Mohawk Bicycle and Walking Trail Feasibility Study, Phase II

Finalizing the Favored Route from the Williamstown / North Adams Boundary to the North Adams City Center

Prepared by the Berkshire Regional Planning Commission

With the cooperation and participation of the

North Adams Bike/Pedestrian Advisory Committee
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BACKGROUND

Residents of Williamstown and North Adams, Massachusetts, have for decades voiced their desire for a bicycle and walking path that would serve as both a recreational asset and an alternate mode of transportation. A 1969 the Williams College class report noted that the Conservation Commissions in Williamstown and North Adams had proposed a bike trail as early as 1968 (Cantor, et al, 2007). This desire has been repeatedly noted in both Williamstown and North Adams during public planning efforts throughout the past several decades. The desire for a multi-use path in North Adams has also been cited in several municipal plans, including open space and recreation and economic development plans. Residents voiced their desire for such a path throughout the public participation forums that were held as part of the North Adams Comprehensive Plan (BRPC, 2014). During this planning process the desire for a multi-use path in the City was raised by residents through visioning forums and workshops, including those that focused on topics such as open space and recreation, the economy, housing and neighborhoods, health, and infrastructure and services.

The rugged terrain of the parks and the private trail systems in northern Berkshire County are havens for hikers and mountain bikers. The region is host to a few long-range trail systems, including the Taconic Crest Trail, the Mahican-Mohawk Trail and the renowned Appalachian National Scenic Trail. However, there are no established trails in gentler terrain to serve the less hardy bicyclists or pedestrians (e.g. families with children, the elderly or disabled) or to serve as alternative transportation routes. The northern terminus of the Ashuwillticook Rail Trail, the county’s 11-mile shared-use path, is in downtown Adams, approximately five miles south of the North Adams city center. An accessible multi-use path connecting the two downtown centers of North Adams and Williamstown could provide urban, accessible recreation as well as serve as a commuter route that could serve the greater than 15% of the local population that does not have access to a motorized vehicle. A multi-use path connecting the two downtown areas would be approximately 5.25 - 6 miles in length. As envisioned, the multi-use path that is developed will one day serve as a northern extension of the Ashuwillticook Rail Trail and, if the extensions were fully realized, this would offer local residents over 20 miles of dedicated pathway.

Several greenway and multi-use path planning studies have been conducted in the past 20 years in efforts to locate the most feasible route that a multi-use path would take to within the communities of Williamstown and North Adams. These include several studies by Williams College students and studies by the Hoosic River Watershed Association, the North Adams Feasibility Committee and the Berkshire Regional Planning Commission (BRPC). In 2000, the North Adams Trail Feasibility Committee investigated several routes that would extend the Ashuwillticook Rail Trail northward from the Adams town line, through the city center and westward towards Williamstown. In general, the proposed route would follow the Hoosic River northward and westward. It would travel through Western Gateway Heritage State Park, across the Hoosic River and through MassMoCA, turning westward along the river.
Phase I Feasibility

The most recent and comprehensive study of a multi-use path, The Mohawk Bicycle/Pedestrian Trail Feasibility and Investment Study, was completed in 2010. Supported by a grant from the National Scenic Byway Program, this study investigated the Hoosic River Valley / Mohawk Trail corridor in an effort to find the most feasible route to connect the two downtown areas. This project was considered Phase I of a multi-phased, multi-year project to develop what was being called the Mohawk Bicycle/Pedestrian Trail. The name of this section of path was named after the Mohawk Trail Scenic Byway (aka Massachusetts Route 2), a scenic historic auto route that also serves as the main east-west travel route in northern Berkshire County.

Phase I consisted of three main components: 1) conduct a feasibility study to determine the preferred and alternative routes, 2) open dialogs with landowners and abutters along the preferred and alternate routes, and 3) develop conceptual designs for particularly challenging sections of the route and estimate design and construction cost estimates for the preferred route.

The completion of the Phase I Feasibility Study resulted in a Preferred Route that was a combination of an off-road and on-road multi-use path. The predetermined eastern terminus of the route was Western Gateway Heritage State Park in North Adams and the western terminus was Syndicate Road area near Route 7 in Williamstown. These end points were chosen as the areas where multi-use path linkages would meet multi-use path development efforts southward to Adams and northward towards Vermont. The area studied was divided up into seven sections, running from Williamstown in the West to North Adams in the east. The length the route is approximately six miles.

Sections 1 and 2 are located in the Town of Williamstown, and the Preferred Route generally runs along the south of the Hoosic River. The route largely travels through undeveloped land, with the exception of the Photech site on Cole Avenue and the former Spruces Mobile Home Park. Landowners along the route consist of Williams College, Town of Williamstown, and Morgan Management LLC. All three owners indicated a keen interest in the development of the trail on or near their properties. The terrain of the route is relatively straightforward, as the terrain is fairly level, there is only one public road crossing at Cole Avenue, and one river crossing at the Green River. The route is not without complications, as much of the route is located within floodplain and/or riverfront resources areas, rare species habitat and could impact existing recreational playing fields.

Sections 3 – 7 are located in the City of North Adams, where terrain, land uses and land ownership are much more complex. In the city the route utilized a mix of on-road and off-road areas, meandering its way to link existing city-owned lands, open spaces and relatively level terrain.

Phase II Feasibility

In 2011 the Mohawk Bike/Ped Project was awarded two grants from the National Scenic Byways Program. The Berkshire Regional Planning Commission (BRPC) was awarded a planning grant to continue to work with the City of North Adams to finalize the route from the Williamstown/North Adams municipal line eastward to the city center. The Town of Williamstown received an engineering grant to bring the multi-use path in that town to 100% design and, if the budget allowed, to work with
North Adams city officials to bring specific sites in the city to 25% design. The Williamstown section of the path is approximately 2.5 miles. This study is the product of the BRPC/North Adams planning grant.

As originally outlined, the Phase II feasibility planning work would further analyze and solidify the route of the Mohawk Bike/Ped Path that would connect the Williamstown section that was in the design process to the North Adams city center. However, early on within the project, the City of North Adams made a decision to heavily focus its energy on finalizing the section of the route that would bring the Williamstown path eastward into the western portion of the city, known as the West End Neighborhood. Feasibility study resources were dedicated to finding that neighborhood connection, including the development of several alternatives known as the Barbour Street Alternatives. These alternative designs included running a multi-use path or shared roadways along Barbour Street, resulting in an off-road route that would directly create a link from Williamstown, through the airport, through the West End, the Greylock Elementary School property and into the city-owned Alcombright Athletic Field complex. Massachusetts Bicycle Coalition (MassBike), an organization with extensive knowledge on practical and creative designs to facilitate bicycle travel in urban and rural settings, visited the area. As part of their work they researched and provided examples of how a multi-use path might be located in the West End neighborhood and in other sections of the city. Staff from Greenman-Pedersen, Inc. (GPI), an engineering firm retained to design the Williamstown section of the multi-use path, provided engineering services and graphic designs to illustrate the various Barbour Street Alternatives. Neighborhood opposition was raised when the first alternatives were offered at a public meeting in the autumn of 2014. Concerns raised most often were loss of privacy and small neighborhood character and the potential risk of drawing strangers to the elementary school. The designs and public meeting materials can be found in an accompanying technical addendum to this report.

In early 2015, as the project progressed and city staff consulted with MassDOT District 1 staff, the option of advancing the western-most section of the path beyond feasibility – to design and construction – emerged. Negotiations were held between District 1, the City of North Adams, the Town of Williamstown and the Berkshire MPO, and it was determined that designing and constructing an additional mile of trail, from the Williamstown border through the Harriman-West Airport to Bud Dougherty Airport Road, could be done through regional cooperation and coordination. If successful, this effort would create an approximately 3.5-mile accessible multi-use path (2.5 miles in Williamstown and approximately 1 miles in North Adams), the first such path for both communities. This was an extraordinary opportunity to take the greatest advantage of having GPI staff already engaged in Williamstown, streamlining the DOT review and construction process, and making the most efficient use of limited financial resources. It was at this time that the City of North Adams made the decision to focus its immediate bike planning efforts on advancing the North Adams segment of the path eastward from the Williamstown line through the airport.

North Adams Landscape

The City of North Adams is located in the deeply incised Hoosic River valley. The river valley and floodplains were developed during the 19th century amid an industrial period in which mills were strategically sited along the riverbank, workers housing was located in neighborhoods close to the mills, office buildings and banks were erected along Main Street and large Victorian homes sat prominently along major roadways. The city was so successful that home builders were forced to expand out of the
valley and locate houses up along steeply sloped hillsides. Many of the city’s neighborhoods are precariously sited on hillsides with slopes approaching 20-25%.

