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Northern Strand Community Trail

Conceptual Design Report

Prepared for
City of Everett, Massachusetts

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Background

The City of Everett, through a grant from the Gaming Commission, received funds to study the feasibility and develop concepts for the extension of the Northern Strand Community Trail. HSH was selected by the City to carry out this endeavor built around a robust public involvement process with involvement from all the stakeholders in and around the project area. The long list of stakeholders included Department of Conservation and Recreation (DCR), Massachusetts Department of Transportation (MassDOT), Massachusetts Bay Transportation Authority (MBTA), DDR Corporation (DDR – Gateway Shopping Center), and the City of Everett. It is through this process that HSH has developed two refined design alternatives, a comprehensive cost estimate, and a clearly documented process through each design alternative, public information meeting, and stakeholder meeting. Although this report will have been completed prior to a final Public Information Meeting, it is important to note this will then transition the existing partnership between the City and HSH into the next design phase towards eventual construction of the Northern Strand Community Trail Extension.

Existing paved portion of the Northern Strand Community Trail in Everett.

The Northern Strand Community Trail has had a long storied history. Since 1993, bicycle advocates and neighborhood groups have been working with the City of Everett and other municipalities in the region to create the Northern Strand Community Trail: a biking and walking trail that currently extends from West Street/Wellington Avenue near the neighborhood referred to as the "Village" to the Lynn Commons through Malden, Revere, and Saugus. At ten miles long, the Northern Strand (which is a part of Bike to the Sea, also known as the "Community Trail" for each municipality it passes through) was built along the Boston & Maine Railroad Saugus Branch, and has now been designated as part of the East Coast Greenway which extends 3,000 miles from Calais Maine down to Key West Florida. Roughly one third of that distance is accessible via "car-free" biking and walking trails.

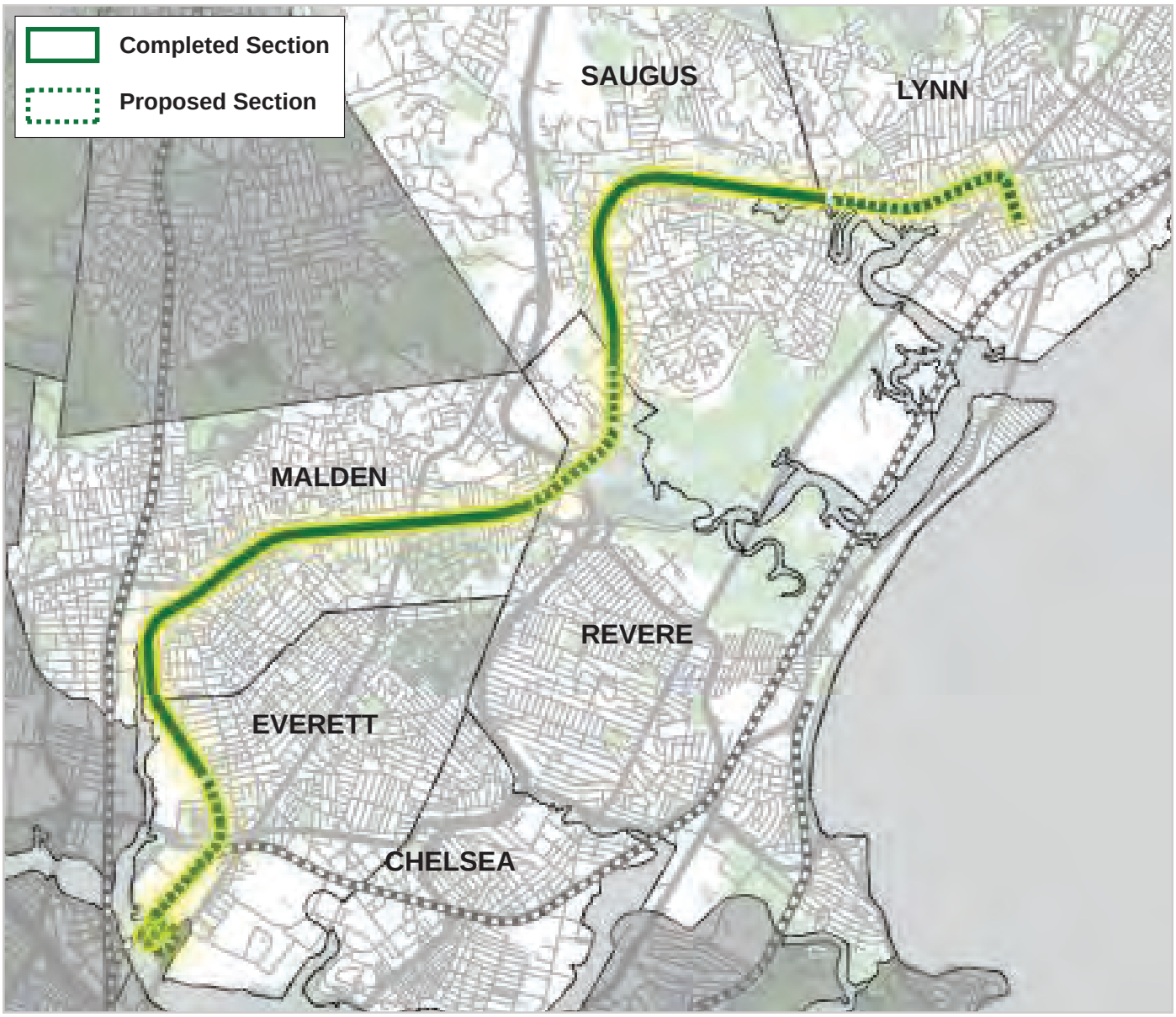
The City of Everett is now poised to extend this segment of the trail to the Mystic River and Boston city limits, as shown in **Figure 1**. This segment will provide a critical missing link, with access to the soon to be completed Wynn Boston Harbor, the Gateway Shopping Center, and downtown Boston. Other improvements being evaluated through various planning studies will look to create

safe and accessible connections to Wellington MBTA Station, the shops at Station Landing, and Assembly Row in Somerville via a proposed pedestrian bridge.

Two conceptual alignments for the trail were originally proposed by the City of Everett. As part of the scope of the project, HSH facilitated a series of stakeholder meetings with parties affected by the trail: MBTA, MassDOT, DCR, Bike to the Sea, Wynn Boston Harbor, and DDR, who own the Gateway Center retail space bounded by the Revere Beach Parkway, Mystic River, and MBTA rail line. The findings of these meetings, as well as a public meeting held early in the process, were essential for identifying the key opportunities and challenges of the project.

This report documents the existing conditions of the trail, the design approach, various design considerations, the proposed alignment alternatives, basic cost estimates for construction, and the next steps to be taken to develop a final design.

Figure 1. ***Existing and Proposed Northern Strand Community Trail***



Proposed sections of trail will complete the connection of the existing Northern Strand Community Trail from Everett to Lynn through Malden Square

Source: www.biketosea.com

Not to scale.

Existing Conditions

The condition of the Northern Strand Community Trail varies along its length. The Trail currently extends through Everett from the border with Malden along the MBTA rail line south to West Street/Wellington Avenue where it terminates. The portion already improved through Everett and Malden is paved and well-used. At the other end of the trail in Lynn the route is a cleared, unpaved dirt trail. In between, stone dust and other surface treatments are used. Local advocates and Bike the Sea organizers continue to work toward paving all sections of the trail, while rallying the local community to support extensions of its length and connectivity. A map showing how this trail extension fits into the existing bike network is shown in **Figure 2.**

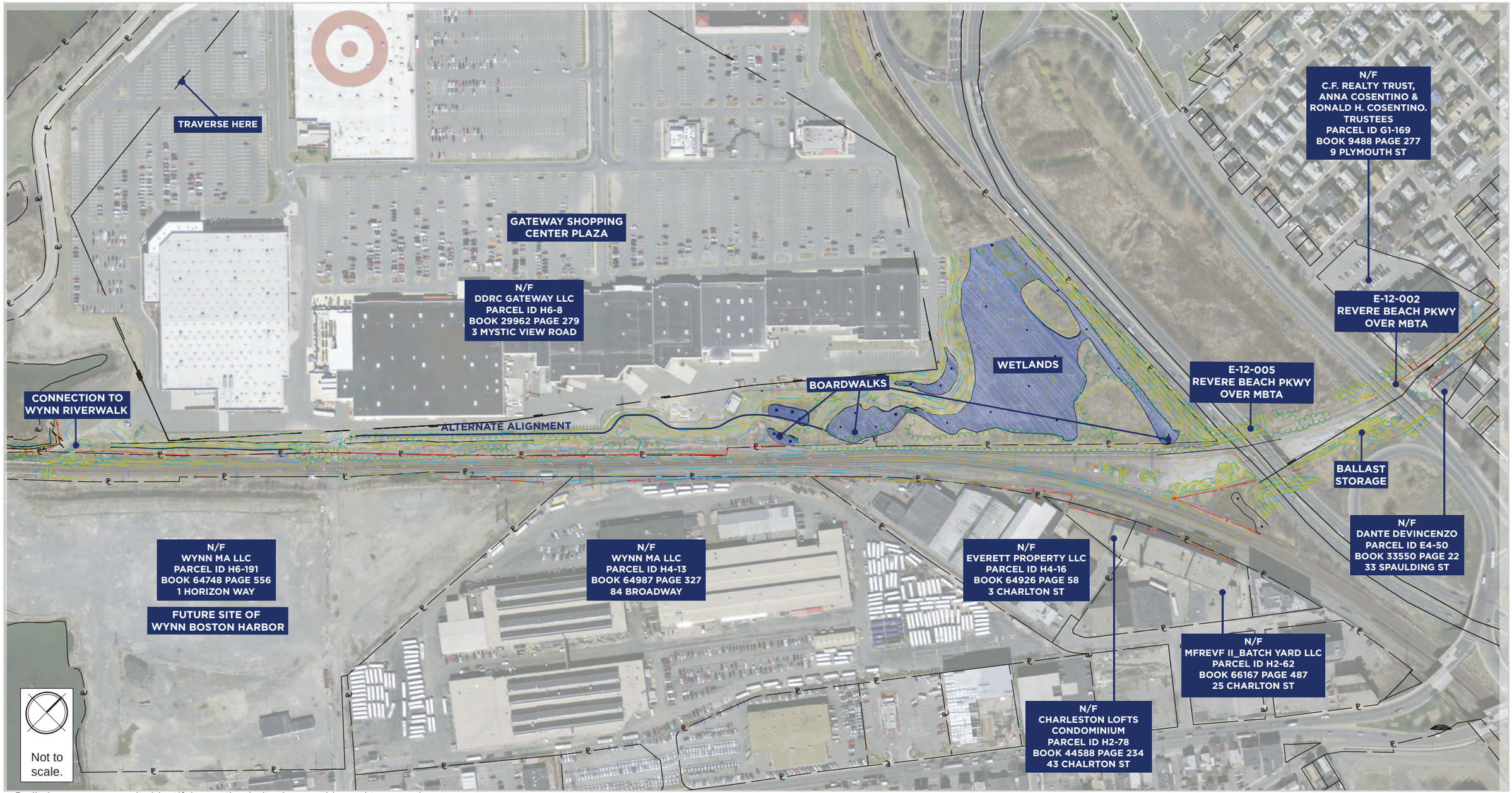
Initial conversations with the stakeholder group brought to light the opportunity to connect the Trail to the Harborwalk Trail proposed by Wynn Boston Harbor. The trail extension has strong community and municipal support; however, a few key challenges were also identified. As this report will expand on, the trail extension must navigate through and around the MBTA's existing stone ballast operations and storage, wetlands on DCR and private land, and back-of-house uses, such as loading and docking, of the stores on the east side of the Gateway Center. These challenges were addressed, resulting in the final concepts outlined in the Proposed Design section.

A partial aerial survey was conducted by Green International Affiliates, Inc., including proximity of wetlands delineation and land ownership. While the final survey is yet to be completed, it is critical in guiding the development of the design with a preferred concept guided towards minimizing impacts to natural resources as well as to property owners. The preliminary results of this survey can be seen in **Figure 3.**

Figure 2. ***Existing and Proposed Bicycle Network***

Map of existing and proposed regional bicycle and pedestrian facilities shows that the Northern Strand Extension provides a necessary missing link.

Figure 3. ***Survey Results***



Preliminary survey results identifying wetlands, land ownership, and typography.

Transportation Impacts

The new investments and a new resort on the northern bank of the Mystic River promise significant new opportunities for walking and biking accommodations. As discussed, the Northern Strand Community Trail Extension will close a gap in a network that extends as far north as Lynn and has the potential to reach Boston to the south. The extension will connect with Somerville and Charlestown, where other projects in those cities promise to extend its reach into downtown Boston. A multi-use path with such connections would be likely to rapidly increase bicycle commuting mode share in the City and provide a new local resource for recreational walkers, joggers, and other users.

HSH completed a Complete Streets Prioritization Plan (CSPP) for the City of Everett as a part of the MassDOT Complete Streets Funding Program in September of 2016. The prioritization plan analyzed the City's existing pedestrian and bicycle facilities, and recommended projects that would help invite more people to use them, including the Northern Strand Community Trail Extension. Some of the tools used to develop this plan can be applied to the proposed trail extension, such as the Bicycle Level of Comfort Map (BLOC) and the Bicycle Latent Demand Map.

The BLOC methodology is based on analysis originally carried out by Professor Peter Furth of Northeastern University with minor adjustments. A set of criteria determine the level of traffic stress for every road segment, which correspond to the type or ability of bicyclist who would be willing to ride on that segment. **Figure 4** shows a City-wide map of Bicycle Level of Comfort, ranging from high to low. A low-stress cycling network is one where the majority of the population would feel comfortable riding; as such, we consider high and medium-high comfort routes to dictate the usable cycling network.

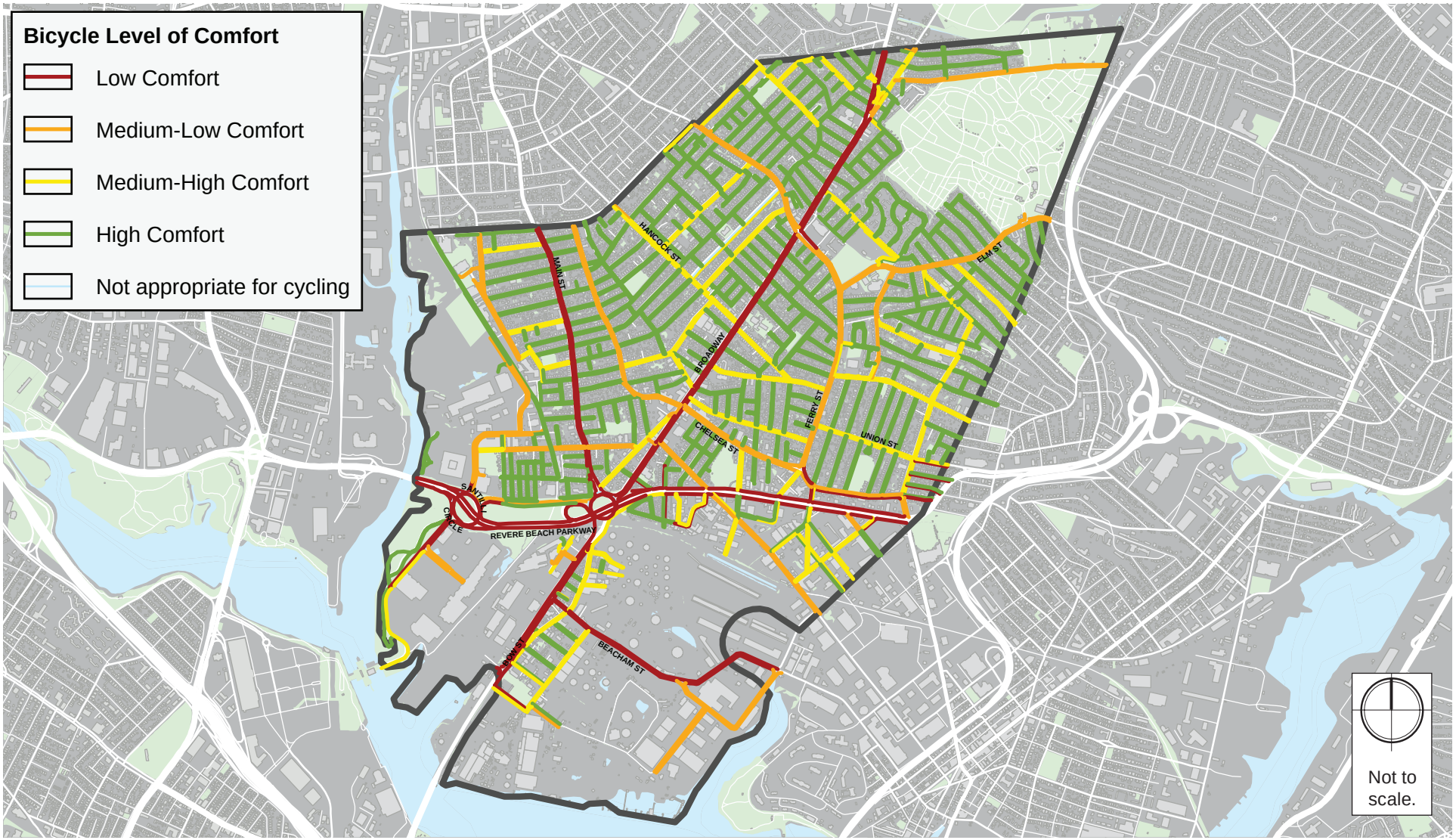
Based on this analysis, the construction of the Northern Strand Trail Extension would improve the current low level of comfort route which relies on Sweetser Circle and Lower Broadway (Route 99). This existing low level of comfort is most likely due to the large number of trucks and heavy volumes of traffic that uses Lower Broadway to access the industrial district or continue onto Boston making bicycling a mode only for the brave. Revere Beach Parkway, which bisects Broadway into Upper and Lower Broadway, provides an additional barrier to bicycles making a connection to Chelsea or to the Wellington MBTA Station on the Orange Line challenging and sometimes frightening.

HSH also used Metropolitan Area Planning Council's (MAPC's) Planning Active Streets Tool (PAST) to understand latent demand for pedestrians and bicyclists. The dataset draws on the Massachusetts Travel Survey to determine common origin-destination information and the 2010 U.S. Census to determine population characteristics like school age children. Each roadway segment was scored based on how well it provides network connections for pedestrians and bicyclists from residences to schools, shopping, transit, and open spaces, as shown in **Figure 5**.

This map identifies high bicycle demand along the route of the proposed trail connection, which implies that the area has a potential to increase walking and biking if conditions were made more comfortable and convenient. This analysis is supplemented by bicycle counts, which were measured as high as 75 cyclists per hour at rush hour on Lower Broadway.

