements proposed in the Brayton Elementary School Safe Routes to School project.

Figure 64—Looking north along Brayton Hill Terrace

Figure 65—Looking east at Brayton Hill Terrace/Route 2 intersection

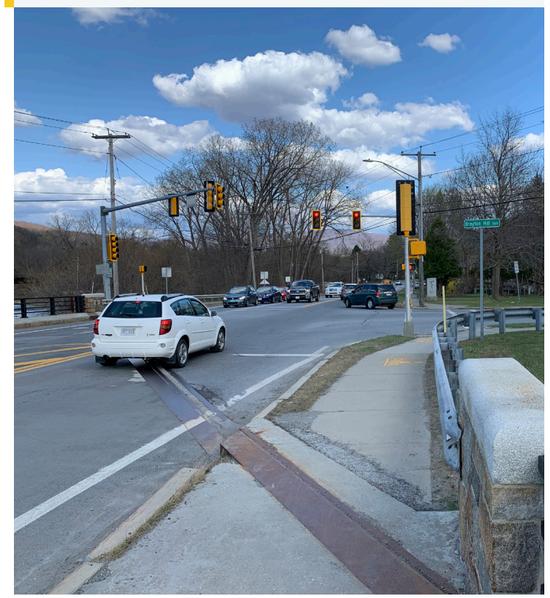
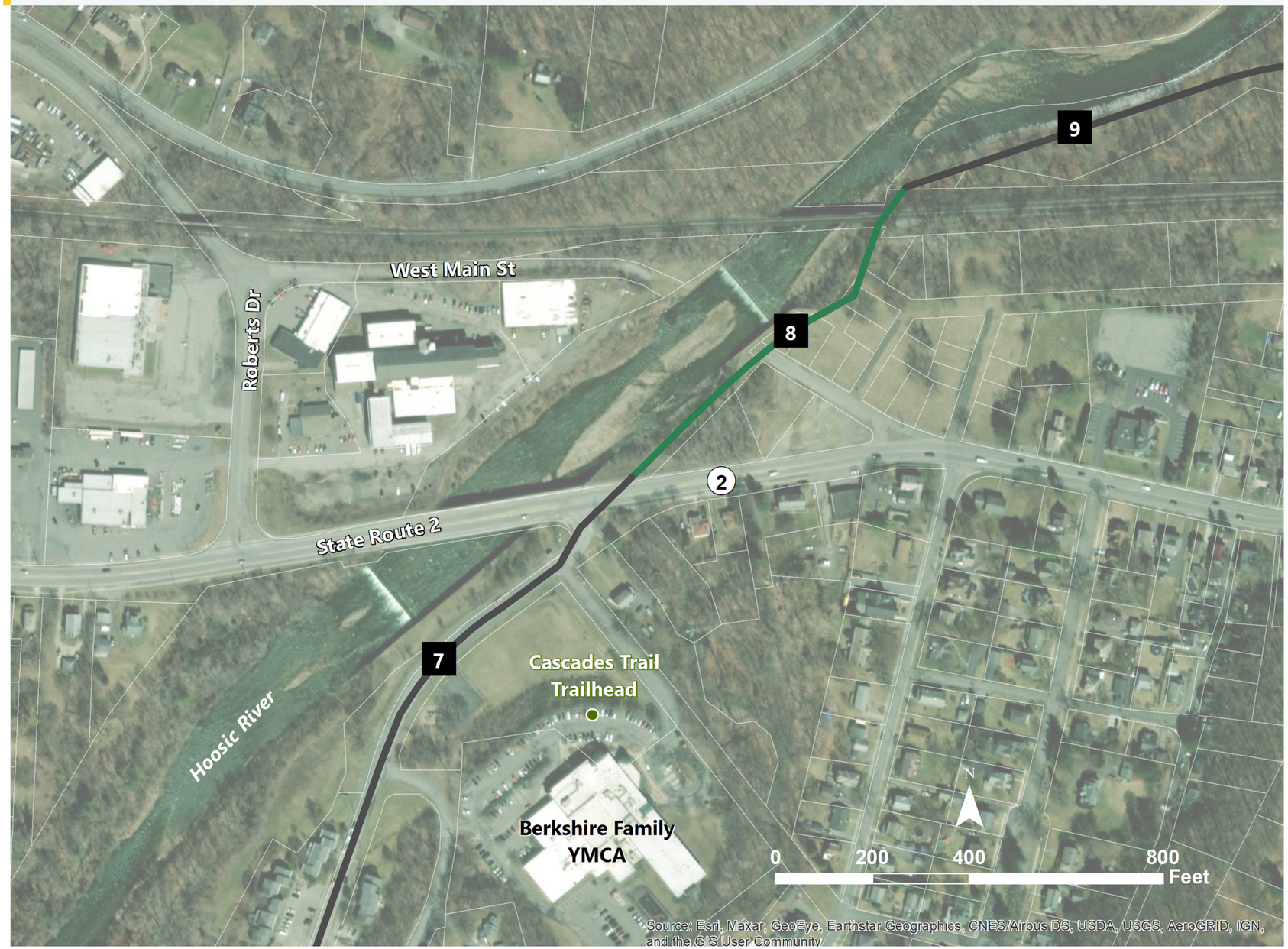


Figure 66—Brayton Hill Park on the east side of Brayton Hill Terrace

Figure 67—Concept 3, Segment 8



Concept 3 Segment 8

Off-road path and underpass below railroad tracks

Segment 8 East of the existing Brayton Hill Terrace crosswalk, the Route 2 sidewalk would be widened to 8 feet to accommodate the NAAT alignment for approximately 100 feet. A break in the guardrail is necessary to provide space for the path to veer to the north and run along the east bank of the Hoosic River up to the railroad corridor (see Figure 68). Property ownership varies between public and private adjacent to the river and would need to be confirmed in next stages of planning and design. It is likely an easement for the path would be required along some portions of this section, especially north of the old West Main Street dead-end stub.