Locating an accessible multi-use path that will connect the two downtown areas is an ongoing challenge. Level terrain that would meet the handicap accessibility slope criteria of 5% severely restricts the areas of the city that can be considered for the route. In general, the gentler terrain is found along the Hoosic River / Route 2 Corridor, but this corridor is heavily developed with residential neighborhoods and commercial and industrial properties. Logistically the route will need to minimize conflicts with the river, wetlands, a heavily-traveled commercial Route 2 and the active Pan Am Rail. The trail will also have to minimize impacts to rare species habitat, which covers extensive areas within the area of study. To be cost effective the route will also need to minimize the amount of land or easements that have to be acquired for the right-of-way. The boundaries of the North Adams study area are the Williamstown/North Adams municipal boundary to the west and the city center to the east.

Public Choices

During the Mohawk Bicycle/Pedestrian Trail Phase I Project, public input was sought to identify the needs, desires and concerns of local residents, officials, businesses and institutions. A local advisory committee was assembled to conduct field work and communicate potential routes directly with local residents, landowners and organizations interested or potentially impacted by a multi-use path. Public forums describing potential routes where held in 2007-08. Forum attendance was equally split between North Adams and Williamstown residents and represented representing people of all ages.

Attendees of the forums clearly stated their preference for a multi-use, accessible, family-friendly recreational pathway, envisioning the Mohawk Multi-use path as being similar in design to, and an extension of, the popular Ashuwillticook Rail Trail. Ninety-two percent of attendees were familiar with the rail trail, having had walked or biked it at least one time. Few attendees rode bicycles to commute to work or to run errands, most citing their discomfort of biking on busy connector roads, particularly the Mohawk Trail (Rte. 2), which has a relatively high volumes of traffic, including commercial trucks.

A public survey to further determine bike/ped needs for the region was conducted in 2008. All respondents to the bike/ped survey (no. = 50) except for one stated that they were in favor of a multi-use path connecting the downtown areas of North Adams and Williamstown. Respondents were asked to choose, out of a list of 11 items, the three most important aspects of a proposed multi-use path. The three most often selected aspects were “Safety” (selected by 24% of total responses to the question), “Accessibility” (selected as 20%) and “Scenery” (selected as 19%). It is believed that safety here is being meant to as safety from motorized vehicles (ATVs, motor bikes, etc.) and vehicular traffic, as many people stated at the meeting and in the survey that a high priority should be to stay away from roads and the railroad tracks. Safety can, of course, also mean safety from crime.

Respondents were asked what they would use a bike/pedestrian trail for. Of the six choices given, “Recreation/exercise” was the most popular (30% of the total responses), “Enjoy the Outdoors” (22% of the total) and “Spend time with family or friends” (20% of the total). Respondents were then asked to check the activities that they would participate in if a multi-use path were developed. Of the eight choices given, “Bicycling” (26%) and “Walking” (24% of the total) were the most often cited activities,
Phase II Evaluation Criteria

Several factors are considered when determining potential and alternate routes. This feasibility study considered two sets of evaluation criteria when investigating potential routes for the multi-use path. The first set of criteria is based upon local residents’ desire to create an accessible multi-use recreational path, similar to that of the Ashuwillticook Rail Trail. These criteria are based upon public input derived from previous planning efforts held in Phase I (2007-10), the North Adams Comprehensive Plan (2011-14) and Phase II public meetings (2014-16). The path would serve as a community asset, providing a place for outdoor recreation, a safe route for families, a means for running errands, and a place to meet neighbors. A recreational path would also serve as a driver for economic development, connecting tourist destinations such Heritage State Park and MoCA to the Clark Art Institute and Williams College. The path itself could become a tourist destination, similar to the bike paths found on Cape Cod.

This first set of locally-based criteria would include these features where feasible:

- Connect downtown Williamstown to downtown North Adams
- Provide a safe and user-friendly bicycle/pedestrian path that could reasonably be used by a family with children
- Locate the trail off road as much as possible, while being accessible to residential neighborhoods
- Maintain a universally accessible grade to accommodate users of all abilities
- Locate the trail near and provide public accessibility to the Hoosic River
- Create connections to destinations such open spaces, commercial, retail and museum properties
- Protect significant and/or sensitive natural and historical resources
- Protect private property
- Offer vistas for trail users
- Eventually connect to the Ashuwillticook Rail Trail

The second set of criteria is based upon multi-use path design standards that are dictated or encouraged by local, state and federal agencies. These standards have been developed in efforts to create multi-use paths that provide safe, accessible recreational and transportation values. These criteria include (but are assuredly not limited to) guidance on path design, including lane width, slope, geometric configuration, road/railroad crossings, bridges, safety features (guard rails, separation barriers, etc.) and surface materials.

This second set of design-based criteria include features that meet the American Association of State Highway and Transportation Officials’ Guide for the Development of Bicycle Facilities (AASTO, 2012). This set of criteria also includes the feasibility or difficulty level of actually siting and completing the path as designed, including landowner and neighborhood approvals, ability to acquire rights of way, avoidance of sensitive sites (e.g. environmental or cultural resource areas), ability to secure permits and total cost.
Fig. 1. Recommended dimensions for multi-use paths

- Ideal pathway width of 14 feet (two 5-foot travel lanes and two 2-foot shoulders). In rare instances where terrain or natural resources cannot be avoided a pathway of 8-10 feet may be required for short distances.

- The travel lanes will be paved, hard surface for full accessibility. Firm and stable hard-packed gravel, airport mix, porous pavement or other appropriate materials will be considered where unique natural resources or other factors make pavement undesirable.

- Strive to meet accessibility guidelines, with ideal slopes of 5% or less. Given the natural terrain and development patterns of North Adams, slopes greater than 5% may be unavoidable in specific sections. In these cases, strive to meet the slope criteria of no more than 8.3% for a maximum of 200 feet, 10% for a maximum of 30 feet and 12.5% for a maximum of 10 feet. Strive to meet a total running grade of no greater than 8.3% for a maximum of 30% of the total trail length.

- Where slopes exceed 5%, incorporate rest areas and other accessible design features.

- Minimize natural resources impacts where feasible (rare species habitat, wetland resources, etc.). This will require careful planning because locating the trail near and providing public
accessibility to the Hoosic River is a local desire and main criteria when considering multi-use path location

- Minimize crossings of Route 2, the Hoosic River, and PanAm Railroad corridors. This criteria is to contain the costs of permitting, designing and construction of such crossings. Strive to utilize existing signalized sites when crossing Route 2 to minimize potential interruption of traffic flow. Pan Am Railroad has stated unequivocally that at-grade railroad crossings will not be considered. It is likely that a minimum of 25 feet setback distance between the railroad tracks and a bike path will be required.

- Avoid or minimize impacts to abutting properties and neighborhoods.

- Utilize and connect existing public lands.
Fig. 2. Separation Between Railroad Track and Path

Source: Adapted from the VTrans Pedestrian and Bicycle Facility Planning and Design Manual

Exhibit 11-18
Recommended Separation between Active Rail Lines and Paths

<table>
<thead>
<tr>
<th>Type of Rail Operation</th>
<th>Setting Characteristics</th>
<th>Recommended Minimum Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Volume/High Speed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 trains or more per day</td>
<td>Typical Conditions</td>
<td>25 feet with fence,</td>
</tr>
<tr>
<td>Max speed over 45 mph</td>
<td></td>
<td>15 feet with a solid barrier</td>
</tr>
<tr>
<td>Constrained Areas (subfill, bridges, etc.)</td>
<td></td>
<td>15 feet with fence or other physical barrier</td>
</tr>
<tr>
<td>Vertical Separation of at least 10 feet</td>
<td></td>
<td>20 feet</td>
</tr>
<tr>
<td><strong>Medium Volume/Medium Speed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than 1 train per day</td>
<td>Typical Conditions</td>
<td>25 feet</td>
</tr>
<tr>
<td>Max speed 45 mph</td>
<td></td>
<td>15 feet with a physical barrier</td>
</tr>
<tr>
<td>Constrained Areas</td>
<td></td>
<td>11 feet with a physical barrier</td>
</tr>
<tr>
<td>High Trespassing Areas</td>
<td></td>
<td>11 feet with a physical barrier</td>
</tr>
<tr>
<td><strong>Low Volume/Low Speed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than 1 train per day</td>
<td>Typical Conditions</td>
<td>25 feet desired</td>
</tr>
<tr>
<td>Max speed 35 mph</td>
<td></td>
<td>11 feet minimum</td>
</tr>
<tr>
<td>Constrained Areas</td>
<td></td>
<td>11 feet with a physical barrier</td>
</tr>
</tbody>
</table>

Adapted from FHWA Rails with Trails: Lessons Learned
Source: VTrans Pedestrian and Bicycle Facility Planning and Design Manual

Source for Figs. 1 & 2: MassDOT, 2006.
THE REVISED FAVORED ROUTE (2016)

The following sections will discuss the route beginning at the western terminus at the Williamstown/North Adams municipal border and travel eastward towards the North Adams city center. The preferred and alternate routes laid out in in the 2010 Mohawk Bicycle/Pedestrian Trail Study were used as the foundations upon which to further investigate and finalize a route that was feasible and acceptable to North Adams city officials, residents and landowners, and to MassDOT. It should be noted that the western two sections of the Revised Favored Route, from the Williamstown town line eastward to the area of the Alcombright Athletic Fields, are substantially different than the Preferred Route of 2010. The eastern three sections of the 2010 route, from the athletic fields to Heritage State Park, have generally remained the same, with a few new alternates in the North Adams city center.