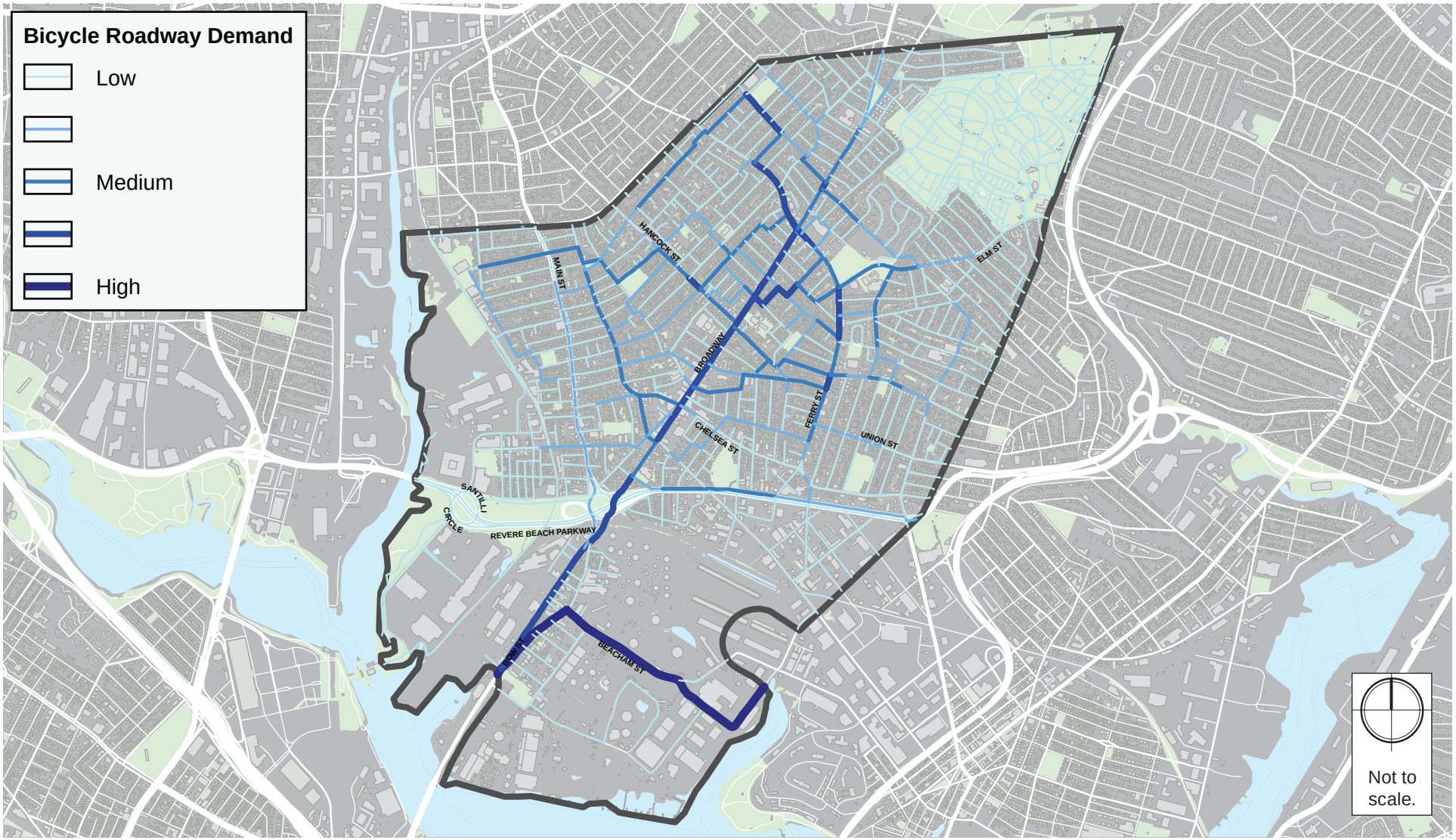
The proposed developments and improvements, in conjunction with the existing low level of comfort and high bicycle demand along the route, suggest that the construction of a safe, off-road trail would close the gap in the regional trail network, and encourage a mode shift towards biking and walking.

Figure 4. ***Everett Bicycle Level of Comfort Map***



Data Source: Howard Stein Hudson; MassGIS. All Calculations by Howard Stein Hudson Staff

Figure 5. ***Everett Latent Bicycle Roadway Demand***



Data Source: MAPC; MassGIS. All Calculations by MAPC

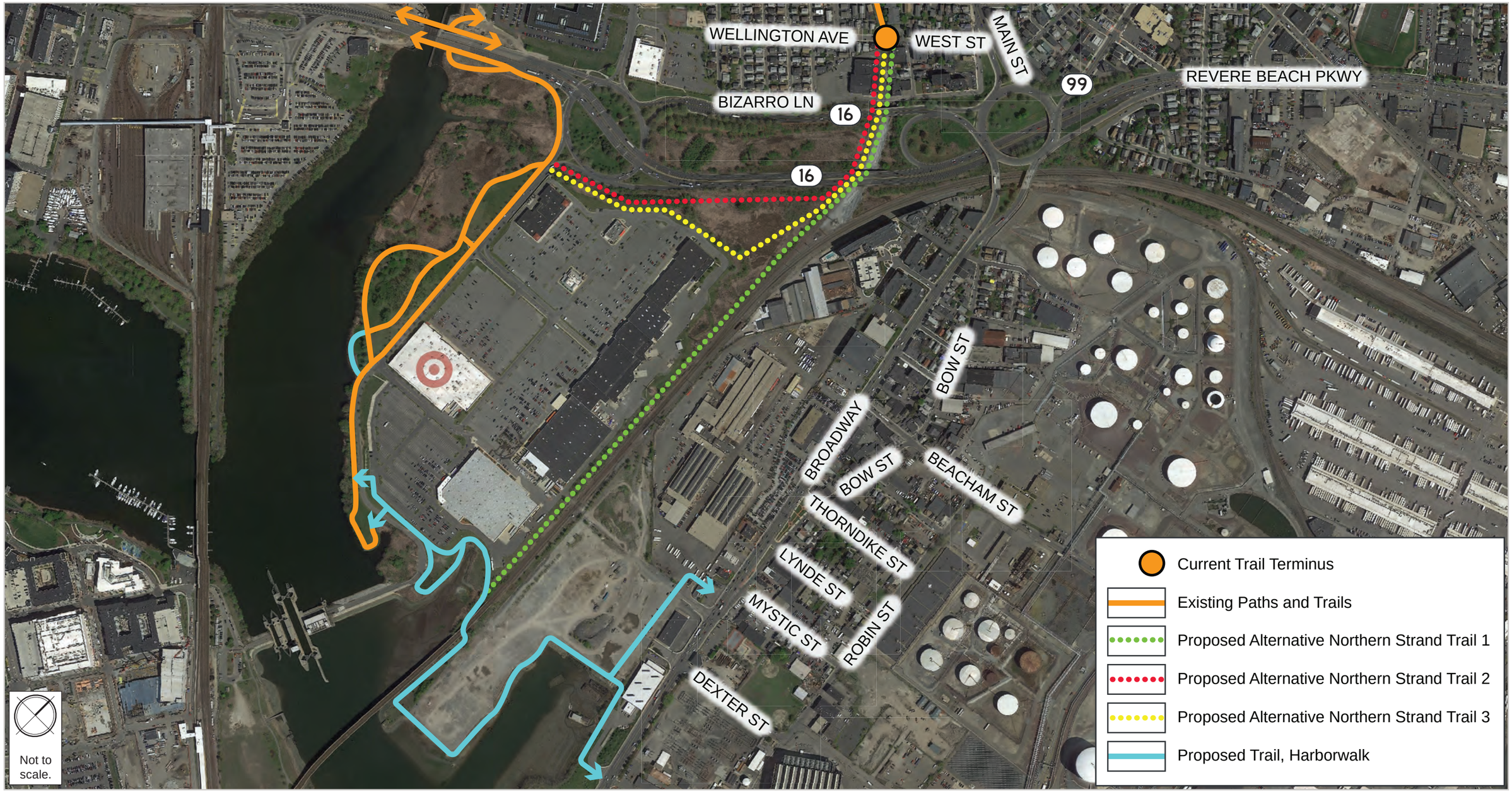
Design Approach

Connection Options to Existing Trails

HSH was asked to evaluate design options that connected to various existing and proposed paths and trails in the area. All alignments would begin at the existing trail terminus at West Street and Wellington Avenue and pass under the two bridges carrying Revere Beach Parkway over the MBTA tracks before diverging.

From this point, the first alignment makes a direct connection along the MBTA right of way (ROW) to the proposed Harborwalk to be built by Wynn Boston Harbor near the Mystic River (Alternative Alignment 1). The second alignment turns and runs parallel to Revere Beach Parkway until crossing Mystic View Road to meet the existing trail at the northeast corner of the Gateway Center (Alternative Alignment 2). A third option was introduced through conversations between the City of Everett, MassDOT, and DCR early in the process to better connect users to the DDR Gateway Center and avoid wetlands south of the Revere Beach Parkway. This alignment is very similar to Alternative Alignment 2, except that it follows the MBTA ROW for a short distance in the southwest direction before turning to run along the Gateway Center property, eventually meeting the existing trail at the same location as Alternative Alignment 2. These alignment alternatives can be seen in **Figure 6**.

Figure 6. ***Trail Connection Options to Existing Trails***



Preliminary Alternative Alginments identifying connection opportunities to existing paths and trails, as well as the proposed Wynn Harborwalk.

Stakeholder Group

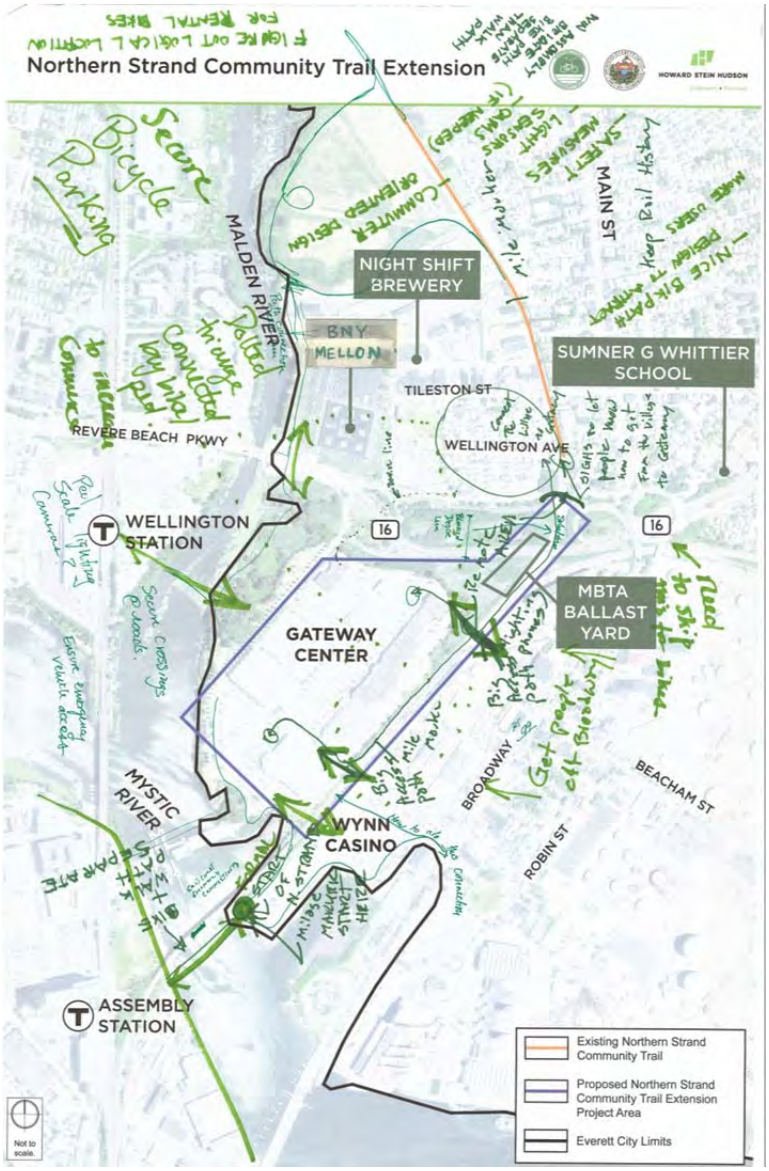
Recognizing that there are multiple key players in the study area, the City of Everett established a stakeholder group early in the process to guide the discussions of issues and opportunities. The group included representatives from the MBTA, MassDOT, DCR, Bike to the Sea, Wynn Boston Harbor, and DDR. This collaboration has had a valuable impact on the project team's ability to move forward toward final design with the support of these groups.

During the first stakeholder group meetings, DDR expressed concerns about the proximity of Alternative 3 to their property and these alternatives were discontinued. Additionally, Alternative 2 presented challenges due to impacts on wetlands south of the Revere Beach Parkway. Guidance from the public, discussed in the next section, helped bring about consensus around Alternative 1.

Public Input

A public information meeting was held on May 4, 2017 at the Connolly Center in Everett to present the community with an overview of the project. The group was given the chance to brainstorm alignment and design considerations in small breakout groups. They were also asked for a common origin /destination in their routine. Knowing that evening meeting turnout in the local neighborhood tends to be low, the team also set up a WikiMap, an online interactive tool, to gather detailed information from community members who could not attend public meetings.

Commentary was overwhelmingly supportive of the trail extension. Many meeting attendees had advocated on behalf of the network, and were in support of full connectivity, pushing for retention of all options to build a more robust trail network in Everett and along the Mystic River. Attendees' most common routes through the study area generally included origins from inner ring North Shore communities into Boston and Cambridge employment centers. It is likely that these individuals are looking for a safe but direct route to work.



The mapped results of one breakout group: meeting attendees were concerned about connectivity, safety, and amenities.

Conversations that took place during the breakout sessions reflected six key themes: importance of connectivity; importance of amenities; role that the trail can play in commuting patterns and reduction in vehicular congestion; lessons from the existing trail for how to design the extension; areas where funding and programmatic support from Wynn Boston Harbor could enhance the project; and opportunities for future connections and networks. Online, most commenters preferred the utility of a direct alignment, noting key connections nearby. Comments mostly related to pedestrian and cyclist concerns along key desire lines in the community.

Feedback from the public meeting and the WikiMap was in support of Alternatives 1 and 2 in the long term, but favored the more direct alignment along the MBTA right-of way of Alternative 1 in pursuit of both a utilitarian and recreational trail.

Resolved Approach

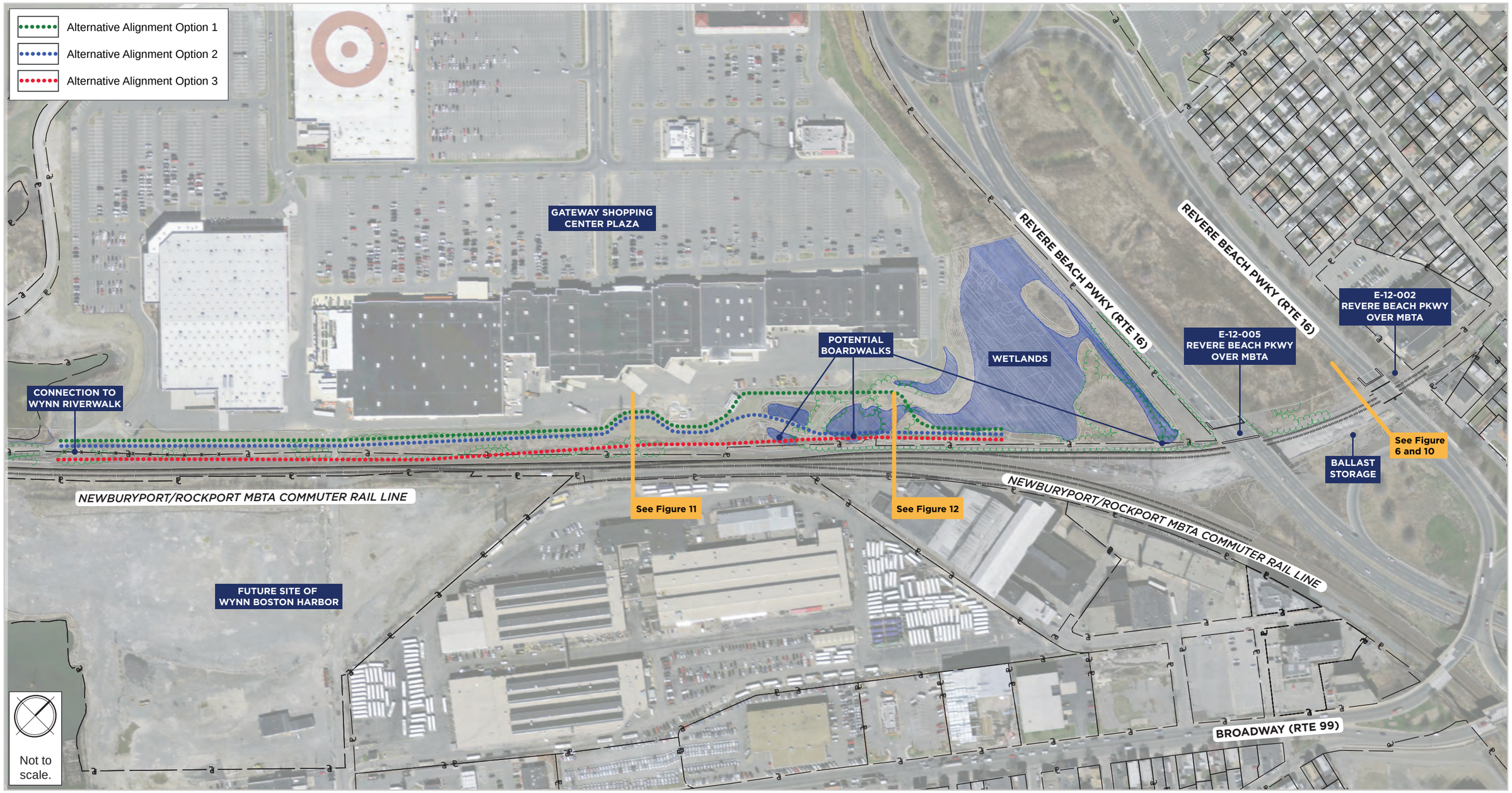
Under direction from the City, HSH continued development of Alternative Alignment 1, the alignment that makes a direct connection to the Wynn Riverwalk along the MBTA ROW in agreement with the community and stakeholder feedback. This proposed trail extension also presented fewer conflicts with wetlands in the area northeast of the Gateway Center, and avoided the unsafe bicycling and pedestrian environments associated with Santilli Circle.

A screenshot of the final WikiMap at closure, late August 2017.

With the general approach determined using Alternative 1 as a base, additional design factors had to be considered to make specific decisions along the proposed trail alignment. At first, it was thought that the best alignment would run along the MBTA tracks for the entire length at the bottom of the embankment that ascends to the DDR property. However, the next sections will discuss how the factors of MBTA ROW, environmental concerns, and abutting private properties contributed to decisions between various design alternatives along the trail.

Figure 7 shows all of the alignment options that were considered and evaluated according to the design factors before choosing two final preferred trails. The alignments differ in how they cross the wetlands, their interaction with the Gateway property, and the length that they run alongside the tracks at the bottom of the embankment.

Figure 7. ***Preliminary Alignment Options***



Alignment options following the general design approach of Proposed Altnerative 1.

Design Factors

Right of Way

MBTA RIGHT OF WAY

For much of its length, the trail extension will run along an existing MBTA Commuter Rail line. Per the MassDOT *Design and Development Guide* (PDDG) Exhibit 11-18, the design maintains a minimum separation of 25 feet with a fence for high volume/high speed operations (11 trains or more per day with a maximum speed over 45 mph). Additionally, the trail needs to navigate around or through an MBTA ROW that is currently used for storing stone ballast.

The ROW of the former tracks under the Route 16 and Route 99 Connector overpasses has been preserved for the storage and movement of ballast. As shown in **Figure 3**, the ROW line on the west side of the yard is approximately 15 feet from the edge of the existing tracks and falls in line with the westernmost piers of the overpasses. Although the separation required by PDDG decreases to 15 feet with a physical barrier or 11 feet in constrained areas for rail operations of medium volume/medium speed, the slight encroachment presents a significant challenge when attempting to maintain the required separation. The proximity of the tracks to the alignment options can be seen in **Figure 8 and 9.**

MBTA ballast storage under the Route 16 and Route Connector overpasses.

First and second span of Bridge E-12-002, looking South.

The MBTA faces a growing shortage of available land across its vast holdings for maintenance operations such as the stone ballast operations in proximity of this trail's intended route. Neighborhoods and advocates across the region are pushing the MBTA to move bus yards, reduce diesel emissions and noise pollution, and let go of rail right of ways in favor of multi-use trail uses.

At the northernmost bridge carrying Revere Beach Parkway, Bridge E-12-002, one solution (see Option A in **Figure 8**) could shift the alignment of the existing tracks

eastward to the former alignment of these historic tracks by creating a physical buffer between the existing stone ballast storage operations and the new trail. The City of Everett is still investigating if this former railway alignment still belongs to the MBTA or was transferred to the DCR when Route 16 was constructed.