The approach to the rail corridor requires felling a number of trees to provide space for the 10-foot path and required offsets. Because of the embankment, crossing the elevated railroad line requires a tunnel or culvert. The hope is that the NAAT can stay on a consistent level and not dip below grade when passing under the tracks. Similar to the new Norwottuck Rail Trail underpass in Northampton, or the Blackstone River Greenway in Blackstone, the intent is for a pre-cast concrete or metal tunnel/culvert to be installed below the tracks with minimal disruption to rail service above.

At this point, the remainder of the path would follow the same alignment as Concept 1, Segments 7 and 8. (see page 16 for detailed description.)

Figure 68—Looking towards rail corridor at the Brayton Hill Terrace/Route 2 crosswalk

Figure 69—Looking southwest towards Route 2 along south riverbank with West Main Street stub in foreground

Concept 3

	Limits	Length	Type	Right-of-Way Actions	Active Railroad Right-of-Way	Roadway Crossings	Railroad Crossings	FEMA Floodplain	Wetlands	Habitat	Comments	Difficulty
1	**NAAT Section 2 Trailhead to Route 2**	360 feet	Off-road		No		1	Path located in 100-year floodplain		Bridge travels over GIS-mapped priority habitat associated with the Hoosic River	Path requires the use of the Appalachian Trail facilities to cross the Hoosic River and and railroad ROW	Low
2	**Route 2 to Greylock School**	720 feet	On-road		No	1					Curb modification necessary; Phelps Avenue would accommodate confident riders	Low
3	**Phelps Avenue to Hoosic River**	2,400 feet	Off-road	Encroaches on public and private properties	No	1		Path located in 100-year floodplain	Proximity to river may require impact to buffer zone. Final alignment analysis will be necessary.		Requires coordination with municipality and private owners on alignment; Wellhead protection area (Zone I) in close proximity (to be avoided)	Low
4	**Along the Hoosic River**	1,230 feet	Off-road	Impacts residential properties along Barbour Street	No			Path located in 100-year floodplain	Proximity to river may require impact to buffer zone. Final alignment analysis will be necessary	Final alignment to avoid GIS-mapped NHESP associated with Hoosic River	Primarily follows existing path alignment adjacent to the river; crosses rear portion of multiple parcels that front on Barbour Street, path would be greater than 150 feet through heavily wooded area from closest residence	Moderate
5	**Grade Change from Lower Path to Upper Path (ROW)**	485 feet	Off-road	Impact to private parcels between river and ROW	No				Culvert and mitigation measures may be necessary for crossing intermittent stream	Final alignment to avoid GIS-mapped NHESP associated with Hoosic River	Significant grade change through wooded area, will require additional survey to locate best alignment	Moderate
6	**Upper Path to Brayton Hill Terrace**	1,665 feet	Off-road		No						Follows existing path used by city DPW	Low
7	**Brayton Hill Terrace to Route 2**	1,675 feet	On-road		No			Path located in 100-year floodplain		Possible overlap with GIS-mapped NHESP along Brayton Hill Terrace	Uses existing infrastructure to accommodate cyclists and pedestrians with minimal modifications necessary	Low
8	**Route 2 to Railroad ROW**	980 feet	Off-road		No	1	1			Path travels through GIS-mapped priority habitat associated with the Hoosic River	Runs adjacent to headwall for Hoosic River, may require coordination with ACOE; includes crossing under railroad ROW; both public and private property ownership	Low
7	**Hoosic River to Brown Street**	4,075 feet	Off-road	Enire segment is within private property	No			Path located in 100-year floodplain	Approximately 2,400 linear feet of potential wetlands impact		Potential hazardous materials concerns throughout this site; wetland locations should be field verified	Moderate
8	**Brown Street to River Street**	545 feet	On-road		No	1					Plenty of ROW, but curb and utility adjustments may be necessary; structural analysis of bridge necessary	Low

Concept 3—Potential Construction Cost Estimate

	Description	Length	Type	Approximate Cost/Feet	Potential Construction Cost	Notes
1	Ramp Connecting to Appalachian Trail Bridge	360 feet	Ramp/Bridge	$700.00	$252,000.00	Exact location will depend on final alignment for NAAT Section 2. This segment would provide a direct connection from the at-grade NAAT to the existing Appalachian Trail bridge via a switchback ramp.
2	Route 2 Crossing and On-Road (Phelps Avenue) Separated Path	720 feet	Roadway	$900.00	$648,000.00	Route 2 Crossing recently updated by MassDOT, then transition to side path along roadway. Curb modification along Phelps Avenue would be necessary to accommodate the new path alignment.
3	Path through Parks to Hoosic River	2,400 feet	Path	$200.00	$480,000.00	At-grade path adjacent to ballfields in municipal park area and athletic complex.
4	Path through Wooded Area	1,230 feet	Path	$200.00	$246,000.00	Path along existing footpath through the woods adjacent to the river.
5	Path Traversing Grade Change through Wooded Area	485 feet	Path	$700.00	$339,500.00	Path covering significant grade change between lower path and upper path. May require retaining wall or other stabilization efforts.
6	At-Grade Path along Existing Dirt Road	1,665 feet	Path	$200.00	$333,000.00	Path along existing +/-20-foot dirt road.
7	On-Road (Brayton Hill Terrace Separated Path	1,675 feet	Roadway	$25.00	$41,875.00	Bike lane along west side of road to provide bikers uphill a climbing lane. Striping and signage along east side allowing cyclists to stay in travel lane. Assume $25/foot for signage and striping. This includes signs, green paint, and other associated pavement markings.
8	At-Grade Route 2 Crossing and Off-Street Path to Tunnel Crossing Railroad ROW	980 feet	Path/Tunnel	$200.00	$756,000.00	At-grade path and tunnel under railroad. Assume 40-foot culvert at $14,000/linear foot = $560,000.
9	Path in Fairgrounds to Brown Street	4,075 feet	Path	$200.00	$3,695,000.00	Segments of boardwalk likely necessary based on GIS wetlands mapping, need field verification. Assuming 2,400 feet of boardwalk and 1,675 feet of path for estimate purposes (boardwalk = $1,200/foot).
8	Brown Street	545 feet	Roadway	$900.00	$490,500.00	Roadway improvement to account for trail, no new bridge on Brown Street. Possibly bridge modifications and roadway improvements for converting existing sidewalks to shared use path.