The 2010 Preferred Route traveled eastward from the Williamstown town line along State Road to slightly east of the Redwood Motel, envisioned as a paved multi-use path parallel to but separate from the roadway. The state’s right of way in this stretch of State Road is approximately 60’ wide, allowing for continued two-way vehicle traffic and one 10’ multi-use path, protected by a physical separation. The roadway would be reconfigured and one existing sidewalk would be widened and transformed into a two-lane multi-use pathway. This proposed route was rated as the overall most displeasing section by residents and city officials for a variety of reasons, including:

- Too close to State Road – deemed unsafe and unusable for the target audience (recreational users and families)
- Some required widening, resulting in loss of residential front yard and encroachment upon homes
- Safety concerns:
  - The section has dense development with several driveways / conflict points. Homeowners already have a difficult time backing out of their driveways with current vehicle traffic, and a multi-use path would make it more difficult and worrisome.
  - High volume roadway is major east-west commercial route in the region
- Probable relocation of utility poles

The above listed reasons caused planners and city officials to continue to search for alternate routes for these sections.

The 2010 Preferred Route traveled eastward from the Redwood Motel / Dougherty Airport Road intersection, crossed the Hoosic River, traveled on the north side of the river through the old city wastewater treatment property and traveled south back to State Road, has also been substantially revised. Rather than crossing the river the Revised Favored Route travels along the State Road corridor before turning south to travel through the Alcombright Athletic Fields. Fig. 3 provides an overview of the Revised Favored Route through North Adams.
Fig. 3. Overview Map
Section 1: Williamstown/North Adams Boundary to Bud Dougherty Airport Road

Revised Favored Route: Harriman-West Airport Route
Approximately 6,000 linear feet (0.75 miles)

The North Adams multi-use path will leave the newly created Spruces town park, crossing Mohawk Trail / Rte. 2 in the vicinity of Galvin Road. The route will travel southward along two undeveloped Bay Colony / Fusco parcels west of Chenaille Terrace for approximately 1,250 feet. The route will travel along the edge of an existing parking lot in Williamstown used by the Tang family for their commercial building to the west. This parking lot is located almost entirely on the Bay Colony/Fusco parcel. Williamstown hopes to acquire the western parcel located in that town and the City of North Adams hopes to acquire the eastern parcel located in the city. The route will travel southward along the east of a wetland complex. To the extent possible the multi-use path will be located outside the wetland but will undoubtedly be within the wetland buffer zone. Sections will likely require boardwalking to minimize wetland impacts. Locating the route will be a balance of minimizing impacts to neighboring residential properties on the east and wetlands on the west.

Once on the Harriman-West Municipal Airport property the path will travel eastward along the north side of the airport runway. FAA regulations require that the multi-use path be located at least 50 feet from the runway. The multi-use path will meander to avoid steep slopes and stay compliant with ADA bike/path guidelines. Grading of sections at the western end will be required to meet the ADA guidelines. The airport section of the path promises to be the most scenic, with extraordinary views to the south towards the Mount Greylock mountain complex. At the eastern portion of the airport section the path will travel north of the Shamrock building. In the short term parking for multi-use path users will be provided at the existing parking for the Col-East and Turbo-prop East buildings at the Harriman-West Airport. This parking lot will be painted to clearly designate parking for multi-use path users. In the long term parking will be improved to assure capacity for both users of the path and the commercial businesses.

The City of North Adams is actively seeking development of open land on airport property east of Dougherty Airport Road. Any development will be required to accommodate bicyclists and pedestrians, with the hope that a multi-use path will eventually be developed along the roadway between the airport and State Road. In the interim, Dougherty Airport Road will be developed as a shared road, connecting the bike/path terminus at the airport to bike lanes on State Road.

As of September 2016 the MassDOT, Town of Williamstown and City of North Adams are negotiating a possible expansion of the scope of engineering and construction that is currently under way for the Williamstown portion of the Mohawk Multi-use path. Funding is already in place to procure 100% design and construction of the multi-use path in Williamstown, and engineering is approaching completion of 25% design. Additional funding is being sought to not only bring Williamstown through design and construction, but to also bring the .75-mile airport segment of the trail in North Adams through design and construction. The use of Dougherty Road to reach State Road/Route 2 will bring the length of North Adams segment of the path to approximately 0.9 miles.
Section Pros:

- This route replaces the 2010 preferred route that traveled along Route 2, which was viewed as undesirable by residents attending public forums, by landowners and officials due to so many individual driveways that serve as unsafe conflict points, and by outdoor recreation advocates who desire an off-road experience.
- Adds 0.75-0.9 miles of off-road multi-use path to the Williamstown section, crossing into the West End neighborhood of North Adams and creating the city’s first segment of multi-use path.
- Section is all off-road except for the State Road/Route 2 crossing.
- Adding this extension into the Williamstown engineering and construction process offers a more efficient and streamlined design and construction process, which includes cost savings.
- ADA specifications of 5% or less slope is achievable.
- Avoids crossing and/or taking of any private residential properties.
- Airport offers spectacular views and an interesting destination.
- The Harriman-West Airport land is owned by the City of North Adams and the Airport Commission is highly in favor of this route.
- Terminus at the airport has existing parking, with improved parking planned during new development along Dougherty Airport Road.
- Shared road connector to State Road bike lanes, with plans for multi-use path during new development along Dougherty Airport Road.

Section Cons:

- Requires purchase of land or easements of two Bay Colony parcels west of the airport and two parcels north of the Shamrock building in the eastern section of the airport.
- Concerns of residential property owners near route.
- Fencing and/or screening may be required to minimize impacts to residents on Chenaille Terrace.
- One stream crossing and possibly installation of some board walk sections to avoid/minimize wetland impacts.
- Requires grading in sections on the airport property to meet ADA guidelines.
- Requires creation of a new pedestrian-activated crossing of Mohawk Trail / Rt 2 near The Spruces.
- Requires federal approvals to meet FAA setback requirements.

Section 1 Blackinton Alternates to the Harriman-West Route

The 2010 Preferred Route traveled from the Williamstown town line along State Road and then traveled north across the Hoosic River to Protection Avenue. This route was not favored by the community, and each of the 2010 alternatives to the State Road option involved pinch points that would have required significant concessions and/or takings on the part of residential property owners on Kately Lane and Ashton Avenue. Kately Lane is only 15 feet wide, and locating a 10-12’ multi-use path would place it literally within a foot or two of homes. Locating the route along the stream corridor would place the path within 40-50’ of homes and exit the path on State Road/Route 2.
In 2016 North Adams city officials and planners worked with developers of the Blackinton Mill complex to investigate alternatives that would relocate the route across the Hoosic River at Galvin Road and continue eastward on the north side of the river in the Blackinton section of the city. Staying on the north side of Route 2 eliminates the crossing of the road in this area, as is necessary in the Harriman-West Airport Favored Route. The Pan Am Railroad track is located all along the northern side of the river in this area. Although there is little room to locate a multi-use path in the area just east of the former Galvin Road bridge, the large open expanse of land east of the Blackinton Mill made the route attractive. Several Blackinton alternatives were investigated, both on the north and south side of the river and the railroad tracks. Two Blackinton Alternatives raised to the top due to various terrain, land use and ownership issues. Both alternatives would require creating a new pedestrian crossing west of Protection Avenue.