However, to accommodate the space and operations needs of the MBTA, a second approach to the bridge crossings was developed. An alternate solution to crossing below the northernmost bridge (see Option B in **Figure 9**) may place the trail between the westernmost bridge pier and the bridge abutment to the west of the existing tracks on a grade separated ROW, entirely on DCR property. Review of the existing plans indicates that a culvert may be required in order to navigate through this span due to a shallow abutment footing.

Figure 8. ***Alignment Option A: Trail Under the Western Span of Route 99 Connector***

Option for the trail to pass through the second span of the bridge, shifting the existing tracks.

Figure 9. ***Alignment Option B: Trail Between Wesntermost Bridge Pier and Abutment***

Option for the trail to pass through the second span of the bridge, requiring earthwork and a potential culvert.

A similar set of issues has arisen at the southernmost bridge carrying Revere Beach Parkway, Bridge E-12-005. However, visual inspection of this area seems to indicate that fill currently placed between the pier and the abutment could be partially excavated to allow adequate clearance for the trail. A retaining wall will likely be required.

First and second span of Bridge E-12-005, looking

HNTB coordinated with the MBTA regarding potential track modifications to the Commuter Rail ballast loading facility along the Saugus Brach, as required by the proposed trail extension as shown in **Figure 8** and **Figure 9.** At a meeting, three alternative track alignments were presented.

Alternative 1 (**Figure 10**) would shift both tracks to the east, create a ballast storage space between both tracks, and would not alter the location of the ballast retaining wall. In this concept, the MBTA would lose storage space unless the land to the east of the existing retaining wall was purchased for use by the MBTA.

Alternative 2 (**Figure 11**) would shift both tracks as far east as possible, without affecting the location of the ballast retaining wall. This alternative maintains a shorter track center dimension and creates a wide gap (greater than 30ft) between the community path and Track 1. Without land acquisition to the east of the retaining wall, the MBTA would lose storage space. Ballast stone would be stored directly adjacent to the community path in this alternative.

Alternative 3 (**Figure 12**) would shift both tracks as far east as possible. This is the most extreme alternative as it requires land acquisition and relocating of the existing ballast retaining wall. It is conceivable that with this alternative the MTBA would not lose any ballast storage space.

It is the MBTA's preference that all community trail alternatives requiring track modifications be avoided. Track construction would severely impact MBTA maintenance operations. The MBTA suggests using Concept B as identified and illustrated in this report. This concept does not require any track modifications and safely maintains clearance from existing tracks and the ballast yard.

Figure 10. ***MBTA Ballast Yard Alternative 1***

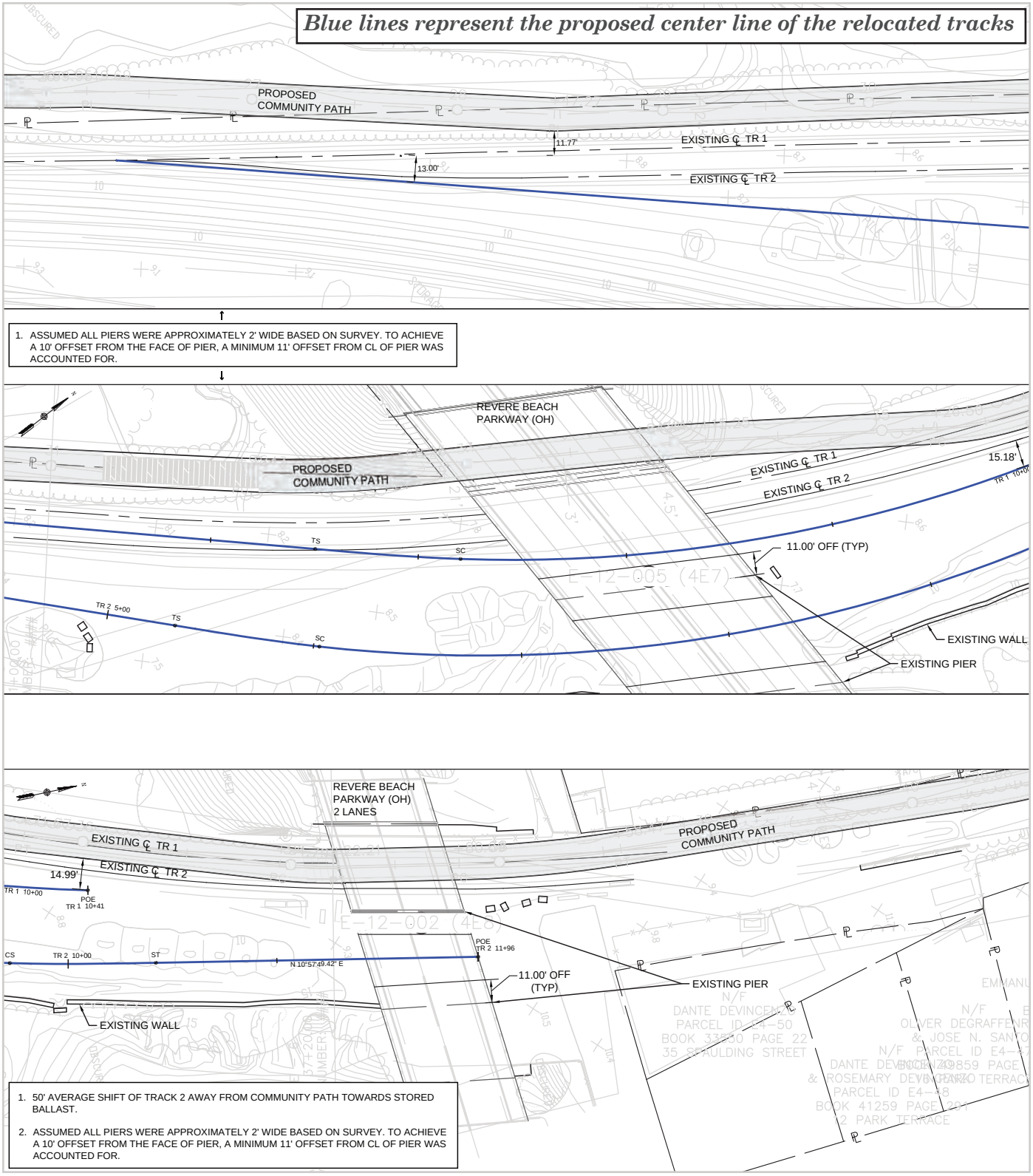


Figure 11. ***MBTA Ballast Yard Alternative 2***

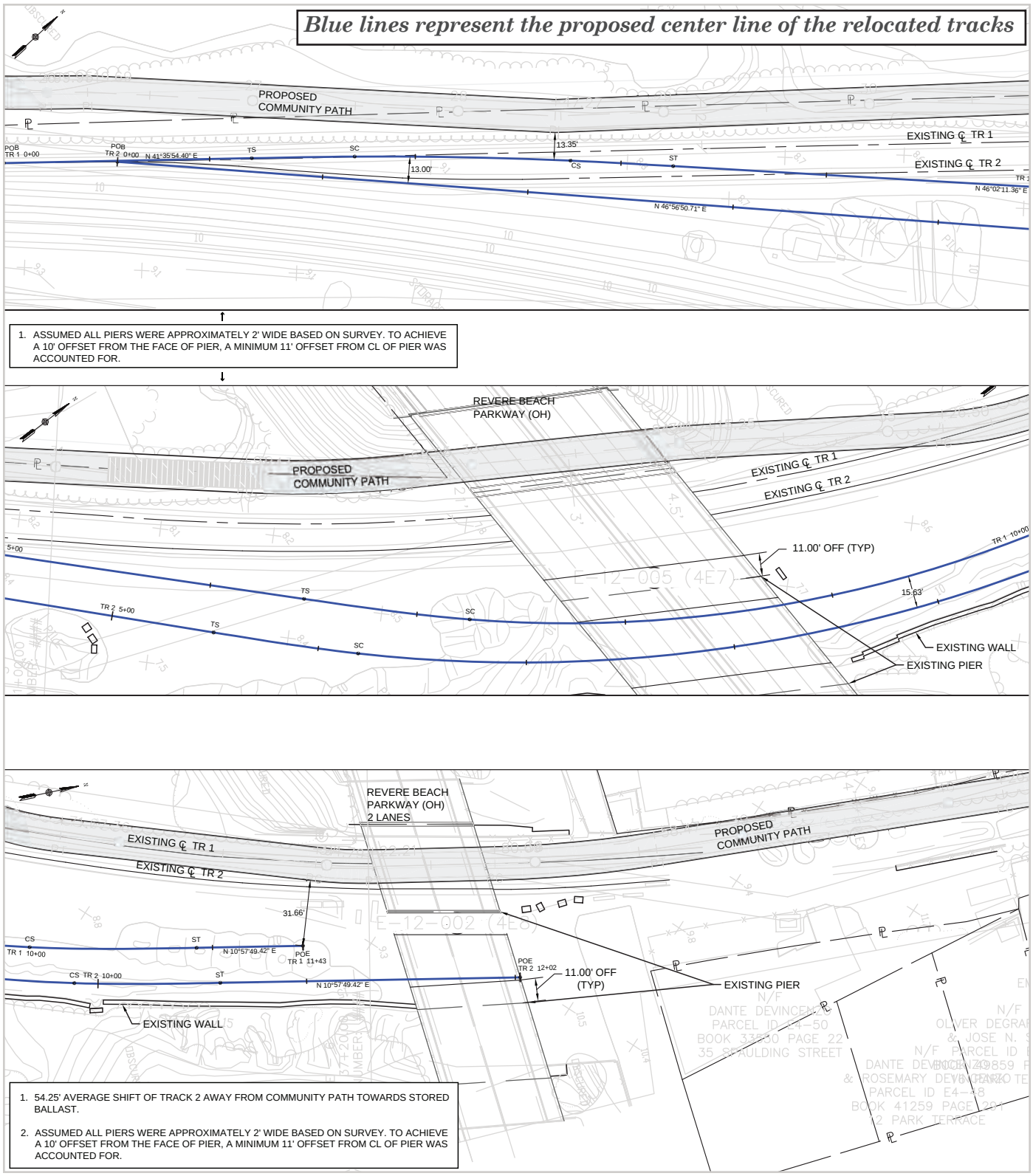
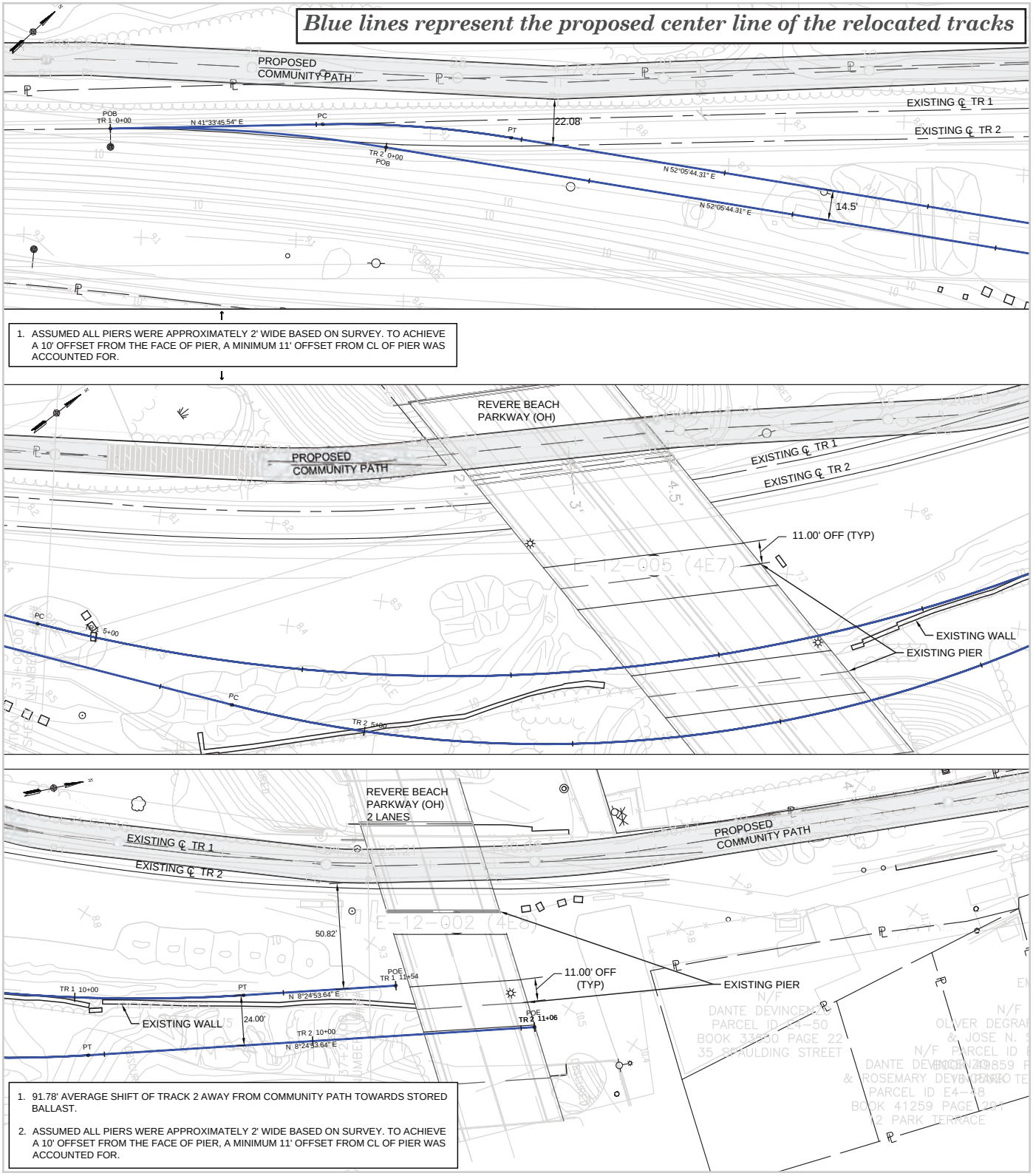


Figure 12. ***MBTA Ballast Yard Alternative 3***



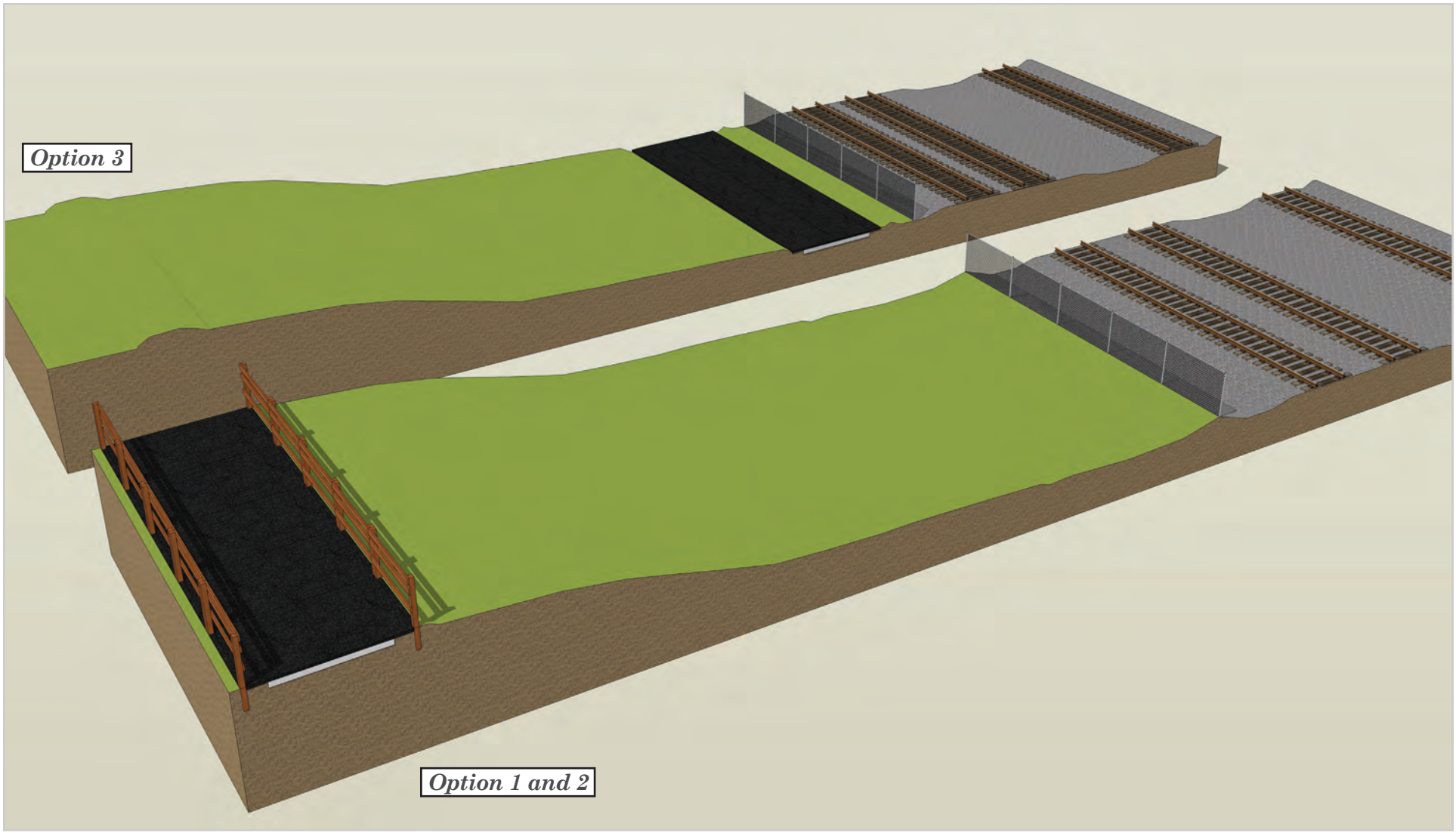
PRIVATE RIGHT OF WAY

Over half a mile of the three-quarter mile proposed trail extension extends over land owned by DDR, who own the Gateway Center; the trail will also connect to land owned and being developed by Wynn Resorts for Wynn Boston Harbor. Information is still being procured regarding prior agreements between the City of Everett and DDR, and HSH will continue to work with all parties. A major goal of the project will continue to be relating private properties to the trail in a way that benefits trail users and stakeholders.

Private parcel near West/Wellington Streets.

Stakeholders have been engaged in the design process through meetings held on April 11, 2017 and September 21, 2017, with future meetings planned for early winter and beyond. The two alignment options presented at the meeting in September interacted with the DDR property in different ways to spark a discussion on how much exposure the owners wanted with the Gateway Center. See **Figure 13** for a Sketch-Up rendering used to compare the designs in section view.

Figure 13. ***Gateway Center Alignment Options***



The top option shows the trail at the bottom of the embankment, adjacent to the MBTA Commuter Rail.
The bottom option shows the trail on the existing shelf adjacent to the rear parking lot of the Gateway Center.

Through conversations with key stakeholders including DDR, a major item of concern for trail alignment is the interaction of the trail to the shopping center. At the public meeting in May, members of the community suggested that a direct trail connection could be a desirous route for both employees and patrons. The existing route to the shopping center requires pedestrians and cyclists to cross the Revere Beach Parkway, which is high stress for both modes, so many community residents are excited for a new, safer connection to neighborhood amenities. For this reason DDR expressed interest in Alignment Options 1 and 2, as shown on the bottom of **Figure 13**. This option gives the trail a utiliarian purpose in addition to a recreational one. An ideal design reaches both types of users through balanced solutions.

The City of Everett is still in the process of requesting information from Wynn Resorts concerning the exact location of the connection between their proposed riverwalk and the Northern Strand Community Trail Extension, but it is anticipated to connect at the southern end of the DCR property.