This estimate has been prepared with the following assumptions and is for planning purposes only:

- Survey, geotechnical evaluations, design, and permitting has not been completed.
- Concept plans included as part of the North Adams Adventure Trail Feasibility Study (Phase II—MassDOT Planning Phase) dated 10/04/2021 were developed using MassGIS information and simple line work on an aerial to depict existing and proposed conditions.
- Linear foot construction costs are based on other projects that are in various design stages, including the Ashuwillticook Rail Trail in Adams/North Adams (25%), Williamsburg Greenway/Route 9 Williamsburg (25%), North Adams Adventure Trail (NAAT) Feasibility Study Phase 1 (Concept), and a review of various bid prices from recent MassDOT TIP projects.
- ROW actions such as acquisitions or temporary/permanent easements have not been conducted.
- A desktop concept design contingency was added.

Linear Feet—14,135 feet | Miles—2.68	$7,281,875.00	
Desktop Concept Design Contingency For Unknowns—15%	$1,092,281.25	15%
Landscaping, Hardscaping, Wayfinding, Lookouts, Furnishings, etc	$200,000.00	Allowance for landscaping items along the path includes: benches, bike racks, repair stations, and trash receptacles.
Traffic Management—1%	$72,818.75	MassDOT Standard Contingencies.
Mobilization—3%	$218,456.25	
Police Details—3%	$291,275.00	
MassDOT Construction Engineering—10%	$728,187.50	
Construction Contingency—10%	$728,187.50	
Subtotal	**$10,613,081.25**	
Inflation (3% per year over 7 years)	$2,439,670.01	MassDOT Typical Inflation for TIP Projects to project out to future funding year. 3–4%.
Total Easterly Section	**$13,052,751.26**	
SAY	**$13,100,000.00**	

Additional Notes

- Assume 10-foot path for trail with 2-foot shoulders to minimize wetland impacts and disturbance in riverfront and flood plain areas.
- Easements for path with railroad ROW will require approval from railroad ROW and approval from Public Utilities Commission.
- If proposed path falls within layout of the railroad obtaining easements could be time consuming, costly, and might not be approved by railroad.
- ROW acquisitions, easements, etc. must follow the ROW process as per the MassDOT Right of Way Bureau under Massachusetts General Laws Chapter 79.
- 5,000 SF of wetland impacts will require a variance through DEP, could be challenging to get approvals.
- Other than impacts noted above, utility impacts anticipated to be negligible.
- From a ROW, design and permitting perspective, the path through MassMoCA should not be included as part of the MassDOT design process.
- No Path/Street Lighting are included.
- Bridges and boardwalks have been assumed to be H-20 Loading for emergency vehicles, a typical requirement for MassDOT projects.

Conclusion and Next Steps

The previous chapters developed, screened, and analyzed potential conceptual alignments for the North Adams Adventure Trail Phase II. The concepts analysis was combined with input from a variety of stakeholders including the City of North Adams, MassDOT district staff and MassDOT Office of Transportation Planning staff as well as the regional planning agency, local stakeholders and the public (residents, advocacy groups, and employers). These efforts resulted in the identification of preferred conceptual alignments for further detailed evaluation and design. This chapter presents an action plan for implementation of the study recommendations.

Overview

The North Adams Adventure Trail (NAAT) vision is for an east-west, primarily off-road, shared-use path connecting Williamstown to North Adams along a similar alignment as the existing State Route 2, active freight railroad corridor, and the Hoosic River.

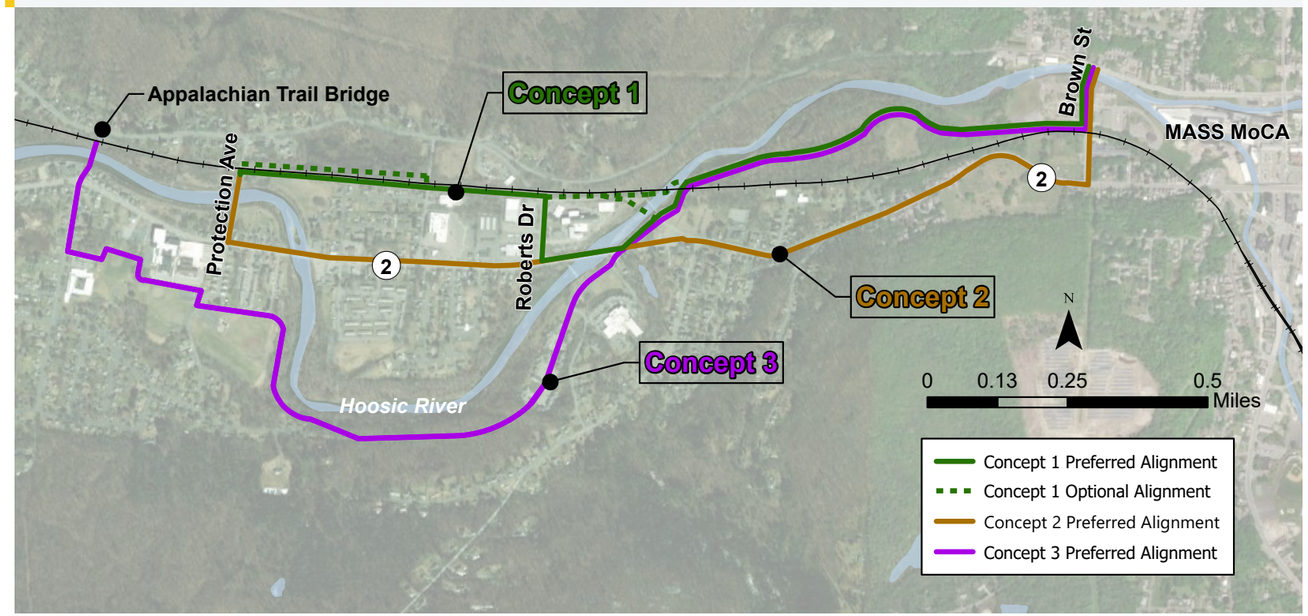
The trail would provide an active transportation link between neighborhoods, tourism areas and major cultural institutions in addition to being a significant regional draw for both recreation and active transportation. The NAAT would also connect to the North Adams Adventure Trail Phase I in development as well as the Mohawk Bike/Pedestrian Trail currently under construction. Ultimately, the completion of the NAAT would further support a future connection with the popular Ashuwillticook Rail Trail to the south, creating a completely off-road network of nearly 30 miles through the Berkshires, linking Williamstown, North Adams, and Pittsfield. Refer to Figure 1.