Section 1 Blackinton North Alternative (Fig. 4 Yellow Route):
From the Spruces the route would cross a newly installed pedestrian bridge at Galvin Road, using the existing bridge footings if possible. The route would become a rail-with-trail, traveling eastward between the railroad and the river. The area between the tracks and the river was measured in the field to be 25-35 feet wide. With a minimum 25’ setback between the railroad tracks and the multi-use path, the path itself would hover along the top bank of the river, likely requiring a retaining wall or cantilever over the river for approximately 1,770 feet. This area is shown on Fig. 4 between yellow brackets. This segment would include the permission and close cooperation of Pan Am Rail, which owns the land between the railroad tracks and the Hoosic River.

Once the route was able to divert farther away from the tracks, it traveled eastward through undeveloped open space to Protection Avenue. The large expanse involves two parcels, one owned by the City of North Adams, which was in the process of being sold to the Blackinton Mill owners, who have indicated an active willingness to host the multi-use path. The path would continue south as a shared roadway on Protection Avenue, west along undeveloped land south of the river and cross State Road/Route 2 into the Alcombright Athletic Fields.
**Section Pros:**

- Very cooperative single landowner east of Ashton Avenue willing to offer easements
- Opportunity for almost one mile of trail through a natural setting, with a mix of woodland and open fields
- Appears to meet the 5% or lesser slope criteria
- Brings the multi-use path closer to Massachusetts Avenue residents
- Opportunity to link with a park being planned by new owners of the Redwood Motel and Greylock Mill
- Connects directly with Alcombright Athletic Field from where the route can travel eastward

**Section Cons:**

- Construction of a bridge at Galvin Road
- Location of the trail within the railroad’s ROW for approximately 1,770 feet of multi-use path would be located along the railroad corridor (~1,350’ Galvin Rd – Ashton Ave and ~420’ Ashton Ave to area where the path could divert away from the tracks)
• Requires permission from Pan Am Railroad to create a rail-with-trail within their ROW and in close proximity to their active tracks; it is highly unlikely that the company, and possibly even MassDOT Rail Division, would permit such a use
• Due to limited space between the rail tracks and the top of the river bank, expansive retaining walls and/or cantilevering may be required for some length of the route
• Wetland permitting to locate a paved or packed stone path at the top and very edge of the Hoosic River would be challenging
• Safety concerns of crossing Ashton Avenue at this site
• Cut and fill will be required for approximately 1,500’ in the vicinity of the AT crossing; all of this area is within Riverfront
• Permission and approvals will be required from Pan Am Rail in the vicinity of the AT
• The route will be on-road on Protection Avenue for approximately 350 feet
• Adds a new mid-block crossing of State Road / Route 2
• Much of the section within rare species habitat and floodplain, the latter of which may require flood storage capacity

This route was abandoned given the difficulty of locating a multi-use path within the railroad’s ROW, particularly in such close proximity to the railroad tracks, and the cost of designing a path with expansive retaining walls and possible cantilevering at the top of the riverbank.

Section 1 Blackinton South Alternative (Fig. 4 Red Route):
A second alternative would be to continue from Galvin Road eastward through undeveloped land, traveling eastward along the river through the Kately Lane / Ashton Avenue curve area, crossing Ashton Avenue and accessing a large expanse of undeveloped land along the Hoosic River. There is very little land between the two homes at the Ashton Avenue curve and the top of the river bank, and any path would be within 20 feet of these homes. The route would cross the river and join the same path as the Blackinton North route would have taken: through the old wastewater treatment plant, Protection Avenue and join Alcombright Athletic Fields.

Section Pros:
• Opportunity for almost one mile of trail through a natural setting, with a mix of woodland and open fields
• Brings the multi-use path closer to Massachusetts Avenue residents
• Very cooperative single landowner east of Ashton Avenue willing to offer easements
• Opportunity to link with a park being planned by new owners of the Redwood Motel and Greylock Mill
• Connects directly with Alcombright Athletic Field from where the route can travel eastward
• Could provide good public access to the river in the section east of Ashton Avenue

Section Cons:
• Land purchases or easements on private undeveloped lands east of Galvin Road
The lack of land between the top of river bank and the residential properties at the Ashton Avenue curve would require construction of a retaining wall in the river bank and/or cantilever over the river; this work would require purchase or taking of land or easements from residential property owners.

- Even with cantilevering the path would likely be within 20’ of residential homes
- A bridge crossing the Hoosic River
- The land east of Ashton Avenue slopes downgradient steeply; grading and/or fill may be required to meet the 5% or lesser slope criteria; if within 200’ of the river this could prove challenging
- Safety concerns of crossing Ashton Avenue at this site
- Construction of a bridge across the Hoosic River
- Cut and fill will be required for approximately in the vicinity of the AT crossing; all of this area is within Riverfront
- Permission and approvals will be required from Pan Am Rail in the vicinity of the AT
- The route will be on-road on Protection Avenue for approximately 350 feet
- Adds a new mid-block crossing of Mohawk Trail / Route 2
- Much of the section within rare species habitat and floodplain, the latter of which may require flood storage capacity

This route was abandoned given the difficulty of locating a 10-12’ path at the top of the river bank between homes on the Ashton Avenue curve, much of which would require expansive retaining walls and possibly cantilevering.

**Section 2: Dougherty Road to Alcombright Athletic Fields Complex**

**Section 2 Favored Route 2016: North Side of Route 2**
**Approximately 2,500 linear feet (approx. 0.5 miles)**

Due to strong concerns raised by Barbour Street residents, the North Side of Route 2 alternative became the favored route in 2016. This route will be designed as a dedicated off-road multi-use path along the northern side of Route 2 for approximately 2,500 feet. The total mileage of a multi-use path from Syndicate Road, Williamstown to Alcombright Athletic Fields, North Adams would provide an accessible path of four miles (for an 8-mile loop). It should be noted that all alternatives considered for Section 2 involve construction in floodplain.

The path will be physically separated from the roadway. The route will travel north on Dougherty Airport Road and, utilizing the existing signalized traffic lights, will cross Route 2 to travel eastward on the northern side of the road. For approximately 800 feet the path will require the construction of a retaining wall along the bank of the Hoosic River. Due to cost and permitting in this area the width of the path may need to be reduced to 10 feet and will require close coordination with MassDOT, which owns and maintains the road in this area. The route will travel eastward to Phelps Avenue intersection where it will cross Route 2 using the existing traffic signal. Once on the south side of the road the path
will continue eastward for approximately 500 feet. The multi-use path width will require utilizing the sidewalk and grass strip that currently exists in front of apartment buildings on the north side of the road and in front of the five houses on Route 2 immediately east of Phelps Avenue. In general the combined width of the sidewalk/grass strip on the north side of the road in front of these homes is 12-14 feet, with the narrowest width being 11 feet at the Phelps Avenue intersection. This allows for the creation of a multi-use path with very little, if any, encroachment on the front lawns of these properties. Treating the surface of the multi-use path through the Phelps Intersection area, such as painting it or embedding a specific texture on it such as faux brick, will help users to more easily maneuver the intersection.

The narrowest combined width of the sidewalk/grass strip on the south side of Route 2 is 9.5 feet at the property immediately east of the Phelps Avenue / Route 2 intersection. The combined width of the sidewalk/grass strips east of this site are generally in the 11-foot range. The multi-use path will turn south off of Route 2 along a right-of-way that the City of North Adams owns, west of the Greylock Club, to travel through the Alcombright Athletic Fields.

It should be noted that at this preliminary stage, the existing bike lanes along this section of Route 2 will remain as is, and will not be effected for the construction of the multi-use path. This is to maintain a separate travel lane for non-recreational bicyclists, such as commuters and long-distance riders. However, impacts to the homes along the southern side of the road could prove too detrimental, such as having the multi-use path run too close to homes for privacy or too close to entry ways for safe egress. If this situation occurs, project designers should work with MassDOT to consider locating the path by narrowing the existing shoulder/bike lane to create space for the path. The approximate length of such a configuration between Phelps Avenue and the city right-of-way would be 400 feet.