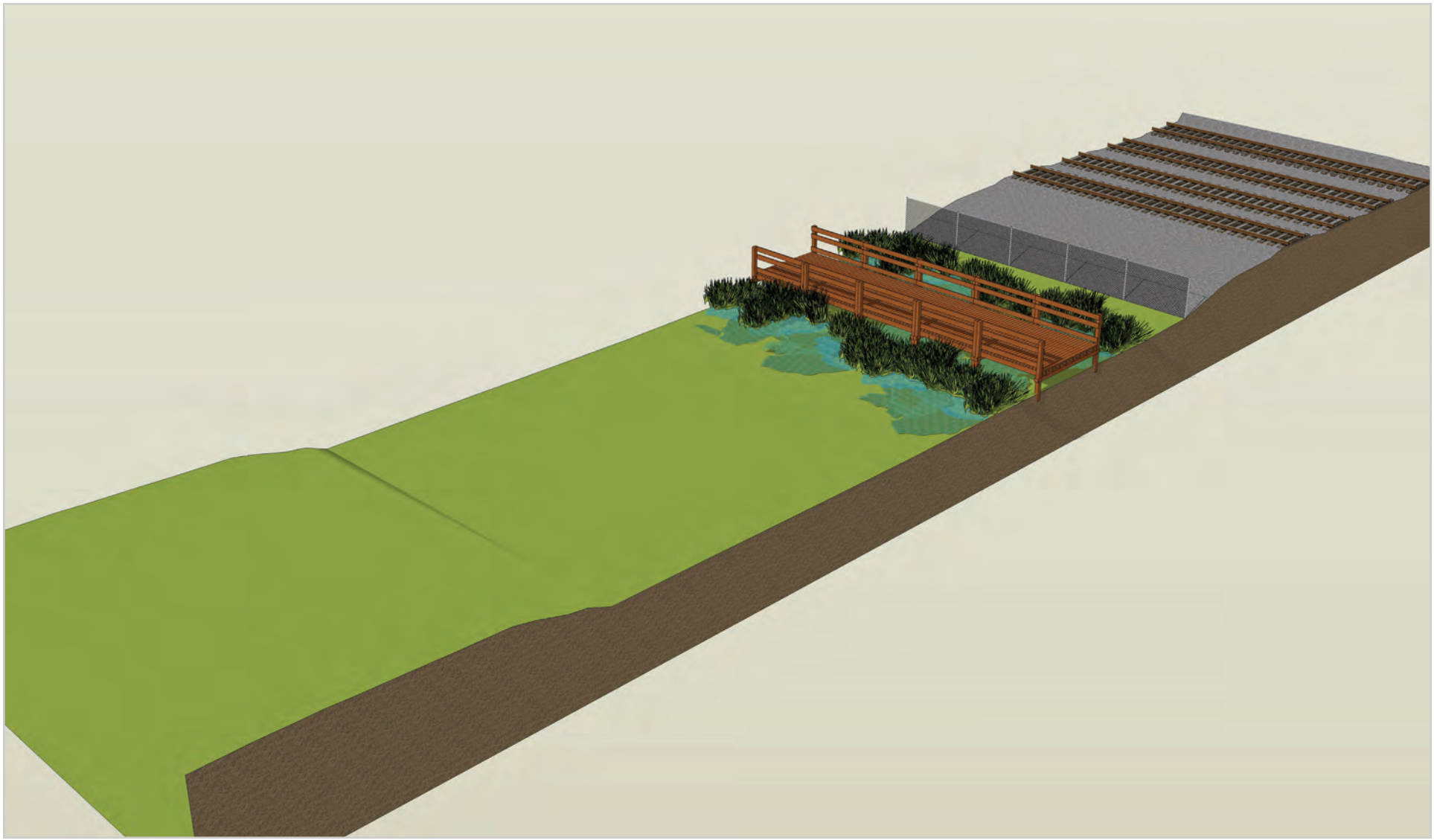
Wetland Impacts

This project raises environmental concerns in regards to the wetlands within the project area. Most of the wetlands are located to the west side of the trail in between the Revere Beach Parkway overpass and the DCR property. With guidance from DCR, impacts to the wetland were a major consideration when comparing design alternatives.

Quequechan River Rail Trail in Fall River, MA. Source: http://contecompany.com/wetland-boardwalk-construction-in-a-fragile-eco-system

HSH attempted to limit the length of trail that would extend through wetland areas to preserve the sensitive habitat and limit costs. However, the design will implement timber boardwalk to enhance the natural beauty of the area where the wetlands must be crossed, and limit impacts where the project does encroach on wetlands. The use of boardwalk is less disturbing to the wetlands than filling them, and is cheaper and more aesthetically pleasing than using retaining walls to avoid impacts (See **Figure 14**).

Figure 14. ***Boardwalk Design Through Wetlands***



The rendering shows what the boardwalk may look like through the wetlands that are adjacent to the rail.

Proposed Design

Evaluation of design factors – such as MBTA ROW, wetlands impacts, and private ownership concerns – led to the two preferred alignments as shown in **Figure 15** and **Figure 16**. HSH would like to present both of the proposed design alternatives and cost estimates to the City of Everett to assess. As design continues to progress and additional survey data is collected, the trail location will be selected with room for minor adjustment as interaction of the trail to the ROW, wetlands, and bridges are evaluted.

The alignment options differ from each other in three main ways:

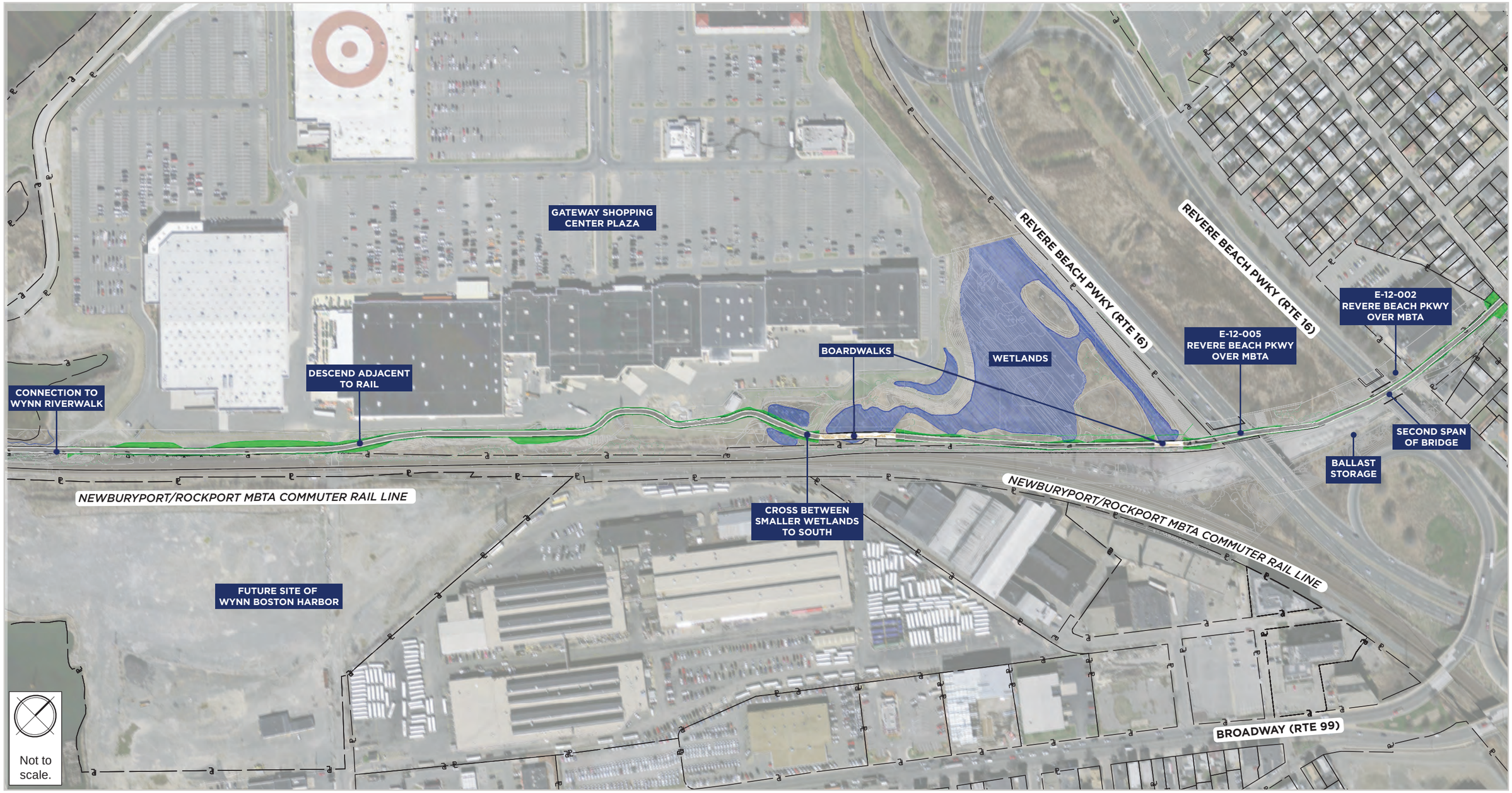
A. How the trail passes under the northernmost bridge carrying Revere Beach Parkway over the MBTA tracks, Bridge E-12-002;

B. The location that the trail crosses the wetlands to climb the embankment to DDR property; and

C. How long the trail remains on the shelf adjacent to the DDR property.

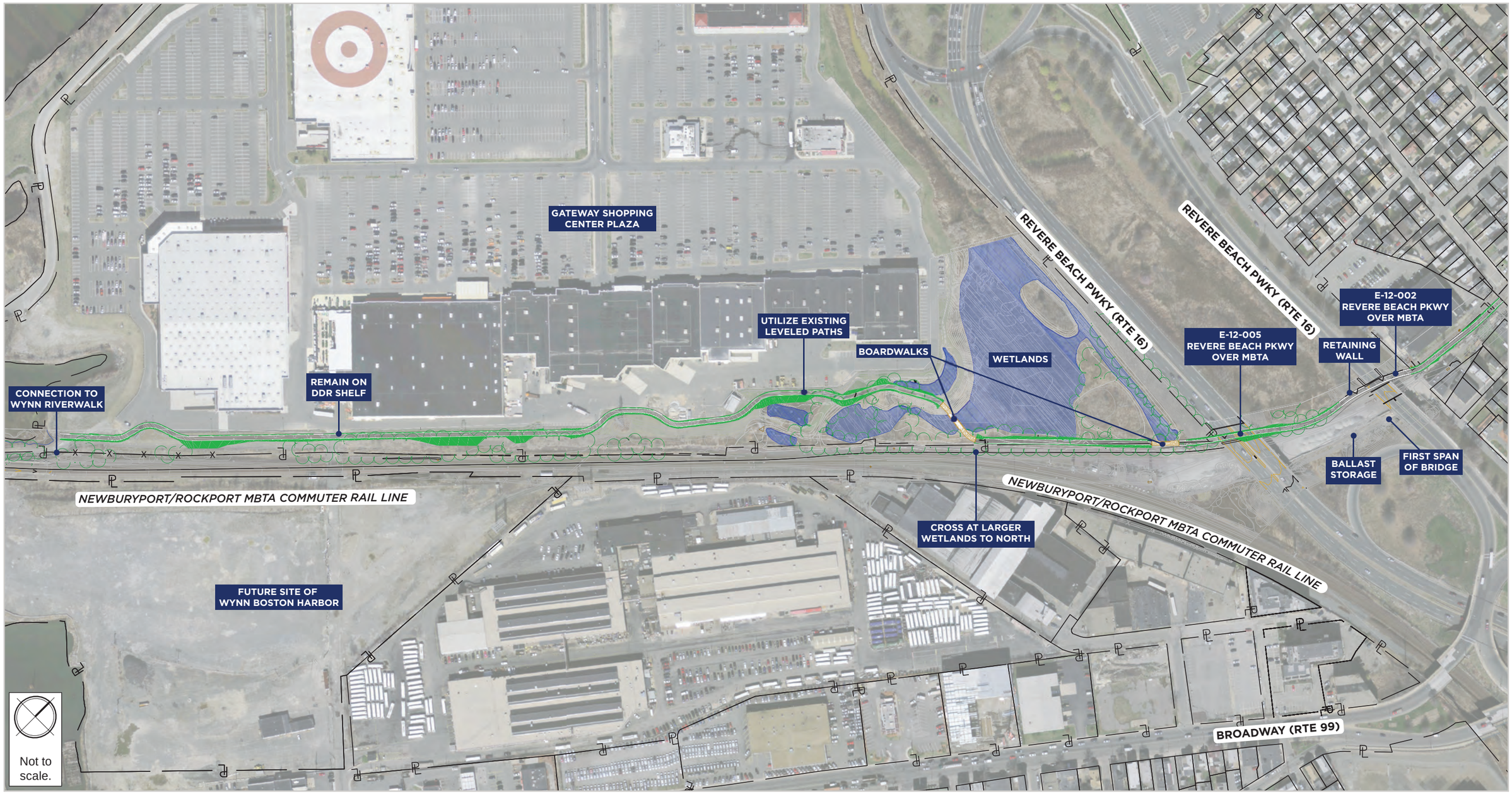
For comparison purposes, only two alignment options are presented, in which the first is generally less complicated from a design standpoint. However, any combination of the possible alignment variations for these three areas is possible for final design.

Figure 15. *Northern Strand Community Trail Extension Proposed Alignment 1*



Proposed Alignment 1 crosses between the smaller wetlands to reach DDR property and descends adjacent to the rail near the southern end.

Figure 16. ***Northern Strand Community Trail Extension Proposed Alignment 2***



Proposed Alignment 2 crosses the larger wetlands to the north of the smaller wetlands and remains on th existing leveled paths and shelf on DDR property.

Both alignments were developed based on the design factors, geometric requirements determined by a trail user design speed of 18 mph, and ADA compliance along the entire trail, as shown in **Table 1** below. There are certain parts of the design that are consistent between the two alignments.

Table 1. Geometric Design Requirements

Geometric Feature	Design Requirement
Maximum Cross Slope and Superelevation	2% maximum
Minimum Horizontal Curvature	60 feet
Minimum Length of Crest Vertical Curve	100 feet
Maximum Grade	4.5%*

** = Tolerance for Construction ± 0.5%*

At this point, the resolution is to build a retaining wall to allow the trail to pass through the westernmost span of the southernmost bridge. Visual inspection and review of the existing bridge plans support this.

Both alignments also include a 75 foot boardwalk just south of the bridges due to a wetland that cannot be avoided. As the trail continues southward, both alignments shift closer to the rail centerline according to minimum requirements of constrained areas near medium volume/medium speed rail operations. This is in an effort to avoid wetlands and the need for more boardwalk sections.

Both trails have the same starting point and terminate at the Mystic River, where a connection to the Wynn development will be made.

The following report sections will focus on the three ways that the alignments differ rather than the aforementioned parallels. Design tradeoffs will be discussed for each option.

Alignment Option 1

A. SECOND SPAN OF BRIDGE

This alignment proposes that the trail pass through the second span, requiring realignment of the MBTA tracks into the third span. The spans of the bridge fall on DCR, MassDOT, and MBTA property, so this design may require a land swap to be coordinated between the public agencies. This process could be cumbersome and delay construction of the trail by several years, as predicted by City officials. Overlooking this administrative impediment, this would be the most feasible option as it does not require substantial earthwork or construction of any structures.

Cleared paths between the wetlands on DDR property.

B. CROSS BETWEEN SMALLER WETLANDS TO SOUTH

As shown in **Figure 8**, this alignment proposes traveling south over a large wetland area before cutting in between two smaller wetlands on the climb to the DDR property. There are several pre-established grassy, cleared, and leveled paths on this portion of DDR property; this alignment also takes advantage of the existing topography, thereby reducing the amount of cut and fill as well as impacts to wetlands. The ascension to the shelf is not drastic and should be graded easily within ADA limits.

C. DESCENT ADJACENT TO RAILROAD AT SOUTHERN END

City Planner Jay Monty walks adjacent to the railroad where the path may be located.

This option shows the trail remaining on the parking lot shelf for about a quarter of a mile before grading back down to the bottom of the embankment near the existing gated access point to the trail. At this point, the trail would follow the MBTA commuter rail line for about 800 feet with an approximate 40 foot separation to the centerline of rail.

This option adds diversity to the community trail as it takes advantage of the existing landscaping along the rail bed and provides a different environment than the parking lot. It also may appease DDR ownership, who have been cautious about the relation of the trail to their property. Finally, several utilities and transformers that would present design challenges can be avoided.

The bottom of the embankment has adequate width to hold the trail and the only grading required would be to accommodate the minor descent down. Drawbacks to this design option are the intensified need for security and lighting. Trail users may feel more vulnerable as they are hidden from the parking lot at the bottom of the slope and are adjacent only to an active commuter rail line.

Alignment Option 2

A. FIRST SPAN OF BRIDGE

This alignment proposes that the trail passes through the first span, likely requiring the construction of a culvert or retaining wall. As shown in **Figure 9**, the span is only about 15 feet wide and the abutment footing lies only about 5 feet below grade. These conditions tend to be appropriate for a 100 foot culvert, which can be expensive and present security concerns.

B. CROSS AT THE LARGER WETLAND TO NORTH

As shown in **Figure 9**, this alignment proposes crossing over a narrow portion of the large wetland area rather than continuing south through it before splitting the two smaller wetlands. This alignment option utilizes more of the pre-established grass paths and also decreases the length of boardwalk. However, the preliminary survey shows that the drop-off from the parking lot shelf is rather extreme in this area, requiring extra fill to reduce the slope to meet ADA requirements.

C. REMAIN ON DDR SHELF FOR SOUTHERN END

In addition to climbing onto the shelf adjacent to the DDR property earlier, this alignment proposes remaining on the shelf for the entire length of the parking lot. The land behind the guardrail is level and wide enough to accommodate a trail with minimal navigating and grading. The trail would run along the back of a parking lot for close to a half mile in a fairly straight line, providing less scenic diversity than descending to the rail ROW. In addition, a utility box may require relocation to avoid impacts to loading operations.

The existing shelf adjacent to the parking lot at the southern end of the Gateway Center.

The existing lighting along the entire length could be adapted to light the proposed trail as well, utilizing existing conduits and poles, reducing costs. The opportunity to maximize lighting and elevation of the trail minimize security and safety concerns.

Other Design Considerations

DRAINAGE

Low points are identified by evaluating the proposed profile as shown on **Figure 17 through Figure 20** for Alignment 1, and **Figure 21 through Figure 24** for Alignment 2. Due to the existing topography and the presence of wetlands to the west of the proposed trail, the trail will be sloped in that direction rather than with a center crown. Drainage swales will be designed for a ten year storm.

HSH does not see a need for a closed drainage system at this point. Drainage will be channelized to low points and allowed to infiltrate after detention. The feasibility and appropriateness of porous pavement is also being considered.