The north-south Ashuwillticook Rail Trail between Lanesboro and Adams has been a great success but was almost entirely a rail-to-trail conversion. The rail line in North Adams and Williamstown is still active, thus a rail-to-trail design is not feasible. An alternate alignment such as a rail-with-trail facility would be required. Given the proximity of the roadway, a trail along the State Route 2 corridor was also evaluated for a sidepath facility.

After meeting with City officials, MassDOT agreed to develop and analyze a third conceptual alignment that more closely follows the Hoosic River, connects numerous community facilities, and includes a segment that follows an existing off-road path within a right-of-way (ROW) for a portion of a local road that was never constructed (now used as a walking path). An alignment for a trail along the riverbank presents numerous environmental challenges as would be expected.

This study does not identify specific funding sources for a preferred concept due to many variables including funding availability and project-readiness. While funding is always a consideration and was factored into the evaluation criteria, funding availability was not a primary driver for the development of the study recommendations.

Figure 2—Three concepts analyzed in this study



Preferred Conceptual Alignments

Figure 2 presents the location of the three conceptual alignments for NAAT Phase II. In summary, the conceptual alignments included:

- **Concept 1** generally follows the original NAAT Vision alignment along the existing active railroad and river corridor.
- **Concept 2** generally follows the Route 2 alignment as a parallel separated sidepath facility for bicyclists and pedestrians.
- **Concept 3** aligns the NAAT adjacent to the south bank of the Hoosic River over off-road paths, including a stretch through wooded terrain along an existing trail on a municipal right-of-way.

Tables for each concept present a summary of the anticipated impacts for each alignment including right-of-way actions, roadway and railroad crossings, floodplain, wetlands, critical habitat and construction costs.

General consensus from local officials and public comments favored either Concept 1 along the RR or Concept 3 along local roadways and the riverbank or a combination of both. Concept 2 along Route 2 was generally not viewed favorably.

Public Comments

Marilyn Lefevre | marilyn_lefevre@hotmail.com

I just wanted to give my support to Concept 3. I live on Phelps Avenue and the trail will be on my front sidewalk. I love the idea of walking out my front door and onto a beautiful walking/biking trail. The Adventure Trail is on my street and we have hikers from all over the country and around the world passing by my house. We love to have morning coffee on our front porch and talk to all the hikers passing by. Concept 3 will only pass by a few houses before heading into the field by the school parking lot. It will be nice to walk by ball parks and trees, eventually having a long walk along the river, rather than stuck on sidewalks beside the road.

Concept 2 is a terrible idea, biking along busy Route 2 most of the way, rather than enjoying green spaces. Also, it would be a real hardship for the people living along the route to lose their parking. Turning down Brown Street from Route 2, you will have to go under the train trestle. I hate driving under that narrow space as it is, without making it even narrower for bikers/walkers.

Concept 1 is not my favorite choice either. Biking and walking beside an active train track for a long distance, does not sound peaceful or enjoyable.

Everyone says "not in my backyard", but once this was completed I think everyone would get so much pleasure from this trail.

Michael Woloschack | michael.woloschak39@gmail.com

I'm a resident of North Adams and reviewed the report. I have no background in this sort of project planning, but suspect that Concept 3 might be safer for bikers and have better nature aesthetics. Hope this is helpful to you.

Patti Lentine | plentine@live.com

I am writing in regard to the 3 proposed bike path concepts of the North Adams Adventure Trail Feasibility Study—Protection Avenue to River Street.

Of the three proposals, I believe Concept 1 is the most preferred/feasible choice. There wouldn't be any crossing of busy Route 2, and would proceed mostly though wooded/off road paths which would be my preference for being on a pedestrian path. I wouldn't enjoy crossing a busy Route 2 several times nor walking along Route 2 with all the traffic—not to mention safety issues.

I do not approve of either Concept 2 or 3 as they both require the crossing of Route 2 in several places, as well as running along Route 2 in Concept 2. Walking along Route 2 is noisy/dangerous and, as I stated before, not my idea of a place I'd want to walk on a pedestrian walkway—not to mention the loss of on-street parking for the residents along the route. That is already a challenge for them in the winter months and to have no on-street parking year round would be a hardship. Concept 3 crosses Route 2 at Phelps Avenue and runs up to Greylock School's parking lot-that is already a congested, well-traveled area-the sidewalks on Phelps Avenue already are on top of the houses and widening them even more would create even more of a bottleneck.

These are the first things that come to my mind. I am sure there are more pros for Concept 1 and cons for Concepts 2 and 3 than I have listed.

Alice Bojanowski | alicebojo@gmail.com

I am delighted to provide my comments on the recent NAAT Feasibility Study for the North Adams bicycle path.

As one of the local bicyclists here in North Adams, I am very, very eager to ride off-road on the new Adventure Trail. But, as a retired Transportation Planner, I know how long it takes to plan and implement these types of facilities. Thank you for your efforts to date.