Pros of the Section 2, North Side of Route 2 route:
- Dedicated off-road multi-use path for approximately ½ mile
- Terrain meets the 5% or less slope criteria
- Most of the route is located within the existing Route 2 right-of-way or land owned by City of North Adams
- Utilized existing traffic signals
- Provides a direct connection between the current planned terminus at the Harriman-West Airport, the Stop & Shop supermarket, the West End neighborhoods and the Alcombright Athletic Field complex for approximately ½ mile;
- Utilizes two existing signalized crossings
- Utilizes an existing city-owned right-of-way west of the Greylock Club
- Private property impacts are limited to the area around the Phelps Avenue intersection; impacts will be minimized if the footprint of the path can be designed to stay within the existing sidewalk/grass strip footprint
- Despite minimal impacts to residential properties, communication and close coordination will be needed to meet the needs of owners and residents
- Existing shoulder/bike lanes remain for commuters and long-distance riders.
Cons of the North Side of Route 2 route:

- Retaining wall required above the Hoosic River for approximately 800 feet
- Requires the crossing of State Road/Route 2 twice
- To minimize encroachment impacts on residential properties on the south side of Route 2 the width of the path will likely need to be reduced, requiring a design waiver from MassDOT
- Phelps Avenue intersection is in design in 2016, with projected date of construction 2018; depending on final design, the intersection may need to be reconfigured slightly to accommodate safe movement of walker/bicyclists
- Although work will be in the public right-of-way, the City will need to work closely with property owners in the area of the Route 2 / Phelps Avenue intersection.
Section 2 Alternate Route 2016: North of Hoosic River / Protection Avenue

This alternate involved crossing the Hoosic River in the area of the Route 2 / Airport Road intersection and running eastward through undeveloped land that exists between the Hoosic River and the Pan Am Rail. The route would travel through the old city wastewater treatment plant lands south of railroad tracks. The path would be a minimum of 25 feet from the tracks and not within railroad right-of-way, except for a section near the Appalachian Trail bridge crossing, which will likely force the route to be within the railroad right-of-way. The route travels along Protection Avenue and over the Hoosic River bridge as a shared road, turning west to follow along the southern bank of the river. A new crossing of Route 2 in the vicinity of the Greylock Mills will need to be created to access Alcombright Athletic Fields. Note that this route follows the eastern portion of the Section 1 Blackinton South route discussed in the previous report section. Whereas the western portions of the Blackinton alternatives, land west of Ashton Avenue, were the areas that proved the most infeasible, the land north of the river and east of the State Road/Airport Road intersection are less prohibitive.

Section 2 North of Hoosic River / Protection Avenue Pros:
- The route runs through undeveloped lands, getting this section of the route away from a busy, commercial State Road / Route 2
- The land north of the river is currently owned by a developer who is willing to host a multi-use path on the property
- Brings the multi-use path closer to Massachusetts Avenue residents
- Opportunity to link with a park being planned by new owners of the Redwood Motel and Greylock Mill
- Connects directly with Alcombright Athletic Field from where the route can travel eastward
- Terrain meets the 5% or less slope criteria
- Provides a direct connection between the current planned terminus at the Harriman-West Airport, the Stop & Shop supermarket, the West End neighborhoods and the Alcombright Athletic Field complex for approximately ½ mile;
- Utilizes an existing city-owned right-of-way west of the Greylock Club
- Avoids private property impacts around the Phelps Avenue intersection
- Despite minimal impacts to residential properties, communication and close coordination will be needed to meet the needs of owners and residents

Section 2 North of Hoosic River / Protection Avenue Cons:
- The route requires the construction of a bridge over the Hoosic River
- Requires the creation of a pedestrian crossing of Route 2 in the vicinity of the Greylock Mills, approximately 650 feet east of Phelps Avenue; a pedestrian activated beacon or some other safety measure will need to be installed at the site
- The route will likely require cut & fill of the river bank for up to 1,500 feet
- The route will be on-road on Protection Avenue for approximately 350 feet
Analysis: North Side of Route 2 and North of Hoosic River / Protection Avenue

As part of the feasibility study work done for the Mohawk Bike/Ped Path, Greenman-Pedersen, Inc. (GPI) conducted a cost analysis of the favored route and one alternative route that travel eastward from the Bud Dougherty Airport Road. Overall the Hoosic River / Protection Avenue Alternative will be more costly to construct, due to the cost of a bridge over the Hoosic River and to the slightly longer length of it. Where the favored North Side of Route 2 involves the cost of a retaining wall at an estimated $1.2 million, the cost for a bridge for the Hoosic River / Protection Avenue alternative is at an estimated $2 million. The full text of the Technical Memorandum can be found in Appendix A.

Fig. 5. Cost Estimate Analysis of North Side of Route 2 Alternative and North of Hoosic River/Protection Avenue Alternative

<table>
<thead>
<tr>
<th>Work Item</th>
<th>Favored North Side of Route 2</th>
<th>Alternate North of Hoosic River / Protection Ave.</th>
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</thead>
<tbody>
<tr>
<td>Scheduling &amp; Safety Items</td>
<td>$33,000</td>
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<tr>
<td>Excavation/Clearing/Filling</td>
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<td>Drainage (including alteration, additions, pipe culverts, etc.)</td>
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<td>$44,000</td>
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<td>Water work (hydrants, alterations to existing systems for construction)</td>
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<td>Curbing</td>
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<tr>
<td>Guardrail</td>
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<td>$8,250</td>
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<tr>
<td>Fence/Screening</td>
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<tr>
<td>Non-paved Surfaces (shoulders, sidewalks, splitter islands, topsoil/seeding, rip rap/rock fill, etc.)</td>
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<td>$137,500</td>
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<tr>
<td>Miscellaneous Items (amenities, trail signs, etc.)</td>
<td>$24,500</td>
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<tr>
<td>Landscaping (trees/bushes)</td>
<td>$31,500</td>
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<td>Traffic (Signals Listed Below) (conduits, traffic signs, etc.)</td>
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<tr>
<td>Pavement Marking and Signing</td>
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<tr>
<td>Construction Management (erosion control, traffic management, etc.)</td>
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<td>Standard Walls (assume some walls will be needed to make up grades)</td>
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<td><strong>SUB-TOTAL</strong></td>
<td><strong>$819,350</strong></td>
<td><strong>$1,287,550</strong></td>
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**MAJOR COMPONENTS**

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<tr>
<th>Item</th>
<th>Cost</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Traffic Signals</td>
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<td>$120,000</td>
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<tr>
<td>Crossing Beacons (across Route 2 at Alcombright Athletic Complex)*</td>
<td>$20,000</td>
<td>$20,000</td>
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<tr>
<td>Hoosic River Bridge at Airport Road</td>
<td>$2,000,000</td>
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<tr>
<td>Stream &amp; Sherman Brook Bridges</td>
<td>$400,000</td>
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<tr>
<td>Wall between Hoosic River and Route 2 (vicinity of Airport Road)</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$2,160,000</strong></td>
<td><strong>$3,830,000</strong></td>
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</table>

Section 2 Alternate Route 2 South

Another alternative was considered to link the airport to the athletic complex would be to create an off-road multi-use path along the southern side of Route 2. This would be a designated multi-use path.
distinctly separated from Route 2 by some form of physical barrier. Like the northern favored route, the sidewalk and grass strips would be used to create the width needed for a multi-use path. This alternative would likely be the least expensive and would reduce the need to twice cross Route 2, but the high number of driveways / conflict points along this route made it less favorable for its intended use as a recreational path. The existing shoulder/bike lanes along this section of road already provide transportation routes for commuters and long-distance riders.

Section 2 On-road Bike Lanes

The City of North Adams and the MassDOT have agreed to add bike lanes along Mohawk Trail / Route 2 from the Williamstown/North Adams municipal boundary to the city center of North Adams. Much of the route already has wide shoulders that can be transitioned into bike lanes. This will involve painting bike symbols along both sides of the road and installing signage to inform the public of the new bike lanes. These bike lanes will continue the ones installed along Route 2 from downtown Williamstown to the municipal border. In 2016 Mass DOT installed bike lanes from the Williamstown/North Adams town line to the Protection Avenue intersection.

The bike lanes are seen as a permanent improvement for bicyclists who prefer a dedicated bike lane, such as commuters or long-distance recreational users. The lanes are also viewed as an interim route for residents in the West End to access the off-road Williamstown/airport multi-use trail being developed. Although riding on Route 2, a busy commercial route, is undesirable, this option is being seen as an interim condition until a more favorable off-road route can be constructed. Painting the bike lanes a solid color in this ½ stretch of roadway would increase vehicle driver awareness and increase bicyclists’ comfort level.