Figure 17. ***Northern Strand Community Trail Extension Proposed Profile 1***

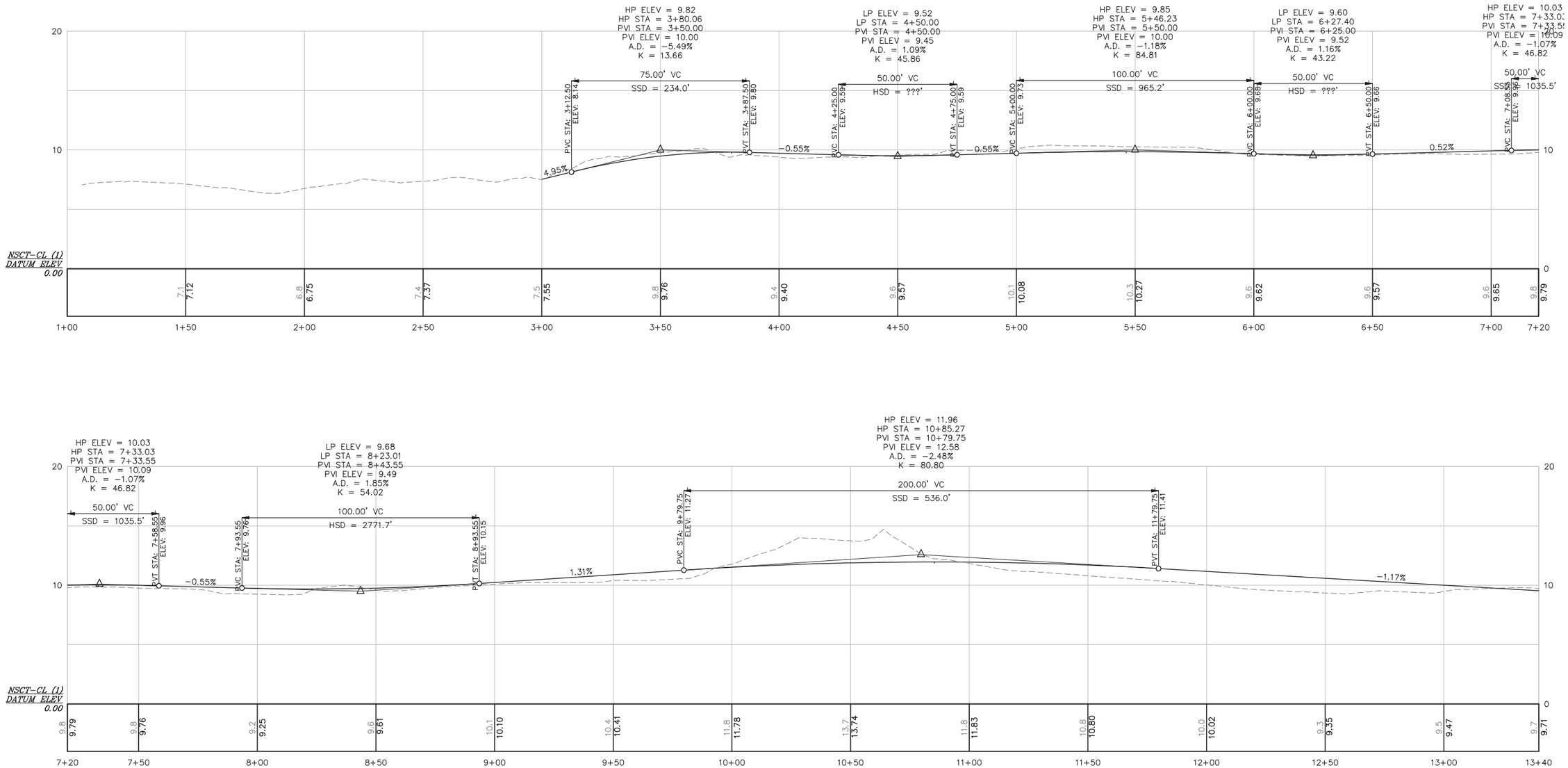


Figure 18. ***Northern Strand Community Trail Extension Proposed Profile 1***

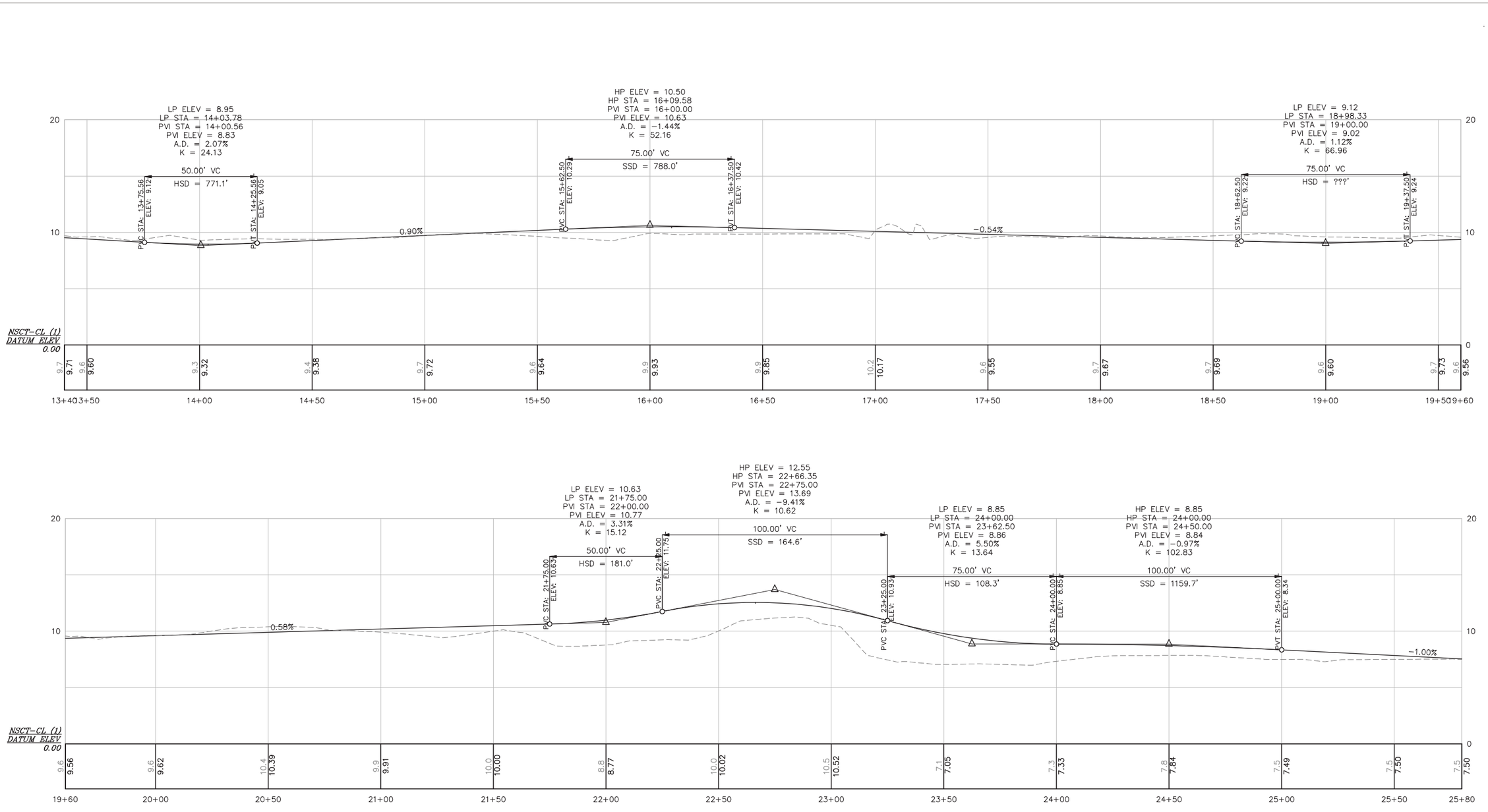


Figure 19. ***Northern Strand Community Trail Extension Proposed Profile 1***

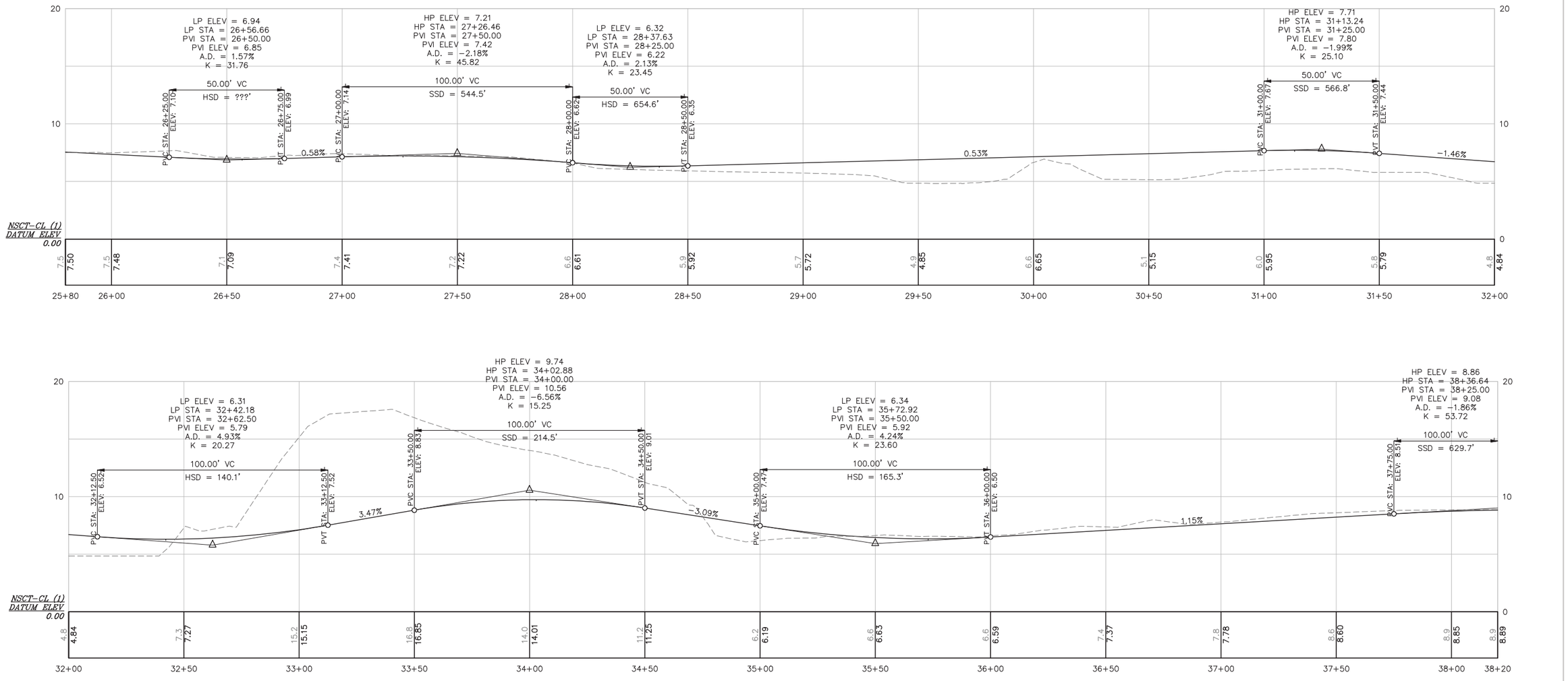


Figure 20. ***Northern Strand Community Trail Extension Proposed Profile 1***

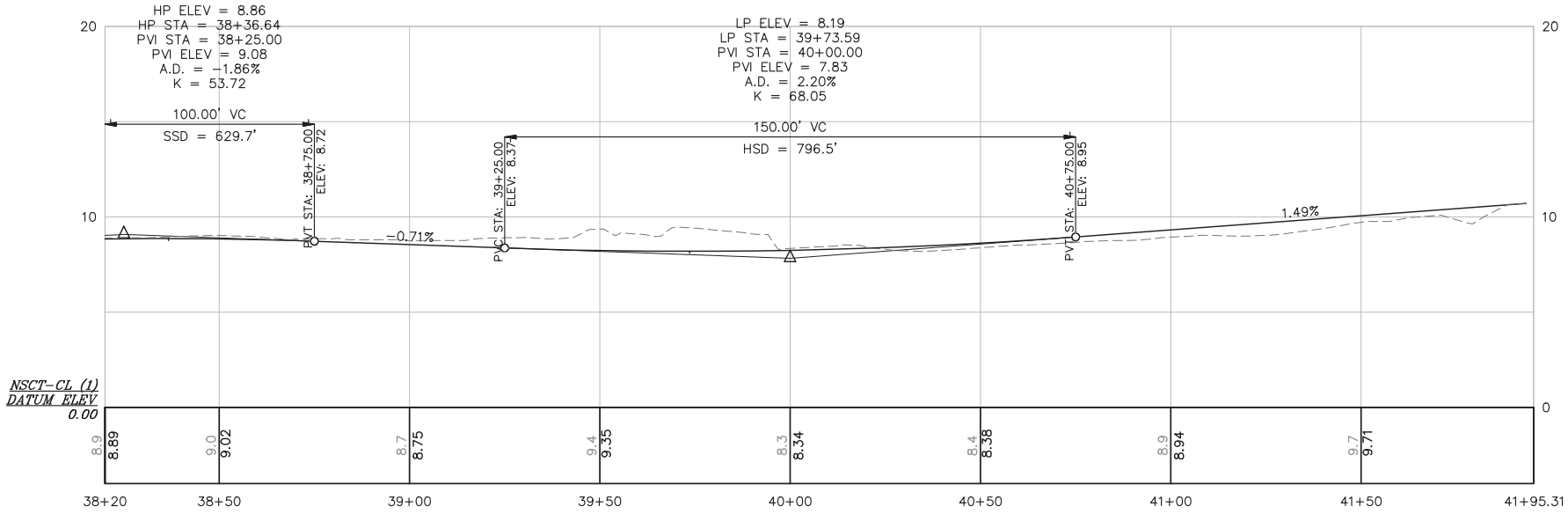


Figure 21. ***Northern Strand Community Trail Extension Proposed Profile 2***

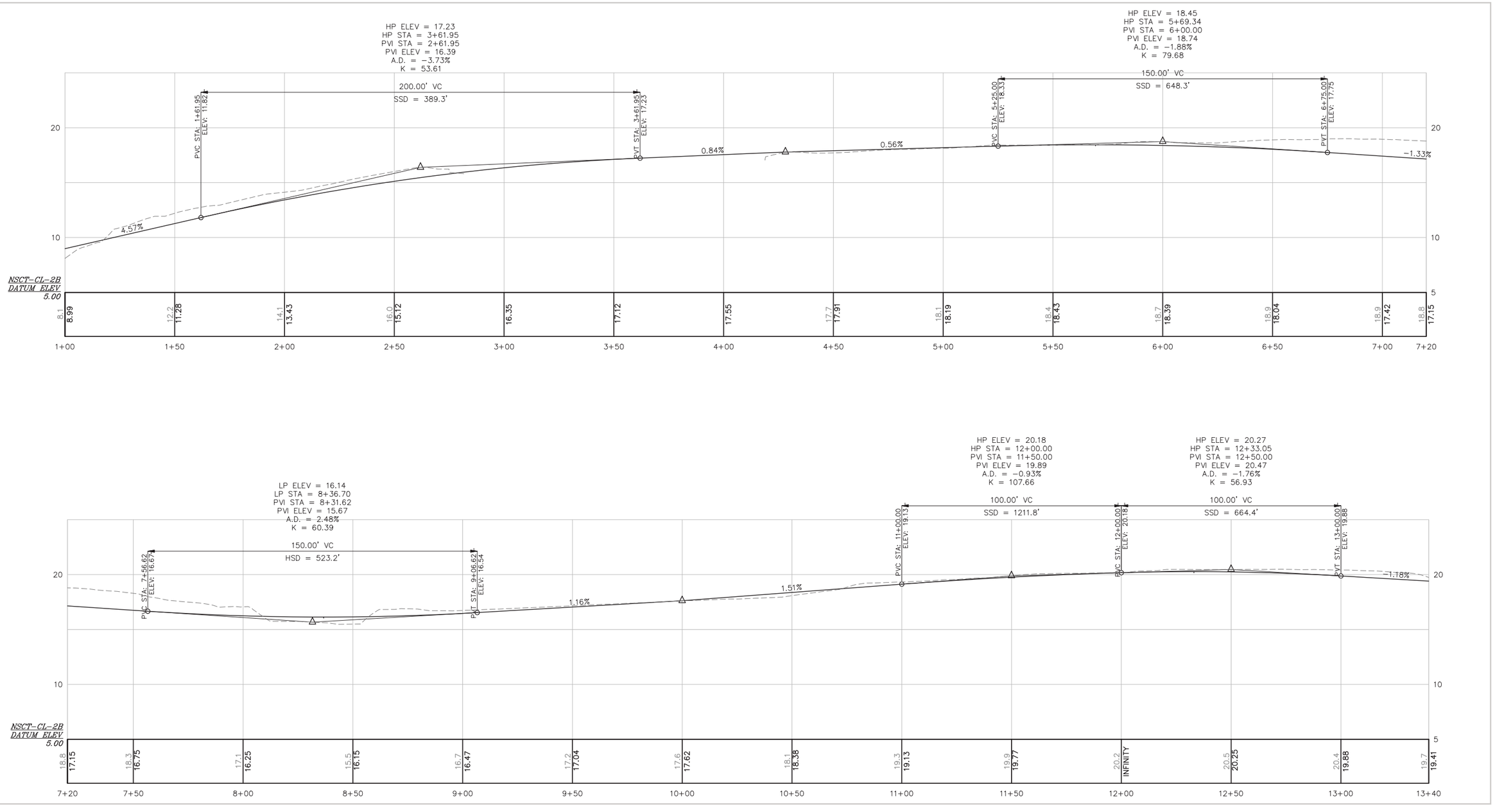


Figure 22. ***Northern Strand Community Trail Extension Proposed Profile 2***

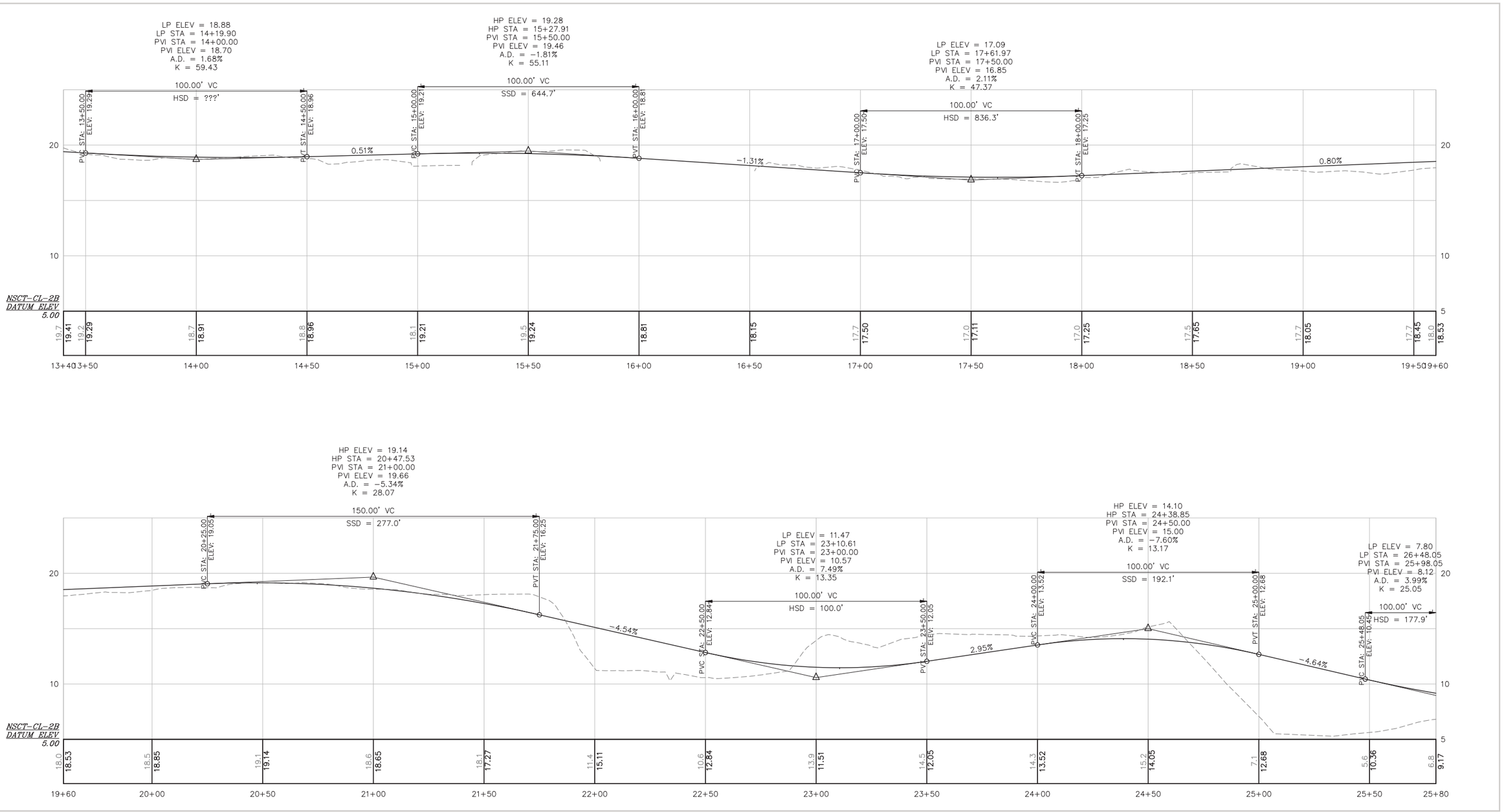


Figure 23. ***Northern Strand Community Trail Extension Proposed Profile 2***

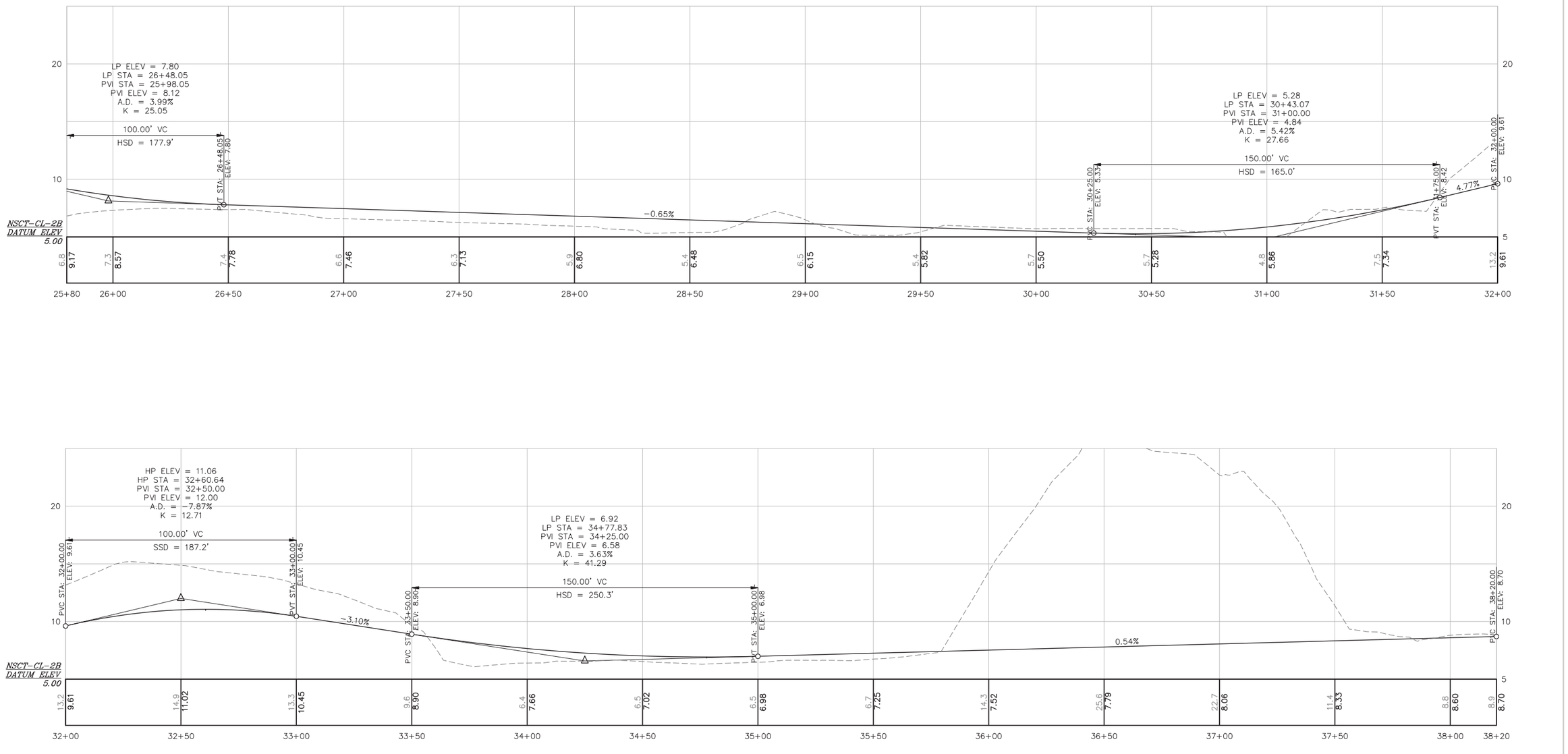
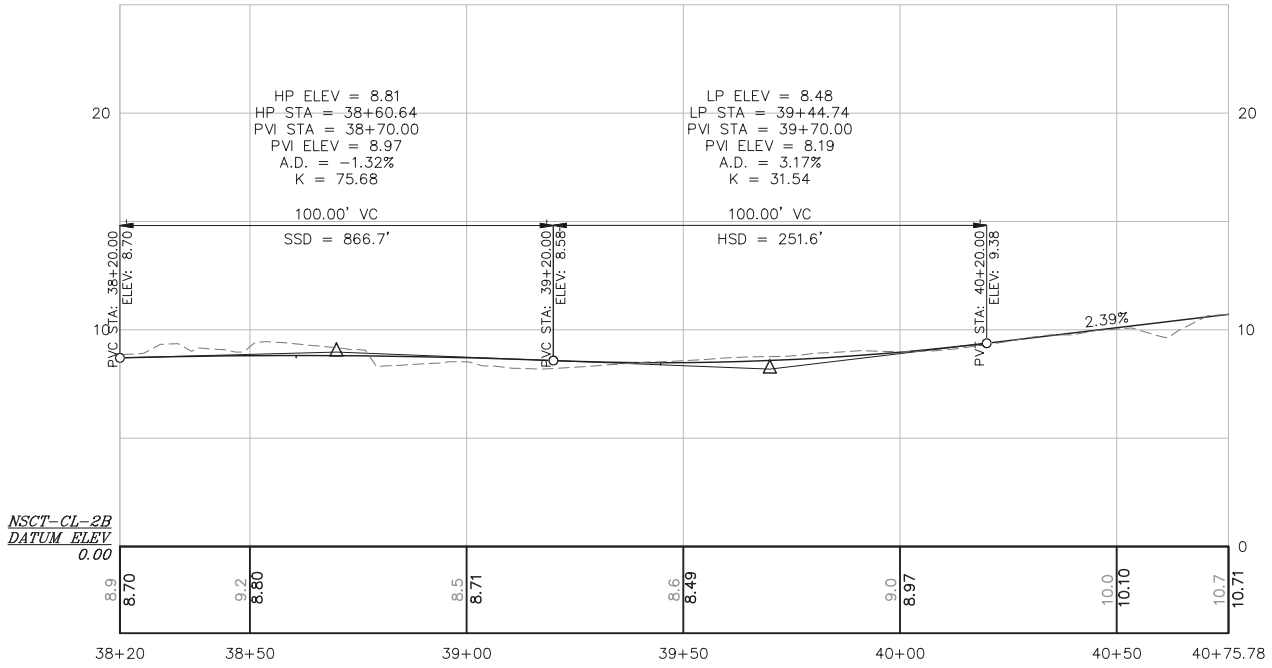
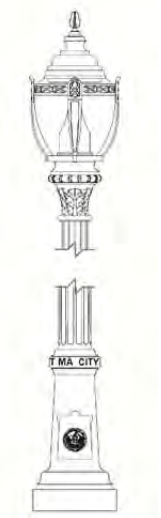


Figure 24. ***Northern Strand Community Trail Extension Proposed Profile 2***



LIGHTING AND SECURITY

The existing portion of the Northern Strand Community Trail will have lighting and security cameras installed later this year or early next year. Additionally, lighting is proposed as part of the Wynn Harborwalk, which is being constructed adjacent to Wynn Boston Harbor. Therefore, at the request of the City and for coninuity between segments, the trail extension will incorporate the same type of light fixtures and surveillance cameras to match. The City-specified light poles are 14'-0" Cambridge Steel Posts with the New Frontier (VC3) Luminare.



Riverwalk Site Light Fixture – City of Everett standard.

The proposed alignments allow the trail to benefit from the existing lighting in the parking lot behind the Gateway Center to varying extents. Conversations with DDR will continue to explore the possibility of installing cameras and lighting immediately upon construction of the Trail.

The potential use of a solar component to the lighting is being investigated.

LANDSCAPING AND AMENITIES

HSH is working with landscaping subconsultant, Halvorson Design Partnership, Inc. (Halvorson), to determine where and what type of landscaping to plant along the length of the Trail. The landscaping may be used in different combinations to block or screen areas where noise and sight lines are not desirable, such as along the tracks, and to enhance the trail aesthetically, creating an inviting entrance to the new section of trail. Balancing the proposed landscaping with the surroundings is critical to the look and feel of the trail, as well as to the vibrancy of the landscaping added.

Additionally, amenities such as benches, bike racks, and kiosks will be considered at locations where there may be opportunities to enjoy and take in the surroundings. Kiosks can be used to provide wayfinding, information about the trail, and information about points of interest in the area that can be readily accessed from the trail by bike or by foot. Bike racks are particularly important where the trail meets the DDR property, as it is expected that employees and patrons may use the trail to access the Gateway Center by bicycle.

Cost Estimates

Based on the conditions of the Chapter 91 License agreement issued to the DDRC/Gateway Shopping Mall in 2001 by the Department of Environmental Protection, the City anticipates that DDRC will fund final design and construction on the portion of the path that follows the eastern side of their property. The total estimated construction cost for the trail extension is 2.5 million dollars. Calculations were completed using MassDOT Standard Items and District 1 Weighted Bid Prices; the full calculation book can be found in **Appendix A**.

Due to previous agreements made between the City of Everett and the owners of the DDR property, it is expected that DDR will fund the construction of the parts of the trail that lie on their property. The property lines on **Figure 3** demonstrate which parts of the trail belong to whom. Contingent on final verification of property lines, roughly 60 to 80% of the proposed trail's length falls on DDR property, with the remaining belonging to the City of Everett. Using these proportions, costs are broken down by owner responsible for funding and by category, as shown in **Table 2**. Using these proportions, estimate costs are broken down by owner responsible for funding and by category, as shown in **Table 2**. The construction costs are expected to be fairly comparable between alternatives, so only one cost estimate is provided in this conceptual report.

Table 2. Preliminary Cost Estimate by Funding

Construction Category	Cost by Owner		Total
	City of Everett	DDR	
Trail	-	-	
Earthwork	$12,800	$51,200	$64,000
Pavement, Other	$83,453	$334,452	$112,000
Retaining Wall	$92,400	$19,600	$112,000
Boardwalk	$275,000	$0	$275,000
Culvert	$0	$0	$0
Lighting	$179,737	$718,947	$898,683
Security	$0	$0	$0
Intersections, Driveways, and Ramps	$9,202	$36,808	$46,410
Landscaping and Amenities	$265,606	$1,536	$267,142
Construction Management	$83,453	$51,200	$2,081,140
TOTAL *Inc. 20% contingency*	**$1,134,000**	**$1,396,000**	**$2,530,000**

Next Steps

Final Design

Both alignments meet all of the goals set forth by the design team and the City of Everett, while accommodating surrounding stakeholders, the MBTA, and environmental needs. The ability to bring the Trail closer to the Gateway Center for any length connects the community to important businesses in Everett, and serves users who need to commute there but do not have a vehicle. It also provides diversity to the trail by allowing it to meander and present different views, rather than remaining in a straight line at the bottom of the embankment along the tracks.

Additional survey and public input, consultation with structural engineers, and continued negotiations with stakeholders will bring resolution for which alignment to develop into final design. HSH will be the lead engineer with the following subconsultants: Green International Affiliates, Inc. (Green) for survey; Gill Engineering (GEI) for structural design of boardwalk, a culvert, and retaining walls; Halvorson Design Partnership, Inc. (Halvorson) for landscaping; and Buia Engineering for lighting. The team will prepare all required contract documents to bring this project to bid, as well as continuing public involvement throughout the process.

ADDITIONAL PUBLIC OUTREACH

The next stakeholder and public meetings are planned for the end of the year or the beginning of January. All parties will be given the opportunity to comment on the two alignments presented in this report.

HSH will continue to facilitate coordination between stakeholders to reach agreements that will allow the design and construction of this trail to continue.

ADDITIONAL SURVEY