After carefully reviewing the Feasibility Study, I would like to "vote" for Concept 3 as my own preferred alignment, for the following reasons:

- Concept 3 provides the best connections to existing residential, recreational, cultural, historical and natural areas. Concept 3 plan estimates are the lowest cost, and the most cost-effective.
- Concept 3 appears to be the safest route for all skill-levels of riders. Off-road bicycling, away from active vehicular (Route 2) and railroad (Pan Am railway) routes, is ideal for amateur children and expert adult riders, alike.
- Concept 3 leverages existing trail facilities, such as The Cascades and The Appalachian Trail, celebrating these resources by proximity and allowing multiple side-route excursions.
- Concept 3 threads the Adventure Trail through parts of North Adams that are currently loosely connected (the Brayton Hill residential area) to downtown North Adams and Williamstown. The proposed path can provide a safe route to schools, shops, and recreation, thereby allowing young bicyclists to be more independent, and perhaps reduce the need for many vehicle trips. The proposed path can also link visiting tourists to more of our cultural and natural amenities, providing alternatives to their usual itineraries.

Thank you. I look forward to following the progress of the Adventure Trail bicycle path in this area! All best wishes in the New Year. Cheers!

Public Comments (continued)

Peter Traub | phtraub@nycap.rr.com

My comments on the North Adams Adventure Trail Feasibility Study—Protection Avenue to River Street Study: I favor Concept 3 with modifications, if feasible.

The modifications would include:

a. Starting at Protection Avenue and follow the South bank of the Hoosic River to Route 2, cross Route 2 at grade and continue to where it would intersect with Concept 3.

b. Follow the bank of the Hoosic River instead of using Brayton Hill Terrace until it makes sense to use the sidewalk and Route 2 crossing.

c. At Brown Street again follow the South side of the Hoosic River as best you can to gain access to Mass MoCA over one of their bridges.

Tom Albert | tomalbert971@yahoo.com

I live on Chenaille Terrace in North Adams. If the bike path goes through the back of my home I plan on getting a lawyer to sue for ruining my Quality of Life here where I live. My home was built with the living room facing the yard with big picture windows that I enjoy looking out at the wild life and the view. A bike path will take this all away. It will effect my feeling of not being secure, etc.

Donna Motta | davedonnamotta@gmail.com

I am writing this to voice my opinion re the completion of the North Adams' Branch of the proposed bike path. While all three ideas hold individual merit, I tend to favor the plan of connection between MassMoCA and The Clark Art Institute.

I also love the connection to our beloved river. I feel the more individual exposure to our river, the increase in awareness around, and spirit of kinship to this important body of water. With this increase in relationship, will hopefully come an increased desire for responsible, caring stewardship.

Besides increased stewardship; I feel any time spent near native water draws us even closer to, and grows a deeper appreciation for our sense of belonging and "place".

Thank you for your time in reading. Thank you for this committees' increased effort in moving forward in completion of this much needed leg of our beautiful bike path.

It is a plan who's time is now and necessary to help build much needed community pride and a sense of excellence.

Dave Deming | davedeming1@gmail.com

Thank you for this opportunity to express my preference re: the proposed bike route options.

My request is to avoid constructing any thing near the river. We are encroaching on 'wild life' habitats which should remain free from people, their noise and their trash.

I really loved 'stepping lightly' along the river in Williamstown but that will be no more with a paved trail and the new bridge near Cole Avenue.

Too, at this time of "Red Alert"(Union of Concerned Scientists) re: our 12 mile thick atmosphere. What are the embodied energy calculations re: construction?

Nancy Nellis | heavensmeasure@yahoo.com

I am a North Adams resident and frequent user of the Ashuwillticook Rail Trail. I have reviewed the draft of the three concepts for the North Adams Adventure Trail. Section 3—Protection Avenue to River Street and I believe there is one clear choice: Concept 3.

I believe Concept 3 is the best and only real option for two main reasons:

- Because of it's location in a natural environment—largely wooded and along the Hoosac river.
- Because it allows easy access for students at both the Greylock and Brayton schools and residents of the Brayton Housing complex.

Concept 1 would be my second choice however I am not in favor of it because the path runs along an active freight train right-of-way.

Concept 2, I believe, should be eliminated as a choice altogether as it relies heavily on "on road shared-use."

I look forward to hearing more about community feedback regarding the 3 concepts and "the path forward".

Next Steps

Project Development is the process that takes a transportation improvement from concept through construction. There are several goals for this process:

- To ensure context sensitivity though an open, consensus-building dialog among project proponents, reviewers, the public, and other parties.
- To foster thinking beyond the roadway pavement to achieve the optimum accommodation for all modes.
- To encourage early planning, public outreach, and evaluation so that project needs, goals and objectives, issues, and impacts can be identified before significant resources are expended.
- To achieve consistent expectations and understanding between project proponents and those entities who evaluate, prioritize, and fund projects.
- To ensure allocation of resources to projects that address local, regional, and statewide priorities and needs.

Effective partnerships on projects are important throughout project development and require strong commitment and action from all Individuals involved, whether they be MassDOT or Federal Highway Administration (FHWA) staff, elected officials, local planning and public works professionals, citizens, or consultants. To move the NAAT forward to reality, we recommend the undertaking of the following two primary initiatives:

1. Local North Adams officials (City department heads and elected officials) identify a preferred conceptual alignment for the NAAT Section 3 Phase II. While each alignment presents a distinct route to connect local destinations and meet project goals, a final preferred route may be a hybrid of portions from each of the three conceptual alignments evaluated in this feasibility study. The City's decision should be formalized in writing to the MassDOT Office of Transportation Planning and the MassDOT District 1 Highway Director.
2. City officials coordinate with the MassDOT District 1 Highway Director and staff (along with assistance from the Berkshire Regional Planning Commission) to initiate the steps for project development as outlined in Chapter 2 of the MassDOT Project Development & Design Guide (PD&DG) and subsequent online MAPIT tool to move the project from initial planning into design, permitting and finally construction.

Each of the projects will need to follow a multi-step process as shown below. Additional detail is contained in Chapter 2 in the PD&DG. Depending on the project, some of the early steps may have already been completed either as part of this study or in other studies.