Positive qualities for this alternative include:

- Low cost to implement, as bike lanes are already being planned for this segment of roadway
- Painting the bike lanes a solid color this this ½ mile may install a higher level of comfort for some users
- Immediately linking the West End neighborhood to the proposed multi-use path that is ending at the Harriman-West Airport, offering them 3.5 miles of off-road multi-use path
- Links the multi-use path to the athletic field and the Greylock Elementary School
- Creates an immediate, interim link to the rest of the multi-use path route
- Can incorporate the existing signal at the Airport Road / Route 2 intersection

Negative qualities include:

- Many bicyclists do not feel safe riding alongside traffic, and the on-road aspect of this ½ mile will undoubtedly prevent many multi-use path users from traveling this section; as such this route will be limited in its ability to provide the critical link between the airport and the athletic complex.
- Could increase the number of bicyclists in this section of Route 2 – signage informing drivers of this increase should be installed
- There are several driveways / points of conflict between Chantilly and Phelps Avenues
Many bicyclists will not feel safe riding in the roadway and thus the connectivity between the Williamstown multi-use path and points east will be effectively severed for many potential users. DOT is more likely to fund projects that have the greatest chance of being used by people of all abilities, which means that favored routes are those that are off-road paths separated by a physical barrier.

Section 3: College Avenue / Hoosic River Meander

Approximately 3,700 feet

From the Alcombright fields the route travels eastward across the Hoosic River and along the northern and western shoreline of the large meandering bend of the Hoosic River. The path crosses Route 2 at the Sacco Bridge, which is already signaled for pedestrian crossing due to proximity of the Brayton School and YMCA facility.

Section Pros:

- Level terrain
- Wooded area along the Hoosic River
- Improve existing, limited access to the river
- Land along river is city-owned
- Crossing of Rt 2 at site already equipped with pedestrian-activated signal
- Easy access to and from dense residential neighborhood

Section Cons:

- Path located in floodplain and will likely be inundated at certain times of year
- Requires new river crossing
- Resident concerns
- Steep slope and pinch point where path reaches Rt 2
- Sacco Bridge wide enough to accommodate bike path but will need redesign and changes
- Could displace wildlife that lives there
Section 4: Old Fairgrounds / Former Sprague Site

Approximately 5,500 linear feet

Once crossing to the north side of Rt 2, the path follows the river and tunnels under the PanAm Railroad tracks that are bermed approximately 20 feet high in this area. The exact site of the tunnel will be determined in coordination with PanAm Rail and the Great American Insurance Group, which owns the vacant lots along Alton Place and Avon Street south of the tracks, the old fairgrounds parcel north of the tracks and the former Sprague Electric site. Initial discussions with the GAIG have been positive, although no formal requests for easements or land have been submitted to the company. The bike path will follow existing trails that transect this large, forested parcel, avoiding the existing capped landfill that is located adjacent to the railroad tracks.

Section Pros:
- Level terrain.
- Long expanse of undeveloped forested land with one owner
  Owner indicates willingness to locate multi-use path on land
- Opportunity to increase access to Hoosic River

Section Cons:
- Requires permission for tunnel crossing from PanAm Rail
- Requires close coordination between PanAm Rail and Great American Insurance Group for design, permitting and agreements for a tunnel crossing
- Located entirely in floodplain, so path may be inundated during certain times of the year
- Much of site considered wetland, so wetland delineations and designs must be carefully constructed to avoid/reduce/minimize impacts.
Section 5: Brown and River Streets to Heritage Park

Approximately 1,500 linear feet

This section is the most urbanized section of the Williamstown-North Adams multi-use path, as it winds its way through the North Adams city center. This section of the route travels through blocks of dense development stacked with buildings, parking lots, roads, and sidewalks, with almost no open space and in some areas without wide road shoulders with which to work.

Upon exiting the Great American Insurance Group (aka former Sprague) parcel, the path will cross the Hoosic River on the Brown Street bridge and move eastward on the south side of River Street. The most direct route eastward towards the city center and Gateway Heritage Park would be to cross Brown Street and travel through the National Grid property, which abuts MoCA. Unfortunately, the property houses a large office/truck garage and an electrical substation, both of which sit along the edge of the property line, leaving no room for location of a path along the edge of the property.

There is an extremely tight pinch point at the Brown Street / River Street intersection, as there is not enough land between River Street and the concrete chutes encasing the Hoosic River for a multi-use path to physically fit here. Cantilevering the path over the chutes has been offered as an option, but this has many challenges. First is the fact that the Army Corps of Engineers, which has authority of the chutes, will require absolute proof that constructing a cantilever system that would overhang the chutes would not in any way compromise the structural integrity of the chutes. To date the ACOE has not shown much interest in conducting construction of any kind in or near the chutes. Secondly, even if ACOE were willing to work with engineers to develop a cantilever system, the cost will be high.

If the pinch point to the east of the Brown Street bridge can be overcome, the path will run along River Street. There is currently a sidewalk on both sides of the street, and the sidewalk on the south side would be transformed into an 8- or 10-foot multi-use path. The route will again cross the Hoosic River to pass through a tunnel created on the ground floor of Building 5 and wind its way through the campus, exiting onto West Main Street. MassMoCA has been a strong supporter of the multi-use path and is very interested in hosting it on their property if feasible.

The path would cross West Main Street and access Heritage Park using the existing (and improved) pedestrian bridge that crosses over the railroad tracks. West Main Street is very steep and cars travel fast as they exit Route 2 towards the city center. An at-grade bike/ped crossing at the vicinity of the MoCA driveway could prove very dangerous, particularly in low light or during wet, slippery conditions. A safer route would be to create a raised bike/ped overpass, starting the incline north of the road on the MoCA property, over West Main Street and, remaining raised, join the already elevated existing pedestrian bridge over the rail tracks. This raised pathway would more directly link MoCA and Heritage Park, and may help to alleviate the existing slope associated with using the bridge over the railroad tracks. Another design could be the construction of a tunnel underneath the road.

The exact route through the MoCA and Heritage Park properties would require close cooperation with landowners and the city of North Adams, as these sites are currently undergoing renovation and expansion plans. Also, the section of path that travels through the MassMoCA facility will only be
available to the public during normal business hours, and will thus be closed at dark or during special MoCA events (such as ticketed weekend-long events). To meet MassDOT requirements that multi-use paths serving commuters be accessible to the public 24 hours a day, an alternate on-street bike lane has been proposed that will allow bicyclists to move along Marshall or Holden streets to access Main Street.

Pros:

- Level terrain
- Brown Street bridge is currently in design for replacement. It is the optimum time to incorporate needed improvements to host bike/ped crossings
- Utilizes the existing pedestrian bridge to cross the railroad corridor into Heritage Park
- Several potential sites for parking at public lots in city center
- Include an interesting section through the MassMoCA facility, enhancing the experience of both path user and museum visitor
- Incorporates new development at Gateway Heritage Park

Cons:

- Brown Street bridge revision will be more costly
- Pinch point at the Brown Street / River Street intersection, where there is very little land for locating bike path
- Two river crossings: Brown Street and into MoCA
- Creating safe bike/ped crossing of West Main Street needed
- On-street alternate needed for times when MoCA section is unavailable

*River Street Bike Lanes*

While a permanent off-road multi-use path is being designed that will like the Sprague property to Gateway Heritage Park, bike lanes along River Street and Holden Street could be created. Painting the lanes could not only increase the visibility of the lanes for both bicyclists and motorists, but help direct lane users who might want to stay on the route of the multi-use path.
REFERENCES


Cantor, Josh; Dunfee, Ryan; Oubre, Jared; Swimm, Ben. 2007. *Mohawk Bicycle and Pedestrian Path: A Roadway Feasibility Study*, Williams College, Williamstown, MA.


APPENDIX A:

ENGINEERING ANALYSIS FOR ALTERNATIVES FOR SECTION 2 OF THE NORTH ADAMS MULTI-USE TRAIL
INTRODUCTION

Greenman-Pedersen, Inc. (GPI) conducted an alternatives analysis for the Berkshire Regional Planning Commission (BRPC) and the City of North Adams to explore the extension of the proposed Mohawk Bicycle/Pedestrian Trail from Airport Road at Route 2 to the entrance of the Alcombright Athletic Complex in North Adams, Massachusetts. The proposed alternatives include two main routes with the second route having two alternatives crossing Route 2. These alignments can be seen in Figure 1, provided to GPI by the BRPC, and are described below.

The Mohawk Bicycle/Pedestrian Trail from Williamstown to North Adams covers a distance of approximately 6.5 miles, with 2.5 miles in Williamstown and 4 miles in North Adams, and runs from the intersection of Syndicate Road and Route 7 in Williamstown to the future northern terminus of the Ashuwillticook Trail at Western Gateway Heritage Park in North Adams. Funding for the design and construction of the bike/pedestrian trail in Williamstown is largely secured, and the town is currently in the design process for their section which terminates at the former Spruces property at the municipal boundary. The City of North Adams is currently working to secure funding for the design and construction of the trail that will extend eastward from the Spruces along the Herriman-West Airport to a terminus at the Airport Road.