Green will be performing additional survey to flag the wetlands and acquire more detailed information underneath the bridges. During the development of conceptual plans, HSH relied on GIS data, record bridge plans, and an aerial survey to make decisions.

If the additional survey reveals inaccuracies in the preliminary data collection, the designs will need to be re-evaluated. This is especially true for the wetlands, where boardwalk limits and grading practices are heavily dependent on the exact location of these environmental areas. For the bridges, the survey is required for the structural engineers at GEI to determine the best way to continue the trail through the overpasses.

ENVIRONMENTAL PERMITTING AND ROW

Due to the proximity of environmental resource areas, the City of Everett may be subject to filing permits with various environmental agencies: Notice of Intent (NOI), MassWildlife's Natural Heritage & Endangered Species Program (NHESP), Division of Fisheries and Wildlife (DFW), and National Pollutant Discharge Elimination System (NPDES). HSH will prepare required documentation for this project.

ROW plans will also need to be prepared as a part of final design. The proposed trail may have temporary and permanent impacts on abutting properties which need to be defined and the dimensions specified in ROW plans. The earliest grading exercise performed during development of the conceptual plans shows that there will be temporary easements required along the MBTA property to the east of the proposed trail for one of the alignments. Additionally, it is possible that the property to the northwest of the northernmost bridge will be impacted in a permanent way in order to maneuver the trail through the first span. As we navigate through the ROW process, there will be careful coordination with the MBTA, DDR, MassDOT, DCR, and private land owners.

Appendix A – Cost Estimates

THE CITY OF EVERETT

SHARED USE PATH CONSTRUCTION PROJECT
IN THE CITY OF

EVERETT

MIDDLESEX COUNTY

NORTHERN STRAND COMMUNITY TRAIL EXTENSION

OFFICE CALCULATION BOOK # TBD

HSH PROJECT NUMBER 2016012

PRELIMINARY DESIGN - JANUARY 2018
HOWARD STEIN HUDSON

11 Beacon Street Suite 1010, Boston, MA 02108
Project No. 2016012
HOWARD STEIN HUDSON 1/16/2018

PRELIMINARY ESTIMATE

Item No.	Description	Units	Total Quantity	Average Bid Price	Estimated Cost
100.	SCHEDULE OF OPERATIONS - FIXED PRICE $_____	LS	1	$191,563.60	$191,563.60
102.3	CONTROL OF INVASIVE PLANTS EXISTING ON SITE	HR	16	$250.00	$4,000.00
102.4	ARBORIST	HR	12	$150.00	$1,800.00
102.51	INDIVIDUAL TREE PROTECTION	30	30	$250.00	$7,500.00
103.	TREE REMOVED - DIAMETER UNDER 24 INCHES	EA	5	$900.00	$4,500.00
105.	STUMP REMOVED	EA	20	$500.00	$10,000.00
120.1	UNCLASSIFIED EXCAVATION	CY	1600	$40.00	$64,000.00
141.1	TEST PIT FOR EXPLORATION	CY	45	$90.00	$4,050.00
142.	CLASS B TRENCH EXCAVATION	CY	370	$35.00	$12,950.00
144.	CLASS B ROCK EXCAVATION	CY	10	$150.00	$1,500.00
151.	GRAVEL BORROW	CY	1440	$35.00	$50,400.00
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	CY	490	$50.00	$24,500.00
170.	FINE GRADING AND COMPACTING	SY	5190	$4.00	$20,760.00
381.	SERVICE BOX	EA	1	$300.00	$300.00
431.	HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE	SY	0	$50.00	$-
443.	WATER FOR ROADWAY DUST CONTROL	MGL	1	$55.00	$55.00
450.90	CONTRACTOR QUALITY CONTROL	TON	1190	$3.45	$4,105.50
451.	HMA FOR PATCHING	TON	20	$200.00	$4,000.00
452.	ASPHALT EMULSION FOR TACK COAT	GAL	520	$7.55	$3,926.00
453.	HMA JOINT SEALANT	FT	8080	$1.00	$8,080.00
454.5	LATEX MODIFICATION OF HMA	TON	1190	$12.00	$14,280.00
455.22	SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)	TON	510	$115.00	$58,650.00
455.31	SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5)	TON	660	$115.00	$75,900.00
455.42	SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5)	TON	0	$120.00	$-
482.3	SAWCUTTING ASPHALT PAVEMENT	FT	160	$4.00	$640.00
506.	GRANITE CURB TYPE VB - STRAIGHT	FT	0	$40.00	$-
506.1	GRANITE CURB TYPE VB - CURVED	FT	0	$45.00	$-
509.	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - STRAIGHT	FT	0	$45.00	$-
509.1	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS -	FT	0	$50.00	$-
514.	GRANITE CURB INLET - STRAIGHT	EA	0	$339.00	$-
515.	GRANITE CURB INLET - CURVED	EA	0	$440.00	$-
516.	GRANITE CURB CORNER TYPE A	EA	0	$275.00	$-
665.3	WOOD RAIL FENCE	FT	2300	$30.00	$69,000.00
670.	FENCE REMOVED AND RESET	FT	2370	$27.00	$63,990.00
693	MODULAR RETAINING WALL	SF	2500	$35.00	$87,500.00
698.2	GEOTEXTILE FABRIC FOR SUBSURFACE DRAINAGE	SY	1490	$6.00	$8,940.00
701.2	CEMENT CONCRETE WHEELCHAIR RAMP	SY	0	$100.00	$-
704.12	STONE DUST PAVEMENT	TON	50	$30.00	$1,500.00
707.1	PARK BENCH	EA	4	$2,300.00	$9,200.00
707.9	BICYCLE RACK	EA	4	$1,500.00	$6,000.00
710.3	BOUND - LETTERED GRANITE	EA	2	$500.00	$1,000.00
740.	ENGINEERS FIELD OFFICE AND EQUIPMENT (TYPE A)	MO	14	$2,750.00	$38,500.00
748.	MOBILIZATION	LS	1	$61,318.19	$61,318.19
751.	LOAM BORROW	CY	240	$50.00	$12,000.00
765.	SEEDING	SY	1620	$1.80	$2,916.00
804.2	2 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC (UL)	FT	320	$35.00	$11,200.00
804.3	3 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)	FT	4200	$40.00	$168,000.00
811.22	ELECTRIC HANDHOLE - SD2.022	EA	78	$1,300.00	$101,069.02
812.09	LIGHT STANDARD FOUNDATION PRECAST	EA	78	$1,500.00	$116,618.10
813.40	WIRE TYPE 8 NO. 10 DIRECT BURIAL	FT	1280	$1.20	$1,536.00
813.43	WIRE TYPE 8 NO. 6 DIRECT BURIAL	FT	16200	$2.00	$32,400.00
813.521	WIRE TYPE 10 #6 GROUNDING AND BONDING	FT	4290	$1.50	$6,435.00
813.72	GROUND ROD 10 FT. LONG	EA	163	$200.00	$32,698.16
820.111	PATH LIGHTING FIXTURE "A"	EA	78	$5,000.00	$388,727.00

11 Beacon Street Suite 1010, Boston, MA 02108
Project No. 2016012
HOWARD STEIN HUDSON 1/16/2018

PRELIMINARY ESTIMATE

Item No.	Description	Units	Total Quantity	Average Bid Price	Estimated Cost
823.61	HIGHWAY LIGHTING LOAD CENTER NO.1	LS	1	$40,000.00	$40,000.00
832.	WARNING-REGULATORY AND ROUTE MARKER - ALUM. PANEL (TYPE A)	SF	10	$10.00	$100.00
847.1	SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY - STEEL	EA	12	$137.50	$1,650.00
850.41	ROADWAY FLAGGER	HR	24	$75.00	$1,800.00
852.	SAFETY SIGNING FOR TRAFFIC MANAGEMENT	SF	8	$15.00	$120.00
859.	REFLECTORIZED DRUM	DAY	160	$0.25	$40.00
866.106	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FT	0	$1.00	$-
866.112	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	FT	70	$2.60	$182.00
867.106	6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	FT	40	$1.00	$40.00
867.112	12 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	FT	0	$3.00	$-
874.	STREET NAME SIGN	EA	2	$105.00	$210.00
874.7	MISCELLANEOUS SIGNS REMOVED AND STACKED	EA	1	$50.00	$50.00
995.1	TIMBER BOARDWALK	LS	1	$275,000.00	$275,000.00
				SUBTOTAL	$2,107,200
999.001	SPECIAL DUTY POLICE OFFICER CONTROL FOR CONSTRUCTION OPERATIONS	HR	40	$50.00	$2,000
				CONTINGENCY 20%	$421,440
				TOTAL	$2,530,639
				TOTAL ESTIMATE SAY	$2,540,000