- Step 1—Problem/Need/Opportunity Identification
- Step 2—Project Planning
- Step 3—Project Initiation
- Step 4—Environmental Review and Permitting /Design/Right-of-way Acquisition
- Step 5—Funding/Programming on the Regional and State Transportation Improvement Programs
- Step 6—Advertise/Bid and Contract Award
- Step 7—Construction

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PERMIT NO.: _____

DESCRIPTION: North Adams Adventure Trail Feasibility Study

DESIGNER: Consultant - Vanasse Hangen Brustlin, Incorporated

SUBMITTAL: Feasibility Study

DATE: April 20, 2021

NO.	PAGE (PDF)	COMMENT	INITIAL ACTION	RESPONSE	QC REVIEW INITIAL	FINAL ACTION VERIFIED	
COMPLETED BY REVIEWER			COMPLETED BY DESIGNER			BY REVIEWER	Comments/Questions/Concerns
District 1 Review Anthony Vona							
Sample	*7*	What's this symbol stands for? If this is an obstruction, ensure minimum 3' wide travel path is provided. See the attached PDF for location	C	The symbol is a proposed handhole for the street light. It will be set flush with the sidewalk. A note can be added to the plans			symbol is a HH & is a surface structure that will not cause obstruction in accessible path
1	3	*"The rail lines in North Adams and Williamstown are still active however."* Highlighted and unclear why		Not sure why this section is highlighted.			No additional comment made. Need clarification on why this text was highlighted.
2	5	$14-15 million		will add information about cost estimate in document			Change made
3	9	The feasibility of these sections are not possible, its very unlikely the railroad concedes to giving up ROW to even allow this to happen. Please discuss that the feasibility of the these options and how they ultimately are reliant cooperation of the railroad company.		Will add note about cooperation required with the railroad owner. While this alternative would require agreement with the RR ROW owner which admittedly is challenging, it is "possible" and was included as it is the most "obvious" connection. The study indicates the ROW requirements needed from the RR.			Added note under project location and limits
4	10	This may pose a design challenge surcharge load from the active railroad line will have to included in your stability calculations. The design and loading will have to follow the AREMA Manual. This would make the wall larger than originally anticipated causing ROW issues and increase the cost.		Comment noted and will add note regarding the challenge associated with installing a retaining wall in this location. AGREEDBUT IT IS POSSBILE. DO YOU WANT PIC OF THE WALLS WE BUILT ALONG THE P&W RR			Added note acknowledging additional structural analysis will be necessary prior to sizing and locating wall.
5	10	While you are providing sufficient space, I don't like the idea of building a shared use path next to an active railroad line. Noise and vibrations of any active trains may deter users from using the path.		comment noted. While not ideal, this alignment provides the most direct route from Williamstown to MassMOCA. Currently this line is a freight line that does not see significant activity. While there is a MassDOT study underway to understand potential for future passenger rail in the corridor, that is not in the near (or mid-term) future.While the noise and vibration from a passing train would be noticeable, we dont see it as a severely limiting factor for trail users.			
6	10	15-foot tall embankment. A retaining wall between the path and the railroad embankment		The retaining wall will be bench cut along the slope and not the entire ~15' height. (As noted in earlier response, a note will be added to acknowledge the challenge of installing a retaining wall in this location.)			Need clarification from commenter on concern. Are they assuming 15' retaining wall?
7	10	may require a property easement		Comment related to concern regarding size of wall and potential to further impact property and a note will be added to the document acknowledging the challenge associated with the wall and the potential for the size to increase based on load calculations.			

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DESIGN REVIEW COMMENT AND RESOLUTION FORM

PERMIT NO.:

DESCRIPTION: North Adams Adventure Trail Feasibility Study

DESIGNER: Consultant - Vanasse Hangen Brustlin, Incorporated

SUBMITTAL: Feasibility Study

DATE: April 20, 2021

NO.	PAGE (PDF)	COMMENT	INITIAL ACTION	RESPONSE	QC REVIEW INITIAL	FINAL ACTION VERIFIED	
COMPLETED BY REVIEWER			COMPLETED BY DESIGNER			BY REVIEWER	Comments/Questions/Concerns
8	10	I would like to keep the shared use path through this section and not merge anything with traffic.This seems dangerous and no where near wide enough to expect bicyclists and pedestrians to share to roadway with traffic. This means the tunnel would have to be widen to accommodate a 10 ft shared use path.		Comment noted and will add note specifying that tunnel widening would be preferred option here from a safety perspective. Other option is the dead-end street option which would eliminate two-way traffic and provide space for a protected shared use path and single vehicle travel lane. Will add more text to this option.			Note added
9	15	Consider tying into Brayton Elementary School project that is proposing bicycle lanes from the intersection to the Elementary School if this concept is chosen.		Will add a note to description of Segment 5A regarding need to coordinate with this project.			Note Added
10	16	Significant reason will need to be made to reduce the shared use path to 8 ft. AASHTO requires a minimum of 10 ft and only extremely rare conditions can it be justified to 8 ft.		The conditions in the AASHTO Bike Guide Section 5.2.1, 2nd and 3rd paragraph describe the conditions prevelent on this project site. The right-of-way and environmental impacts and costs associated with widening the roadway and bridge to provide a 10' wide path would be significant. It would seem reasonable that a design waiver for path width would be justified at this location.			No change needed
11	16	While providing a 5 ft separation would indeed be a costly options, consider re-wording this section to explain what would be required to construct an ideal trail crossing at this location rather than dismissing the feasibility of an option solely on cost.		We believe that the impacts associated with widening the bridge warrant this condition. We will add more text describing the potential environmental impacts associated as well as the costs.			Note added
12	17	I would not rule this out completely solely on cost, this could provide a very scenic pedestrian bridge that could be the focal point of the NAAT. In general cost should not be used as a sole reason we eliminate an option.		Comment noted. We will add more text decribing the challenges associated with this option, including cost and environmental impact. We also believe this is a good option and feel that this could be an ideal medium-term solution for crossing the river, as a next phase to option 5A.			Note added
13	18	I like this option, it keeps the NAAT off the roadway and away from traffic while providing a nice scenery for pedestrians and bicycles. Again cost should not be a sole reason this is eliminated.		Comment noted. We will add more text decribing the challenges associated with this option, including cost and environmental impact. We also believe this is a good option and feel that this could be an ideal medium-term solution for crossing the river, as a next phase to option 5A.			Note added
14	29	$19-20 Million		will add information about cost estimate in document			CHANGE NEEDED