The two alignments which were evaluated are shown on Figure 1 as the Favored Route (shown in red) and the Alternative Route (shown in yellow). The Blue Route on Figure 1 was not evaluated due to the high number of driveways/conflict points, right-of-way impacts and the deviation from the intent of the trail which is to provide an aesthetically pleasing and safe route. It should also be noted that the route suggested by the MassDOT District 1 office (Pink Route along Phelps Avenue) was not evaluated due to the City’s concerns with right-of-way impacts and pinch points of less than 6’ between the roadway and immovable objects on Phelps Ave.
North Adams bike/ped path route – Airport Road eastward to Alcombright Athletic Field Complex
Each route involves a dedicated multi-use bike/ped path with two-way travel; multi-use path avoids approx. ½ mile of on-road bike travel in bike lanes

Yellow route = bridge over Hoosic River, route north of the river but south of railroad, sharrow on Protection Ave, ped-actuated Rt 2 crossing into athletic fields approx. 630’ east of Phelps Ave

Red route = north side of Route 2 to Phelps Ave; east of Phelps 2 there are alternate routes to athletic fields:
  Alternate 1 = stay on north side of Route 2 for short segment, ped-actuated signal to cross Route 2 into athletic fields approx. 400’ east of Phelps Ave
  Alternate 2 = cross Route 2 at Phelps Ave, travel on south side of Route 2, enter into athletic fields

Blue route = south side of Route 2, through Phelps Ave, enter into athletic fields.

Pink route = MassDOT District 1 alternative
The intent of both the Favored and Alternative Routes are to provide an off-road bike/pedestrian trail to the greatest extent possible. Both the Favored and Alternative Routes would cross Route 2 at the existing signal at its intersection with Airport Road. The Favored Route parallels Route 2 on the north side of the roadway, south of the Hoosic River, to the intersection with Phelps Avenue. At Phelps Avenue, the route splits into two potential alternatives - continue on the north side of Route 2 for approximately 400’ to cross near the western side of the athletic fields; or cross Route 2 on the east side of the Phelps Avenue/Route 2 intersection and continue on the south side of Route 2 to the fields.

The Alternative Route includes a bridge over the Hoosic River to the former North Adams Waste Water Treatment Plant (NAWWTP) property and continues east along the river and south of the railroad to Protection Avenue where a sharrow (bike/vehicle shared lane) is provided. Once across the river, the trail continues in a westerly direction along the river and crosses Route 2 along a city property right of way near the eastern side of the entrance to the athletic fields, approximately 630’ east of Phelps Avenue.

EXISTING CONDITIONS

The land adjacent to the proposed routes consists of a mix of residential, commercial and industrial properties. Route 2 in the area of the study has recently been striped with bike lanes. Sidewalks are found on the south side of Route 2 for the entire project area and for about 850’ feet on the north side of Route 2 in the vicinity of Phelps Avenue. The Appalachian Trail crosses the Hoosic River from Massachusetts Avenue over the railroad tracks and meets Route 2 at the Phelps Avenue intersection.

The routes considered for this analysis closely follow the Hoosic River and therefore are in close proximity to FEMA designated 100-year floodplain. Due to several significant floods between 1927 and 1938, the US Army Corps of Engineers (ACOE) constructed the North Adams Local Protection Project. This project involved modification to over 5.8 miles of the North Branch, South Branch and Main Stem of the Hoosic River to help protect the city from future flooding.1 The downstream limit of the ACOE project is in the vicinity of the former NAWWTP, which is the beginning of both of the potential Mohawk Bicycle/Pedestrian Trail alignments. Both sides of the Hoosic River have earthen berms from about 500 feet east of Airport Road to the Barber Dam, across Route 2 from Chantilly Avenue. To east of the dam, the earth berm continues on the south bank of the river while the existing topology, strengthened with rock, provides protection to the north. In the vicinity of Phelps Avenue, the southern bank is protected by a concrete wall while the Appalachian Trail gains elevation over this wall and crosses the Hoosic River with a narrow pedestrian bridge, also constructed in 1958 as part of the ACOE project. While these earthen berms and walls protect the city from floods, some portions of the path may still impact the FEMA 100-year Floodplain.

1 North Adams Local Protection Project (http://www.nae.usace.army.mil/Missions/Civil-Works/Flood-Risk-Management/Massachusetts/North-Adams/)
In addition to the overall floodplain concerns, several additional environmental resources will be impacted and need to be considered. Two portions of the path will fall within known Bordering Vegetated Wetlands. Both of the proposed routes fall within Zone II Public Water Supply and both routes are within NHESP Priority Habitats of rare species, with the exception of an area near Phelps Avenue.

**PROPOSED CONDITIONS**

**Alternative 1 - Favored Route**

The Favored Route creates a more direct path than the Alternative Route. The trail crosses Route 2 at the Airport Road signal and immediately turns east and follows along the northern side of Route 2. A portion of this area is private property and may require an easement if the trail could not be constructed within the roadway layout.

The bank of the Hoosic River is very close to the edge of Route 2. A guardrail currently separates the roadway from the 25 foot drop into the river for a length of approximately 800 feet between the intersection and Hawthorne Avenue. This 800 foot stretch would most likely require a wall to carry the trail for the entire length. Within this section, there is a 4’ by 4’ box culvert under Route 2 that would need to be extended and incorporated into the wall structure. The drainage from Route 2 currently flows through paved swales over this embankment and would also need to be considered in the design of the wall. A closed drainage system with a treatment area would likely need to be constructed once curbing is installed along Route 2. Additionally, the heavily loaded utility poles are located on this side of the road and would need to be relocated to construct the trail.

Once the trail reaches the end of the existing guardrail, the terrain levels out for a very short distance before the earthen berm previously mentioned begins. The path would be placed alongside this berm, and would require filling the slope to provide enough width for the path. The berm does gain elevation slowly, so only minor profile changes would likely be required for the trail to follow the berm.

Following the river along the berm, the trail would enter a portion of the flood control project which is currently fenced in to protect a drainage basin, the Barber Dam and associated equipment. A concrete retaining wall lines the Hoosic River with a significant drop to the water. An inadequate chain link fence is mounted at the top of the wall, so some form of better pedestrian protection would be required between the path and this wall. Some minor grading would be required to accommodate the trail on the shelf that currently exists between two slopes, or significant grading to place the trail on top of the slope to provide better views of the river and beyond.

After the trail passes the Barber Dam and approaches the former Our Lady of Mercy Church, the alignment returns towards Route 2 between a parking lot and a wetland. Discussions would need to occur to determine the feasibility of modifying the parking lot versus impacting the wetland or...
building a boardwalk over the wetland. The trail then follows the roadway towards Phelps Avenue. Currently, a 10’ grass strip separates a 4’ sidewalk from Route 2. MassDOT is in the process of redesigning this intersection to provide a safer design\(^2\). The proposed plans show the grass strip being reduced to 6’ and the sidewalk being increased to 5’. A bus stop is also proposed in this area which would further reduce the available space for a shared use path. If this route were chosen, close coordination with MassDOT would be required in addition to a permanent easement or taking to provide the proper widths for the trail.

The Favored Route crosses the Phelps Avenue intersection over the driveway on the northern side and then splits into the two additional options: either cross Route 2 at the signal here or continue on the north side of the road. The MassDOT proposed design continues to propose a 6’ grass strip and 5’ cement concrete sidewalk on both sides of the road to the east of Phelps Avenue. The constraining factors at this point would be available right of way and existing building features.

On the north side of Route 2, there is at least an additional 3’ from the back of the proposed sidewalk to the layout line, according to the proposed design plans. In a couple of locations, the steps to the houses meet the layout line, so it would be advantageous to provide extra separation between the steps and the trail if space were available. A balance would need to be reached between the widths of the grass strip and the trail while fitting in the existing right of way.

For example, the Assabet River Rail Trail is currently under construction in Maynard, MA with similar restrictions. The design has gone through the MassDOT review process and the final decisions for the constricted spaces were to provide an 8’ trail with 2’ shoulders or a 10’ sidewalk/trail with no shoulder on the road side. These two options both required a Design Justification Report to explain exactly why the minimum design standards could not be met, but once completed, it was agreed that no other option was feasible. A similar report could be prepared if the minimum design could not be met in this area of the trail.

Easements or takings would only be an option if the sidewalk were raised by increasing the slope of the grass strip and then rebuilding the steps at the back of the sidewalk. More detailed topography would need to be obtained to determine if this would cause drainage issues on private property.