11 Beacon Street Suite 1010, Boston, MA 02108 | % Path Everett: 20%
Project No. 2016012 | % Path DDR: 80%
HOWARD STEIN HUDSON | 1/16/2018

PRELIMINARY ESTIMATE BY OWNER

Item No.	Description	Category	Total Cost	Everett Cost	DDR Cost
100.	SCHEDULE OF OPERATIONS - FIXED PRICE $189,222	Construction Management	$191,563.60	$191,563.60	$0.00
102.3	CONTROL OF INVASIVE PLANTS EXISTING ON SITE	Landscaping	$4,000.00	$800.00	$3,200.00
102.4	ARBORIST	Landscaping	$1,800.00	$360.00	$1,440.00
102.51	INDIVIDUAL TREE PROTECTION	Landscaping	$7,500.00	$1,500.00	$6,000.00
103.	TREE REMOVED - DIAMETER UNDER 24 INCHES	Landscaping	$4,500.00	$900.00	$3,600.00
105.	STUMP REMOVED	Landscaping	$10,000.00	$2,000.00	$8,000.00
120.1	UNCLASSIFIED EXCAVATION	Earthwork	$64,000.00	$12,800.00	$51,200.00
141.1	TEST PIT FOR EXPLORATION	Trail	$4,050.00	$810.00	$3,240.00
142.	CLASS B TRENCH EXCAVATION	Trail	$12,950.00	$2,590.00	$10,360.00
144.	CLASS B ROCK EXCAVATION	Trail	$1,500.00	$300.00	$1,200.00
151.	GRAVEL BORROW	Trail	$50,400.00	$10,080.00	$40,320.00
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	Retaining Wall	$24,500.00	$4,900.00	$19,600.00
170.	FINE GRADING AND COMPACTING	Trail	$20,760.00	$4,152.00	$16,608.00
381.	SERVICE BOX		$300.00	$60.00	$240.00
431.	HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE	Trail	$0.00	$0.00	$-
443.	WATER FOR ROADWAY DUST CONTROL	Trail	$55.00	$11.00	$44.00
450.90	CONTRACTOR QUALITY CONTROL	Trail	$4,105.50	$821.10	$3,284.40
451.	HMA FOR PATCHING	Trail	$4,000.00	$800.00	$3,200.00
452.	ASPHALT EMULSION FOR TACK COAT	Trail	$3,926.00	$785.20	$3,140.80
453.	HMA JOINT SEALANT	Trail	$8,080.00	$1,616.00	$6,464.00
454.5	LATEX MODIFICATION OF HMA	Trail	$14,280.00	$2,856.00	$11,424.00
455.22	SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)	Trail	$58,650.00	$11,730.00	$46,920.00
455.31	SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5)	Trail	$75,900.00	$15,180.00	$60,720.00
455.42	SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5)	Trail	$0.00	$0.00	$-
482.3	SAWCUTTING ASPHALT PAVEMENT	Trail	$640.00	$0.00	$640.00
506.	GRANITE CURB TYPE VB - STRAIGHT	Intersections	$0.00	$0.00	$0.00
506.1	GRANITE CURB TYPE VB - CURVED	Intersections	$0.00	$0.00	$-
509.	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - STRAIGHT	Intersections	$0.00	$0.00	$-
509.1	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS -	Intersections	$0.00	$0.00	$-
514.	GRANITE CURB INLET - STRAIGHT	Intersections	$0.00	$0.00	$-
515.	GRANITE CURB INLET - CURVED	Intersections	$0.00	$0.00	$-
516.	GRANITE CURB CORNER TYPE A	Intersections	$0.00	$0.00	$-
665.3	WOOD RAIL FENCE	Trail	$69,000.00	$13,800.00	$55,200.00
670.	FENCE REMOVED AND RESET	Trail	$63,990.00	$12,798.00	$51,192.00
693	MODULAR RETAINING WALL	Retaining Wall	$87,500.00	$87,500.00	$-
698.2	GEOTEXTILE FABRIC FOR SUBSURFACE DRAINAGE	Trail	$8,940.00	$1,788.00	$7,152.00
701.2	CEMENT CONCRETE WHEELCHAIR RAMP	Intersections	$0.00	$0.00	$-
704.12	STONE DUST PAVEMENT	Trail	$1,500.00	$300.00	$1,200.00
707.1	PARK BENCH	Landscaping	$9,200.00	$1,840.00	$7,360.00
707.9	BICYCLE RACK	Landscaping	$6,000.00	$1,200.00	$4,800.00
710.3	BOUND - LETTERED GRANITE	Landscaping	$1,000.00	$200.00	$800.00
740.	ENGINEERS FIELD OFFICE AND EQUIPMENT (TYPE A)	onstruction Manageme	$38,500.00	$38,500.00	$-
748.	MOBILIZATION	onstruction Manageme	$61,318.19	$61,318.19	$-
751.	LOAM BORROW	Trail	$12,000.00	$2,400.00	$9,600.00
765.	SEEDING	Trail	$2,916.00	$583.20	$2,332.80
804.2	2 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC (UL)	Lighting	$11,200.00	$2,240.00	$8,960.00
804.3	3 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)	Lighting	$168,000.00	$33,600.00	$134,400.00
811.22	ELECTRIC HANDHOLE - SD2.022	Lighting	$101,069.02	$20,213.80	$80,855.22
812.09	LIGHT STANDARD FOUNDATION PRECAST	Lighting	$116,618.10	$23,323.62	$93,294.48
813.40	WIRE TYPE 8 NO. 10 DIRECT BURIAL	Lighting	$1,536.00	$307.20	$1,228.80
813.43	WIRE TYPE 8 NO. 6 DIRECT BURIAL	Lighting	$32,400.00	$6,480.00	$25,920.00
813.521	WIRE TYPE 10 #6 GROUNDING AND BONDING	Lighting	$6,435.00	$1,287.00	$5,148.00
813.72	GROUND ROD 10 FT. LONG	Lighting	$32,698.16	$6,539.63	$26,158.53
820.111	PATH LIGHTING FIXTURE "A"	Lighting	$388,727.00	$77,745.40	$310,981.60
823.61	HIGHWAY LIGHTING LOAD CENTER NO.1	Lighting	$40,000.00	$8,000.00	$32,000.00

11 Beacon Street Suite 1010, Boston, MA 02108
Project No. 2016012
HOWARD STEIN HUDSON

% Path Everett: 20%
% Path DDR: 80%
1/16/2018

PRELIMINARY ESTIMATE BY OWNER

Item No.	Description	Category	Total Cost	Everett Cost	DDR Cost
832.	WARNING-REGULATORY AND ROUTE MARKER - ALUM. PANEL (TYPE A)	Landscaping	$100.00	$20.00	$80.00
847.1	SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY - STEEL	Landscaping	$1,650.00	$330.00	$1,320.00
850.41	ROADWAY FLAGGER	Construction Management	$1,800.00	$360.00	$1,440.00
852.	SAFETY SIGNING FOR TRAFFIC MANAGEMENT	Construction Management	$120.00	$24.00	$96.00
859.	REFLECTORIZED DRUM	Trail	$40.00	$8.00	$32.00
866.106	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	Trail	$0.00	$0.00	$-
866.112	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	Trail	$182.00	$36.40	$145.60
867.106	6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	Trail	$40.00	$8.00	$32.00
867.112	12 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	Trail	$0.00	$0.00	$-
874.	STREET NAME SIGN	Landscaping	$210.00	$42.00	$168.00
874.7	MISCELLANEOUS SIGNS REMOVED AND STACKED	Landscaping	$50.00	$10.00	$40.00
995.1	TIMBER BOARDWALK	Boardwalk	$275,000.00	$275,000.00	$0.00
			SUBTOTALS	$944,417	$1,162,782
			PROJECT TOTAL	$2,107,200	

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:		**DATE:**		**PROJECT:**	NSCT EXTENSION

AREA SUMMARY

*Areas obtained using AutoCAD. See attached Area Summary Sheet

	AREA* (SF)	AREA (SY)
Mill & Overlay	0	0
Full Depth	46,647	5,183
Full Depth Less than 4'	0	0
Cem Conc Sidewalks	0	0
HMA at Back of Driveway	0	0
Wheelchair Ramps	0	0
Cem Conc Driveways	0	0
Loam and Seed	14,550	1,617
Clearing and Grubbing	9,253	1,028
Structural Overlay	0	0

	LENGTH (FT)	LENGTH (YD)
Length of Trail	3,887	1,296
Length of Walls	225	75

Earthwork Volume Calculation

CALC'D BY: KA **DATE:** 10/5/2017 **CITY:** EVERETT
CHK'D BY: **DATE:** **PROJECT:** NSCT EXTENSION

Station	End Area [ft²]										Volume [ft³]				
	Leveling	Avg.	**Gravel**	Avg.	**DGCS**	Avg.	**Cut**	Avg.	**Fill**	Avg.	Leveling	Gravel	DGCS	Cut	Fill
3+00	0.00		10.67		0.00		0.00		0.83						
		0.00		10.67		0.00		7.19		0.47	0.00	2,133.33	0.00	1,438.00	94.11
5+00	0.00		10.67		0.00		14.38		0.11						
		0.00		10.67		0.00		22.37		0.06	0.00	2,133.33	0.00	4,473.43	11.18
7+00	0.00		10.67		0.00		30.35		0.00						
		0.00		10.67		0.00		23.37		0.00	0.00	2,133.33	0.00	4,674.83	0.00
9+00	0.00		10.67		0.00		16.39		0.00						
		0.00		10.67		0.00		9.32		0.00	0.00	2,133.33	0.00	1,864.58	0.00
11+00	0.00		10.67		0.00		2.25		0.00						
		0.00		10.67		0.00		8.49		0.00	0.00	2,133.33	0.00	1,698.88	0.00
13+00	0.00		10.67		0.00		14.74		0.00						
		0.00		10.67		0.00		7.81		21.66	0.00	2,133.33	0.00	1,562.04	4,332.88
15+00	0.00		10.67		0.00		0.88		43.33						
		0.00		10.67		0.00		7.30		21.66	0.00	2,133.33	0.00	1,459.59	4,332.88
17+00	0.00		10.67		0.00		13.71		0.00						
		0.00		10.67		0.00		7.18		0.33	0.00	2,133.33	0.00	1,436.96	65.66
19+00	0.00		10.67		0.00		0.66		0.66						
		0.00		10.67		0.00		0.33		15.68	0.00	2,133.33	0.00	65.71	3,135.87
21+00	0.00		10.67		0.00		0.00		30.70						
		0.00		10.67		0.00		0.00		15.35	0.00	2,133.33	0.00	0.00	3,070.21
23+00	0.00		10.67		0.00		0.00		0.00						
		0.00		10.67		0.00		0.00		8.80	0.00	2,133.33	0.00	0.00	1,759.15
25+00	0.00		10.67		0.00		0.00		17.59						
		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
27+00	0.00		10.67		0.00		12.41		0.00						
		0.00		10.67		0.00		7.85		3.87	0.00	2,133.33	0.00	1,570.15	773.60
29+00	0.00		10.67		0.00		3.29		7.74						
		0.00		10.67		0.00		1.65		21.45	0.00	2,133.33	0.00	329.45	4,289.29
31+00	0.00		10.67		0.00		0.00		35.16						
		0.00		10.67		0.00		34.02		17.58	0.00	2,133.33	0.00	6,804.00	3,515.69
33+00	0.00		10.67		0.00		68.04		0.00						
		0.00		10.67		0.00		35.85		0.00	0.00	2,133.33	0.00	7,169.50	0.00
35+00	0.00		10.67		0.00		3.66		0.00						
		0.00		10.67		0.00		2.24		0.00	0.00	2,133.33	0.00	448.52	0.00
37+00	0.00		10.67		0.00		0.83		0.00						
		0.00		10.67		0.00		11.51		0.00	0.00	2,133.33	0.00	2,301.76	0.00
39+00	0.00		10.67		0.00		22.19		0.00						
		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
41+00	0.00		10.67		0.00		0.00		0.00						
		0.00		10.67		0.00		0.00		0.00	0.00	394.67	0.00	0.00	0.00
41+37	0.00		10.67		0.00		0.00		0.00						
											0.00	**36,266.67**	**0.00**	**37,297.40**	**25,380.52**
									Total Cubic Yds		0.00	1,343.21	0.00	1,381.39	940.02

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

SUMMARY QUANTITY SHEET

FROM EARTHWORKS SHEETS

EXCAVATION			EMBANKMENT		
	1,381.39	CY		940.02	CY
	1,381.39	CY		940.02	CY

EXCAVATION			EMBANKMENT		
Earthwork:	1,381	CY	Earthwork:	940	CY
Cement Driveways:	0	CY			
Class B Trench:	370	CY			
Estimated Excavation:	1,751	CY	Estimated Excavation:	940	CY
DEDUCT 2.5% (Boulders):	-44	CY			
DEDUCT 25% (Unsuitable):	-438	CY			
DEDUCT 5% (Shrinkage):	-88	CY	PLUS 15% (Swell):	141	CY
Available Embankment:	1,182	CY	TOTAL Embankment Required:	1,081	CY
			Available from Embankment:	-1,182	CY
			Excess Material :	**-101.16**	**CY**

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 100. SCHEDULE OF OPERATIONS - FIXED PRICE 10% LS

LUMP SUM

ITEM 100. SAY 1 LS

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 101 **CLEARING AND GRUBBING** **A**

FROM AREA SUMMARY PAGE:

	SF	A
CLEARING AND GRUBBING	9253	0.21
	TOTAL	**0.21**

ITEM 101 SAY **0.30** **A**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 102.3 CONTROL OF INVASIVE PLANTS EXISTING ON SITE HR

Assumed	16	HRS

TOTAL = 16 HRS

ITEM 102.3 SAY 16 HR

ITEM 102.33 INVASIVE PLANT MANAGEMENT STRATEGY HR

Assumed		4	HRS
TOTAL =		4	HRS

ITEM 102.33 SAY 4 HR

ITEM 102.4 **ARBORIST** **HR**

Assumed		12	HRS

TOTAL = 12 HRS

ITEM 102.4 SAY **12** **HR**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 102.51 INDIVIDUAL TREE PROTECTION EA

	Station	Offset	Quantity
Assumed			30

TOTAL = 30 EA

ITEM 102.51 SAY 30 EA

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 103 **TREE REMOVED - DIAMETER UNDER 24 INCHES** **EA**

Assumed	5
TOTAL	5

ITEM 103 SAY **5** **EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 105 **STUMP REMOVED** **EA**

	Tree Size	Station	Offset	Quantity
Assumed				20

TOTAL 20 EA

ITEM 105 SAY **20** **EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 120.1 **UNCLASSIFIED EXCAVATION** **CY**

FROM EARTHWORK VOL CALCS:

From Earthwork Worksheet	**Volume (CY)**	
Cut =	1,381	CY
+ 5% Contingency =	69	CY
	1,450	CY

TOTAL 1,450 CY

Contingency 10% = 1595.5

ITEM 120.1 SAY **1,600** **CY**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 141.1 TEST PIT FOR EXPLORATION CY

*Assumed Test Pit Dimensions 5' x 5' x 5' (4.63 CY/Test Pit)
*Assumed 10 Test Pit for drainage trenches

Estimated Quantity of Test Pits	Volume/Test Pit (CY)	Volume (CY)
10	4.7	47

TOTAL 47 CY

ITEM 141.1 SAY 45 CY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 142 CLASS B TRENCH EXCAVATION CY

Drainage Trenches Start	to	End	Length (FT)	x	Average Depth >5'	Trench Width	CF
			100		3	2	600
			100		3	2	600
			100		3	2	600
			100		3	2	600
			100		3	4	1200
			100		3	4	1200
			100		3	4	1200
			100		3	4	1200
			100		3	4	1200
			100		3	4	1200

Total CF	9600
Total CY	355.56
ADD 10 CY CONTINGENCY	10
Total CY	365.56

ITEM 142 SAY 370 CY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 144 CLASS B ROCK EXCAVATION CY

CONTINGENCY ITEM

Assumed 10 CY

ITEM 144 SAY 10 CY

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 151 GRAVEL BORROW CY

FULL DEPTH

Area (SY)	x	Depth (yd)	Volume (CY)
5,183		0.22	1151.78

FULL <4

Area (SY)	x	Depth (yd)	Volume (CY)
0		0.33	0.00

SIDEWALK CONCRETE

Area (SY)	x	Depth (yd)	Volume (CY)
0		0.22	0.00

DRIVES

Area (SY)	x	Depth (yd)	Volume (CY)
0		0.22	0.00

WCR

Area (SY)	x	Depth (yd)	Volume (CY)
0		0.22	0.00

Area (SY)	x	Depth (yd)	Volume (CY)
		0.22	0.00

Area (SY)	x	Depth (yd)	Volume (CY)
0		0.22	0.00

TOTAL	1152	CY
+ 25% SWELL	288	CY
TOTAL	1440	CY

ITEM 151 SAY 1,440 CY

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 151.2 GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES CY

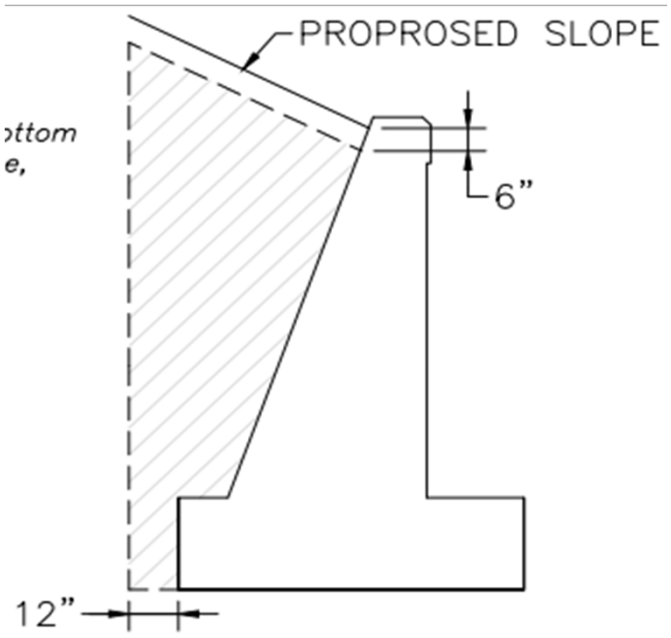
RETAINING WALL

Area	58.00	SF
Length of Wall	225.00	FT

Volume

Area (SY)	Length (FT)		CY
6	225.00		483.33

From LRFD Bridge Manual DWG 3.6.13



WINGWALL

ITEM 151.2 SAY 490 CY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 156 CRUSHED STONE TON

RET WALL

Crushed stone at each end of drain = 2 CY

Volume

	VOL (CY)	Ton/cy	Tons
	2	2	4.00

DRAINAGE TRENCHES

Volume from Item 142 = 370.00 CY

Between shoulder and trench = 55.50 CY

Volume

	VOL (CY)	Ton/cy	Tons
	426	2	851.00

ITEM 156 SAY 855 TON

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 170 FINE GRADING AND COMPACTING SY

FROM AREA SUMMARY PAGE 1:

FULL DEPTH CONSTRUCTION AREAS	Area (SY)
FULL DEPTH=	5,183
CONCRETE DRIVEWAYS=	0
FULL DEPTH <4'=	0
CONCRETE SIDEWALKS=	0
WCR=	0