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15	29	This concept to me seems very roadway centered and I don't believe that is the vision or route we as a agency want to take. I would like to keep these types of project separate from the roadway while including as much scenery and connecting as many pedestrian/ bicycle facilities as possible. I believe that is the goal we should try to achieve with any of these projects, we should be connecting and growing bicycle/pedestrian network separate from and current roadway facilities.		Comment noted. While this may not be the preferred alternative, we were scoped with looking at providing a bicycle facility along Route 2 as an alternative to the off-road option.			
16	32	*"..., except for the portion along the bridge which will be narrowed to 8 feet".* Highlighted with no additional comment		See response to Comment 10.			Change made
17	34	*"...Due to the metal trusses on a portion of the bridge over the Hoosic River, the NAAT alignment will include a constrained width of 7–8 feet using the existing sidewalk adjacent to the truss (see Figure 39). However, MassDOT has identifed this bridge for replacement and the design is underway."* Highlighted with no additional comment		Assume this is another reference to the challenges associated with narrowing the path to 8' amid strict AASHTO guidelines. We will add additional text that will clarify the coordination with MassDOT bridge team will look into the potential to accommodate a 10' SUP.			Change made
18	45	$13-14 Million		will add information about cost estimate in document			Change made
19	48	There is little discussion about the AT bridge. The current AT bridge is very narrow and not ADA accessible, while the pedestrian ramps provides some accessibility it is not very wide. I believe it is clear these cannot support the new NAAT, an additional pedestrian bridge would have to be constructed.		will add text acknowledging the existing limitations of the exsting AT bridge and the potential to require an entirely separate bridge and how that would impact the option from a cost and impact perspective			Change made

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20	50	May need to consider an alternate route, this area is tight and I don't believe we could fit a shared used path through here.		There is an approximate 48' cross section for Phelps Ave (back of sidewalk to back of sidewalk). There is a potential property encroachment at the corner of Route 2 and Phelps that would need to be accommodated, but the rest of the way should allow for enough room with potential curb modifications and potential loss of on-street parking/reduction of shoulder. The goal of this alternative is to stay off Route 2 as much as possible and using Phelps Ave to access the municipal fields behind the Greylock School provides great opportunity for a long stretch of off-road path that connects a number of civic facilities. Will add some additional text that discusses this.			Change made
21	56	Please keep in mind grade limitation for shared use path as specified by AASHTO during design process.		Comment noted. Will add note to the text acknowledging the need for field survey to finalize grade accommodations.			Change made
22	57	The SRTS project discussed adding a shared use path along the river. Why is this not an alternative on segment 7?		This alternative focused on the paper street ROW to minimize ROW and environmental impacts as well as take advantage of the existing dirt road and Brayton Hill Terrace.			Change made

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MEMORANDUM

To: Mayor Bernard
From: Zachary Feury; OCD, City of North Adams
RE: NAAT Feasibility Study
Date: September 07, 2021

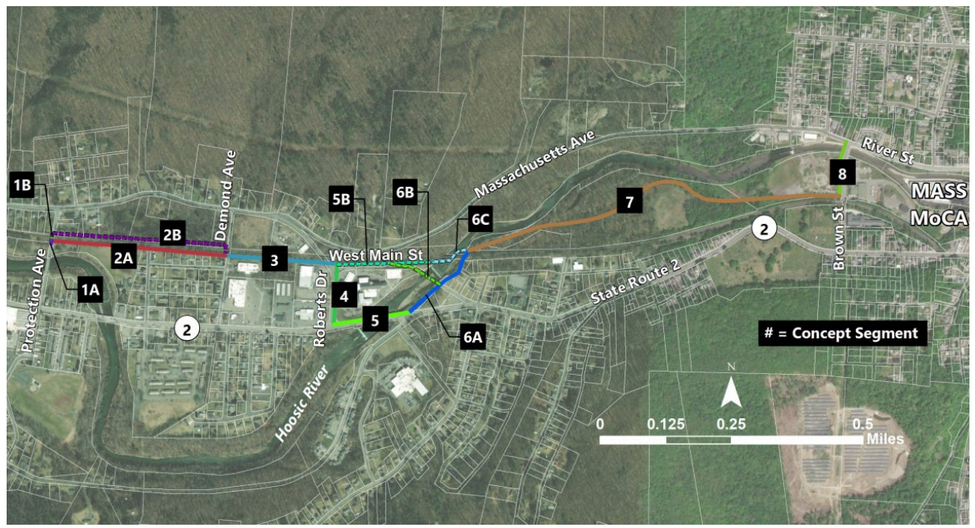
I. Introduction.

1. On Wednesday, September 1, Essek Petrie of VHB, Inc. presented the findings from the MassDOT commissioned North Adams Adventure Trail Feasibility Study (the study) to the MassTrails team and the City of North Adams. Following the presentation, Peter Sutton of MassDOT distributed the draft version of the full study to those invited to the presentation. Mr. Sutton sought comment from recipients of the draft no later than September 15. Below are comments provided by the Office of Community Development (OCD).

II. OCD | NA: Comments.

1. Regarding structure, organization, content, etc. OCD has no comment on the study. The study presents three conceptual alignments and various segments thereof, including options for segments where two feasible alignments exist. The only recommendation OCD suggests is to include cost assessments for each of the three concepts, as cost is a significant determinant of feasibility. Comments on each alignment and the segments thereof, including indications for a preferred alignment and segments, are provided in the paragraphs to follow.

2. **Concept 1.** *Concept 1, which most closely resembles the original "vision" concept, is OCD's preferred concept.* Concept 1, which comprises eight segments with options for segments 2, 5, and 6, is shown below.