Once the trail reaches the area of the Alcombright Athletic Complex, a pedestrian actuated beacon/signal would be installed to provide a mid-block crossing. Further evaluation of the crossing location would need to be conducted to determine the type of treatment option to be proposed.

The other option is to cross the path at Phelps Avenue and continue on the south side of Route 2. In this location, the back of the proposed sidewalk meets the layout line and existing steps in one location. If easements or takings were obtained, these steps could potentially be rebuilt to provide

\(^2\) Massachusetts Department of Transportation Highway Division Intersection Improvements Route 2 / Phelps Ave in the Town of North Adams Berkshire County, draft of 25% Submittal
Alternatives Analysis - Airport Road to Alcombright Athletic Complex

Mohawk Trail North Adams, Massachusetts

additional width. However, this would not provide enough additional width to meet the requirements for the proposed trail. The actual structure is in excess of 17’ from the edge of the proposed roadway, so there is potential that the grade of the grass strip could be adjusted to raise the sidewalk and eliminate the need for a step at this house. This would require an easement as well as close coordination with the building owner. The trail then continues to and enters Alcombright Athletic Complex.

Alternative 2 - Alternative Route

The Alternative Route begins by crossing Route 2 at the existing signal of Airport Road and immediately requires a bridge to cross the Hoosic River. The majority of the property to the north of Route 2 through which the route travels is the former NAWWTP. This property is currently owned by the City of North Adams, but is currently in the process of being sold to a private developer. Any structure in this area will require the granting of a permanent easement to the city to ensure public access in perpetuity. The southern bank of the Hoosic River is approximately 25’ high in this area and 10’ on the northern bank. The distance between the banks is between 160’ and 180’ in this area. This unique geometry would require extensive engineering to determine the best balance between filling floodplain and extending the span length. A hydraulic analysis would be required as well as the filing of a Chapter 91 license with the ACOE.

According to MassGIS Oliver mapping, the area north of the potential bridge crossing is a wetland. This parcel is in the process of being sold to a developer for commercial use. The potential owner has expressed interest in having the Trail along the edge of the property as well as the desire for a pedestrian bridge over the Hoosic River, even if it must be installed as part of the development. Further discussions would be required to determine the feasibility of a mutually agreeable bridge to meet the request of the developer and the requirements of permitting and funding agencies.

Once on the north side of the Hoosic River, the alignment would continue through the woods at an acceptable grade to get alongside the earthen berm previously mentioned. The trail would not change the function of these berms, so discussions would need to occur with the ACOE to determine any restrictions for constructing the trail near the berms.

The ACOE berm follows along the former NAWWTP property with the exception of a 350’ section of retaining wall near the Barber Dam. A more substantial fence would be required between the path and the concrete walls of the dam to replace the existing chain link fence. Following the wall to the end, the trail would be heading straight for the railroad tracks and need to bend into the woods. These woods provide a wildlife habitat that would need to be considered as the trail blazes through.

Immediately after leaving the clearing of the NAWWTP, the alignment crosses a small stream. The size of structure required would be determined once the limits of the bank have been established. The Trail then follows the Hoosic River and the railroad tracks through the woods, cutting into the slope and possibly requiring the construction of a wall on the south side of the path. The trail then squeezes between the river and the railroad and maneuvers around the existing
piers of the Appalachian Trail pedestrian bridge. As the trail continues further east, a smaller bridge is required to cross Sherman Brook. A hydraulic analysis would likely be required for both the smaller stream and Sherman Brook crossings based on the hydrologic connection of these features.

The trail then enters a stretch of cleared land before reaching Protection Avenue. To minimize the cost associated with the project, adding sharrows to Protection Ave would be the first design to analyze. The traffic volumes on this road appear low enough to support this design, however, both lanes would require the designation, therefore cyclists heading northbound would be required to cross vehicle traffic for a short stretch of less than 200 feet. There is a concern that cyclists would not obey the laws of the roadway in this area.

After turning off of Protection Ave, the trail crosses private property, depending on the exact property limits and trail alignment, and then again follows the earthen berm to a City owned parcel of land where an at-grade, pedestrian actuated beacon/signal at Route 2 would be installed to access Alcombright Athletic Fields. As with the Favored Route, further evaluation of the crossing location would need to be conducted to determine the type of treatment option to be proposed.

COST ANALYSIS

The cost of a shared use path depends on many different factors, but recent projects have shown that the majority of items have a fairly consistent price per mile. Three recent projects that have been designed by GPI and put out to bid by MassDOT have been analyzed to determine similarities between project items. The items shown in the top of Table 1 are the items seen in all three projects with very similar prices per mile.

Beyond these typical items, there are a few major components that can be independently estimated to help get a sense of an overall general cost. These items are also shown in Table 1. The total estimated construction cost for the two Routes analyzed is the final line of the table.
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<tr>
<th></th>
<th>Favored Route</th>
<th>Alternative Route</th>
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<tbody>
<tr>
<td>Scheduling &amp; Safety Items</td>
<td>$33,000.00</td>
<td>$21,000.00</td>
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<tr>
<td>Excavation/Clearing/Filling</td>
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<td>Drainage (including alteration, additions, pipe culverts, etc.)</td>
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<td>Water work (hydrants, alterations to existing systems for construction)</td>
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<tr>
<td>Guardrail</td>
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<tr>
<td>Fence/Screening</td>
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<tr>
<td>Non-paved Surfaces (shoulders, sidewalks, splitter islands, topsoil/seedig, rip rap/rock fill, etc.)</td>
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<td>Miscellaneous Items (amenities, trail signs, etc.)</td>
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<td>Landscaping (trees/bushes)</td>
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<td>Traffic (Signals Listed Below) (conduits, traffic signs, etc.)</td>
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<td>$14,300.00</td>
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<td>Pavement Marking and Signing</td>
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<tr>
<td>Construction Management (erosion control, traffic management, etc.)</td>
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<td>Standard Walls (assume some walls will be needed to make up grades)</td>
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<td><strong>SUB-TOTAL</strong></td>
<td><strong>$819,350.00</strong></td>
<td><strong>$1,287,550.00</strong></td>
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**MAJOR COMPONENTS**

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<tr>
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<th>Favored Route</th>
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<tbody>
<tr>
<td>Traffic Signals</td>
<td>$120,000.00</td>
<td>$120,000.00</td>
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<tr>
<td>Crossing Beacons (across Route 2 at Alcombright Athletic Complex)*</td>
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<td>$20,000.00</td>
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<tr>
<td>Hoosic River Bridge at Airport Road</td>
<td>$2,000,000.00</td>
<td>$400,000.00</td>
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<tr>
<td>Wall between Hoosic River and Route 2 (vicinity of Airport Road)</td>
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**TOTAL** $2,160,000.00 $3,830,000.00

Table 1- Estimated construction costs

*The Favored Route will have similar costs associated with either of the options east of Phelps Avenue. It is assumed that the crossing would be coordinated with the proposed MassDOT project at Phelps Avenue and the costs associated with any modifications to allow for a crossing of Route 2 at the signal would be similar to the costs associated with a beacon crossing east of the intersection at the city fields as included in the Alternative Route option.
CONCLUSIONS

The alternatives presented in this analysis will provide the opportunity to extend eastward the Williamstown/airport segment of the proposed Mohawk Bicycle/Pedestrian Trail in North Adams. This connection can currently be made through the use of sidewalks and on-road bicycle facilities, but this does not meet the fundamentals of the Trail to provide an off-roadway connection. Similarly, the Blue Route shown in Figure 1 follows Route 2, off the roadway, but without showcasing the aesthetics of the area.

The Favored Route and Alternative Route are both generally feasible. The Favored Route’s biggest obstacles are the wall between the Hoosic River and Route 2 and the constraints after the intersection with Phelps Avenue. These types of hurdles have been seen on similar trails and have been overcome through the engineered design. The Alternative Route has larger hurdles that will take additional engineering to overcome but are not impossible. The bridges over the Hoosic River, small stream and Sherman Brook can all be analyzed, designed and built as all bridges can be. The trail through the woods will take some effort to survey and design, but that too can be done. The sharrows can also be painted on Protection Avenue, but it will be difficult to enforce lawful obedience for the bridge crossing. Both Routes can be analyzed for the best crossing for access to the Alcombright Athletic Complex.

As shown in Table 1, the Favored Route and Alternative Route each have significantly different construction costs associated with them. The Alternative Route will get the trail users further away from Route 2, but with a much larger price tag. The next step would be to determine if the benefits outweigh the additional cost and design complications.