MEMORANDUM

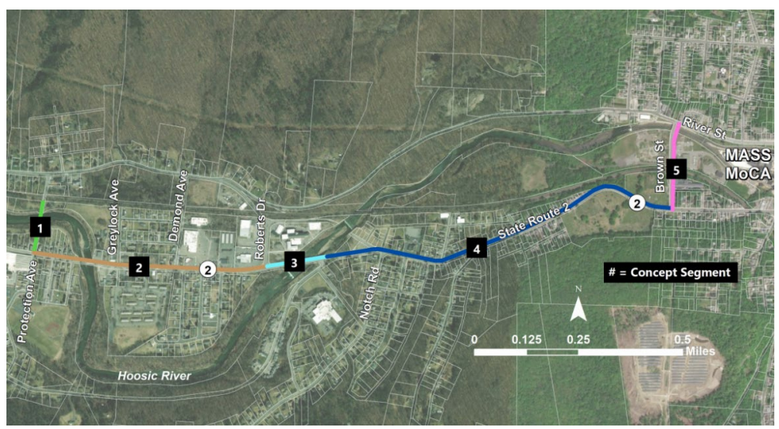
OCD's preferences are as follows:

Segment 2. Segment 2 of Concept 1 parallels the railroad tracks between Protection Avenue and Demond Avenue. Segment 2a is aligned within the railroad right-of-way on the southern side of the tracks. Segment 2b is aligned on private residential properties on the north side of the railroad right-of-way. **OCD's preferred option for Segment 2 is *2a*.** The reasons for preferences of Segment 2a is its comparatively minimal impact on wetlands and private residential properties. Additionally, utilization of Segment 2a, as opposed to 2b, will not require an at-grade crossing of the railroad tracks nor will it require path users to travel through the narrow Demond Avenue underpass.

Segment 5. Segment 5 of Concept 1 provides access to the Norad Mill. Segment 5A utilizes an existing public right-of-way on West Main Street (State Route 2). Segment 5b continues to parallel the railroad tracks. **OCD's preferred option for Segment 5 is *5b***. Recognizing, however, that utilizing Segment 5b will require construction of a bridge crossing the Hoosic River (Segment 6b) and that such construction will require coordination with the United States Army Corps of Engineers, which could delay project completion, OCD recommends that both options be pursued with Segment 5a as the short-term/temporary option and 5b as the long-term/permanent option.

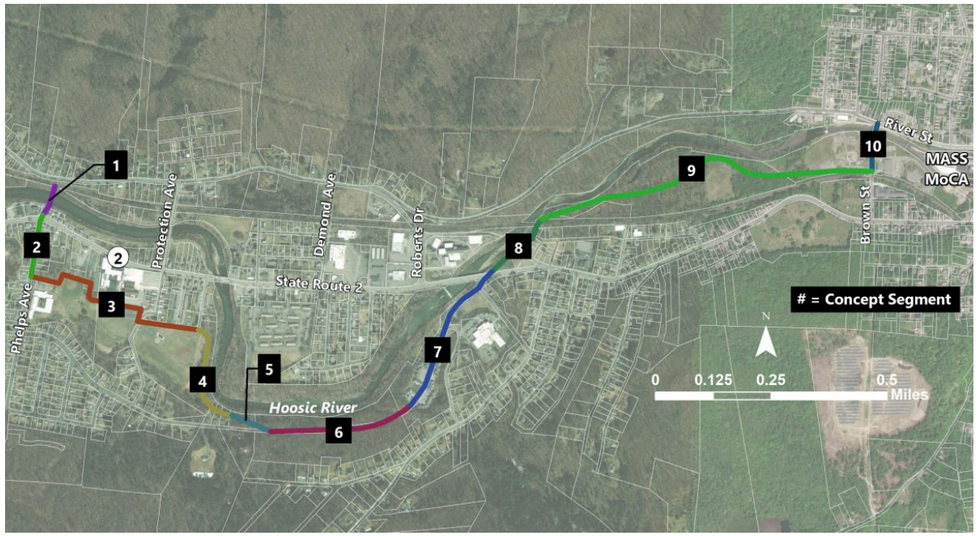
Segment 6. Segment 6 provides access between Segment 5 and the Fairgrounds parcel. The study provides three option for Segment 6: Segment 6a connects Segment 5a on West Main Street to the Fairgrounds parcel via a series of undevelopable parcels (environmental reasons); Segment 6b provides access over the Hoosic River via construction of a bridge that reconnects Old West Main Street, which currently dead ends at the Hoosic River; and 6c, which has been determined infeasible, provides access via construction of a winding bridge that follows the path of the river under the railroad trestle. **OCD's preferred option for Segment 6 is *6b***. For the same reasons as described for Segment 5, OCD recommends pursuing the options for 5a and 5b, with 6a being short-term/temporary and 6b being long-term/permanent.

3. **Concept 2.** Concept 2 is OCD's least desirable concept. Concept comprises five segments utilizing existing or expanded public rights-of-way on Protection Avenue, State Route 2, and Brown Street, as shown below:



Concept 2 has been determined undesirable by OCD due to its use of State Route 2 and potential high cost due to the required relocation of utilities and other structures.

4. **Concept 3.** *Concept 3, while not entirely undesirable, is not preferred*. Concept 3 comprises ten segments and is aligned on the south side of State Route 2, as shown below:



Concept 3 requires crossing of the Hoosic River via a reconstructed Appalachian Trail bridge west of Protection Avenue. The alignment proposed by Concept 3 would then cross State Route 2 and utilized the Phelps Avenue right-of-way before crossing through the Greylock Elementary School (public) campus and the municipally-owned Alcombright Athletic Fields complex via a crossing at Protection Avenue. Concept 3 then follows the path of the Hoosic River before following Barbour Street extension, a paper street, and passing through the Brayton Hill Apartments (affordable housing complex) before crossing State Route 2 and then following the same alignment as Segments 6, 7, and 8 of Concept 1. Despite providing enhanced connection to many public assets and more diverse populations, Concept 3 has been determined undesirable by OCD due to the required reconstruction of the Appalachian Trail bridge, its use of Phelps Avenue and multiple crossings of State Route 2, and its entrance into a neighborhood that has previously demonstrated strong opposition against hosting a bike path.

III. Conclusion.

1. For the reasons described above, the Office of Community Development of the City of North Adams prefers Concept 1 for the alignment of Phase II of the North Adams Adventure Trail.

massDOT
Massachusetts Department of Transportation

Contact

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