TOTAL 5,183 SY

ITEM 170 SAY 5,190 SY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 376.5 **HYDRANT-ADJUSTED** **EA**

Plantation Street	**Station**	**Offset**	**Quantity**
Contingency			1
			0
			0

Aitchison Street	**Station**	**Offset**	**Quantity**
			0

TOTAL = 1 EA

ITEM 376.6 SAY **1** **EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 381 SERVICE BOX EA

CONTINGENCY ITEM

ASSUMED I EACH

ITEM 381 SAY 1 EA

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 443 WATER FOR ROADWAY DUST CONTROL MGL

*Estimate 1 GAL per SY
**From Area Summary Sheet

From Area Summary	Area (SY)	
Full Depth >4' =	5,183	SY
Full Depth <4' =	0	SY
TOTAL	5,183	SY

TOTAL = 5183 GAL

ITEM 443 SAY 1 MGL

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 450.90 CONTRACTOR QUALITY CONTROL TON

ITEM 451	20	TON
ITEM 455.23	510	TON
ITEM 455.31	660	TON
ITEM 455.42	0	TON
Total	1,190	TON

ITEM 450.9 SAY 1,190 TON

CALC'D BY:	KA	**DATE:**	10/10/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 451 **HMA FOR PATCHING** **TON**

HMA Match to Exist at Back of Driveways

Area (SY)	Depth (in.)	Ton/sy/in	Tons
150	2	0.056	16.80

TOTAL 17 TONS

ITEM 451 SAY 20 TON

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 452 — ASPHALT EMULSION FOR TACK COAT — GAL

FROM AREA SUMMARY :

From Area Summary		Area (SY)	
Full Depth < 4'=		0	SY
Full Depth =		5,183	SY
	TOTAL	5,183	SY

Base Course

Area (SY)	GAL/SY	GAL
5,183	0.05	259.2

From Area Summary		Area (SY)	
Full Depth =		5,183	SY
Full Depth < 4'=		0	SY
Structural Overlay=		0	
	TOTAL	5,183	SY

Top Course

Area (SY)	GAL/SY	GAL
5,183	0.05	259.2

From Area Summary		Area (SY)	
Mill & Overlay =		0	SY
Structural Overlay=		0	
	TOTAL	0	SY

Top Course

Area (SY)	GAL/SY	GAL
0	0.07	0.0

TOTAL 518 GAL

ITEM 452 SAY 520 GAL

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 453 — HMA JOINT SEALANT — FT

Location Desciption	Length (FT)	
Length of the Project =	4000	FT
ASSUMED PAVED IN 2 Passes =	8000	FT
Limits of Work =	72	FT
TOTAL	8,072	

ITEM 453 SAY 8,080 FT

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 454.5 LATEX MODIFICATION OF HMA TON

ITEM 455.23	510
ITEM 455.31	660
ITEM 455.42	0
ITEM 451	20
Total	1,190 TON

ITEM 454.5 SAY 1,190 TON

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 455.22 SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5) TON

Full Depth Less than 4'	0	SY
Total Full Depth Construction	5,183	SY
Mill and Overlay	0	SY
Structural Overlay	0	
TOTAL =	5,183	SY

Surface Course (1.75 inches)

Area (SY)	Depth (in.)	Ton/sy/in	Tons
5,183	1.75	0.056	507.94

ITEM 455.23 SAY **510** **TON**

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 455.31 SUPERPAVE INTERMEDIATE COURSE – 12.5 (SIC –12.5) TON

Total Full Depth Construction		5,183	SY
Full Depth Less than 4'		0	SY
Structural Overlay		0	SY
	TOTAL =	5,183	SY

Intermediate Course (2.25 inches)

Area (SY)	Depth (in.)	Ton/sy/in	Tons
5,183	2.25	0.056	653.06

TOTAL	653.06	
ITEM 455.31 SAY	**660**	**TON**

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 455.42 SUPERPAVE BASE COURSE - 37.5 (SBC -37.5) TON

Total Full Depth Construction 5,183 SY

TOTAL = 5,183 SY

Base Course (Not needed for path)

Area (SY)	Depth (in.)	Ton/sy/in	Tons
5,183	0	0.056	0.00

ITEM 455.42 SAY 0 TON

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 482.3 SAWCUTTING ASPHALT PAVEMENT FT

STATION & OFFSET	LENGTH	FT
		FT
Contingency if grading into parking lot @ DDR property	160	FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
		FT
Total	160	FT

ITEM 482.5 SAY 160 FT

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 665.3 WOODEN RAIL FENCE FT

	STA & OFFSET		FT
Steep Grading	09+00	22+50	1350
Boardwalk	22+50	32+00	950

TOTAL = 2300 FT

ITEM 665.3 SAY 2,300 FT

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 670 **FENCE REMOVED AND RESET** **FT**

STA & OFFSET	FT
	2364

TOTAL = 2364 FT

ITEM 670 SAY 2,370 FT

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 693 MODULAR BLOCK RETAINING WALL FT

LENGTH	HEIGHT	SF
250	10	2500

TOTAL = 2500 FT

ITEM 693 SAY 2,500 SF

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 698.2 GEOTEXTILE FABRIC FOR SUBSURFACE DRAINAGE SY

	LENGTH	WIDTH	DEPTH	SURFACE AREA [2LW+2LD]
From Item 14	100	2	3	1100
From Item 14	100	2	3	1100
From Item 14	100	2	3	1100
From Item 14	100	2	3	1100
From Item 14	100	4	3	1500
From Item 14	100	4	3	1500
From Item 14	100	4	3	1500
From Item 14	100	4	3	1500
From Item 15	100	4	3	1500
From Item 15	100	4	3	1500
				13400 SF

TOTAL = 1489 SY

ITEM 698.2 SAY 1,490 SY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

704.12 STONE DUST PAVEMENT EA

	TRAIL LENGTH	SHOULDER WIDTH		
Shoulder Area	1,296 FT	2 FT	2,592	SF

TOTAL = 288 SY

Stone Dust Shoulder

Area (SY)	Depth (in.)	Ton/sy/in	Tons
288	4	0.0417	47.99

TOTAL = 47.99 TON

ITEM 704.12 SAY 50 TON

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

707.1	**PARK BENCH**	**EA**

# Park Benches	4	EA

TOTAL =	4.00	EA
ITEM 707.1 SAY	**4**	**EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

707.9	**BICYCLE RACK**		**EA**
	# Bike Racks	4	EA
	TOTAL =	4.00	EA
	ITEM 707.1 SAY	**4**	**EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

710.3 BOUND - LETTERED GRANITE EA

	Station	Offset	Northing	Easting	EA
Start					1
End					1

TOTAL = 2 EA

ITEM 710.4 SAY 2 EA

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 740 ENGINEERS FIELD OFFICE AND EQUIPMENT (TYPE A) MO

ACITIVITY	DURATION	
PRE CONS	1	MONTHS
POST CONS	1	MONTHS
CONSTRUCTION	12	MONTHS
TOTAL	14	MONTHS

ITEM 740 SAY 14 MO

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 748	MOBILIZATION	LS

LUMP SUM

* Mobilization is calculated as 3.0% of the total project cost.

PROJECT TOTAL(APPROX)	$2,043,940
MOBILIZATION COST	$61,318

ITEM 748 SAY 1 LS

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 751 — LOAM BORROW — CY

FROM AREA SUMMARY - Loam Borrow:		14,550	SF
Loam Depth		0.33	FT
	Total	180	CY
	Cont	10	CY
	Total	190	CY

Total =	190
+ 25% SWELL	47
Total =	237

ITEM 751 SAY 240 CY

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 756 NPDES STORMWATER POLLUTION PREVENTION PLAN LS

LUMP SUM

ITEM 756 SAY 1 LS

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 765 SEEDING SY

Loam and Seed	Area (SY)
FROM AREA SUMMARY:	1,617

TOTAL = 1,617 SY

ITEM 765 SAY 1,620 SY

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 804.2 2 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC (UL) FT

Pull Box to Light Pole # Pull Boxes 78 (Every 50')

STATION TO STATION	LENGTH	
P-1		FT
P-2		FT
P-3		FT
P-4		FT
P-5		FT
P-6		FT
P-7		FT
P-8		FT
P-9		FT
P-10		FT
P-11		FT
P-12		FT
P-13		FT
P-14		FT
P-15		FT
P-16		FT
P-17		FT
P-18		FT
P-19		FT
P-20		FT
P-21		FT
For now, assume 4' offset from each pull box to light pole	310.9816	FT
TOTAL	311	FT
ITEM 804.2 SAY	**320**	**FT**

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 804.3* 3 INCH ELECTRICAL CONDUIT TYPE NM-PLASTIC-(UL) FT

Pull Box to Pull Box

STATION TO STATION	LENGTH	
P-1		FT
P-4		FT
P-5		FT
P-2		
P-3		FT
P-6		FT
P-7		FT
P-8		FT
P-9		FT
P-10		FT
CABINET		FT
CABINET		FT
P-11		FT
P-12		FT
P-13		FT
P-14		FT
P-15		FT
Entire length of trail	3,887	FT
Total	3887.27	FT
Spare conduit 225 =	225	FT
Total	4112.27	FT

ITEM 804.3 SAY 4,200 FT

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

811.22 ELECTRIC HANDHOLE - SD2.022 EA

PROJECT ESTIMATE 78 EA

	STATION	OFFSET		STATION	OFFSET
1			14		
2			15		
3			16		
4			17		
5			18		
6			19		
7			20		
8			21		
9			22		
10			23		
11			24		
12			25		
13			26		

TOTAL 78 EA

ITEM 811.22 SAY 78 EA

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

812.09	LIGHT STANDARD FOUNDATION PRECAST		EA
	FROM ITEM 820.111	78	EA
	TOTAL	78	EA
	ITEM 812.09 SAY	**78**	**EA**

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	CITY:
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	PROJECT:

ITEM 813.40 **WIRE TYPE 8 NO. 10 DIRECT BURIAL** **FT**

(FROM ITEM 804.2)

FOR ALL 2" CONDUIT:	320	FT	80' X 4 WIRES =	1280	FT

TOTAL: 1280 FT

ITEM 813.40 SAY **1,280** **FT**

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	CITY:
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	PROJECT:

ITEM 813.521 **WIRE TYPE 10 - #6 GROUNDING AND BONDING** **FT**

Assume grounding wire running through 3 inch proposed conduit

LENGTH OF CONDUIT (from Item 804.3)	4200	FT
Subtract Spare Conduit:	225	FT
Total:	3975	FT
Length of Conduit (From Item 804.2):	311	FT
Total	4286	FT

ITEM 813.521 SAY **4,290** **FT**

813.72 **GROUND ROD 10 FT. LONG**

For the proposed lighting fixtures:

POLE NO.	STATION	OFFSET	QUANTITY		
P-1	300+97	25' LT		EA	
P-2	300+56	39' RT		EA	
P-3	105+35	40' LT		EA	
P-4	104+21	33' RT		EA	
P-5	105+31	31' RT		EA	
P-6	105+78	21' LT		EA	
P-7	106+57	19' LT		EA	
P-8	107+37	19' LT		EA	
P-9	108+29	19' LT		EA	
P-10	109+27	19' LT		EA	
P-11	110+23	19' LT		EA	
P-12	111+19	19' LT		EA	
P-13	112+08	19' LT		EA	
P-14	112+97	19' LT		EA	
P-15	113+88	20' LT		EA	
# Lighting Fixtures, from Item 820.111			78	EA	

For the proposed load center:

2 per load center	8	EA	*Assumed*

For the proposed handholes (from Item 811.22):

	78	EA
TOTAL	163	EA

ITEM 813.72 SAY 163 EA

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
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ITEM 820.111* **PATH LIGHTING FIXTURE "A1"** **EA**

PROJECT ESTIMATE	78	EA
ASSUME LIGHT EVERY 50' ALONG PATH		
TOTAL PAGE 1	78	EA
TOTAL	78	EA

ITEM 820.111 SAY 78 EA

CALC'D BY:	KA	**DATE:**	10/11/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 823.61 **HIGHWAY LIGHTING LOAD CENTER NO. 1** **EA**

SAY 4 LOAD CENTERS @ 10,000 EA.

TOTAL **$40,000**

TOTAL 1

ITEM 823.61 SAY **1** **LS**

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 832 WARNING-REGULATORY AND ROUTE MARKER - ALUM. PANEL (TYPE A) **SF**

* SEE SIGN SUMMARY SHEET

		QUANTITY
FOR ALL STREETS	2 signs 2x2	8
	TOTAL	8 SF

ITEM 832 SAY 10 **SF**

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 847.1 SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY-STEEL EA

* SEE SIGN SUMMARY SHEET

		QUANTITY
FOR ALL STREETS	2 signs	2
TOTAL		2 EA

ITEM 847.1 SAY 2 EA

CALC'D BY:	KA	**DATE:**	1/15/2018	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	1/16/2018	**PROJECT:**	NSCT EXTENSION

ITEM 850.42 RAILROAD FLAGGER HR

MBTA flagger

Phase	# of Flaggers	# of Days	# of Hours	Contingent Hours	Total Flagger Hours
	0	80	0	24	24
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
					0
SUM					**24**

ITEM 850.41 SAY 24 HR

ITEM 852 SAFETY SIGNING FOR TRAFFIC MANAGEMENT SF

*SEE SIGN SUMMARY SHEET

	# signs	Size (SF)		
Signs at beginning of path during construction	2	4.00	8.00	SF
TOTAL FOR CONSTRUCTION OPERATIONS			8	SF

ITEM 852 SAY 8 SF

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
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ITEM 859 REFLECTORIZED DRUM DAY

For start of project

# of Drums	# of Days	Total Drums
4	40	160

SUM **160**

ITEM 859 SAY 160 DAY

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
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ITEM 866.112 12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) SF

Crosswalks:		60	FT
	WIDTH 12"	60	SF
Stop Lines:		10	FT
	WIDTH 12"	10	SF

Total	70

ITEM 866.112 SAY 70 SF

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 867.106 6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC) FT

At approaches to crossings

# Crossings	2	40	FT
DYCL:		0	FT
SYEL:		0	FT

40

ITEM 867.106 SAY 40 FT

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 874 **STREET NAME SIGN** **EA**

* SEE SIGN SUMMARY SHEET

	QUANTITY
STREETS AT APPROACHES	2
TOTAL	2 EA

ITEM 874 SAY **2** **EA**

CALC'D BY:	KA	**DATE:**	10/9/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 874.7	MISCELLANEOUS SIGNS REMOVED AND STACKED		EA
	CONTINGENCY	1	EA
	TOTAL	1	EA
	ITEM 823.71 SAY	1	EA

CALC'D BY:	KA	**DATE:**	10/5/2017	**CITY:**	EVERETT
CHK'D BY:	DN	**DATE:**	12/13/2017	**PROJECT:**	NSCT EXTENSION

ITEM 995.1 TIMBER BOARDWALK LS

COST PER LF	$1,000.00			
LENGTH OF BOARDWALK	275.00	FT	275000	LS

	START	END	LENGTH
BOARDWALK 1	22+50	24+50	200.00
BOARDWALK 2	31+25	32+00	75.00

TOTAL 275000 LS

ITEM 955.1 SAY 275,000 LS

ITEM 999.001	SPECIAL DUTY POLICE OFFICER CONTROL FOR CONSTRUCTION OPERATIONS	HR

ASSUME THE SPECIAL DUTY POLICE OFFICER CONTROL FOR CONSTRUCTION OPERATIONS IS NEEDED AT WELLINGTON/WEST. COST OF SPECIAL DUTY POLICE OFFICERS IS $50 PER HOUR.

TOTAL HOURS FOR SPECIAL DUTY POLICE	40

ITEM 999.001 SAY	40	HR

Appendix B – Public Information Meeting Minutes

MEMORANDUM

To:	Jay Monty Transportation Planner	Date:	June 1, 2017
From:	Hannah Brockhaus Howard Stein Hudson	HSH Project No.:	2016012.00
Subject:	City of Everett Northern Strand Community Trail Extension Public Meeting #1 Meeting Notes of May 4, 2017		

Overview

On May 4, 2017, members of the Northern Strand Community Trail Extension project team held the first public information meeting for the project, at the Connolly Center in Everett. The purpose of the meeting was to introduce the public to the project via a presentation and question-&-answer session; and to provide an opportunity for the public to provide initial guidance and insight to the project team via dedicated break-out sessions.

Jay Monty, City of Everett, opened the meeting with welcoming remarks and an overview of the purpose and history of the project including the City of Everett's successful application for grant funding through the Massachusetts Gaming Commission; he also thanked Bike to the Sea for the organization's ongoing and central support of the project.

Lou Rabito, Project Manager for Howard Stein Hudson, presented an overview of the project, including the team and scope of the work; a history of the Northern Strand Community Trail; the two general alignments to be considered (following Broadway, or linking to existing harborfront paths via Route 16); and area context and design considerations including wetland areas and MBTA rail and operational facilities. Nate Cabral-Curtis, Manager of Public involvement for Howard Stein Hudson, sketched out the key points of the public process; and Pete Stidman, Active Transportation Leader for Howard Stein Hudson, gave background and instructions for the break-out sessions.

Detailed summaries of results and report-backs from the break-out sessions are available in the meeting minutes below. In general, the groups seemed all to focus on major themes including:

- the importance of connectivity – between Boston-metro cities, between the path and Everett neighborhoods, between shopping centers and transit, between the Wynn casino and bike paths;
- the importance of amenities, from bike repair stations to lighting, wayfinding, or phone chargers, making the path an attractive option for users;
- the role that the path can play in commuting patterns and reduction in vehicular congestion;
- lessons from the existing path for how to design the extension, especially focused on safety, lighting, and amenities;
- areas where funding and programmatic support from the casino could enhance the project; and,
- opportunities for future connections and networks, including eventually extending the path to include both alignments being assessed as part of this project.

Maps of the project area were placed at each table; the above themes and many other particular ideas were written and drawn on those maps, which are available in Appendix 3 of these minutes.

To conclude the meeting, Mr. Rabito provided an overview of next steps, which include soliciting and assessing community input from the meeting as well as the online WikiMap, and a Stakeholder Group meeting anticipated for June or July 2017.

Agenda

Detailed Meeting Minutes[1]

Welcome & Opening Remarks

C: Jay Monty (JM): Good evening everyone, my name is Jay Monty, from the City of Everett. Thank you all for coming. Before I introduce the team, I want to provide an overview of where this project came from and what we're aiming to do.

[1] Herein "C" stands for comment, "Q" for question and "A" for answer. For a list of attendees, please see Appendix 1. For copies of meeting flipcharts, please see Appendix 2.

About a year ago, we applied for a grant through the Massachusetts Gaming Commission to study what it would take to extend the path from its current state. There is also a separate process, which you can also get involved in, which is to build a bridge across the Mystic River. The casino is doing that portion of the study, which will be kicked off in the next month or so.

We were successful in winning that grant, and we brought on the consulting firm Howard Stein Hudson: we've got Lou Rabito, Pete Stidman, Hannah Brockhaus, and Nate Curtis here with us tonight from that team. They will give you a brief presentation; tonight is really about giving you an overview of what we're thinking, give you a sense of the challenges and opportunities we're working with here, and start the conversation with other agencies, private landowners, and other stakeholders. This is a challenging route but we're here to work out those challenges.

I also want to thank Clay Larson of Bike to the Sea for being here as well. Bike to the Sea has been enormous in developing the path as we know it, from Lynn to Everett; it is a great organization which you can consider joining yourself, and I know that Bike to the Sea Day is Sunday, June 11. When Lou and his team are done, I will open the floor to Clay for a few minutes to talk about what they do and how they're a part of this project.

With that, I'll turn it over to Lou to get us started.

C: Lou Rabito: Thanks, Jay. Howard Stein Hudson was brought on by the City of Everett to look at the extension of the Northern Strand Community Trail, funded through the Gaming Commission grant that the city received, as Jay mentioned. Here's a little bit about our firm and our experience with trails and these types of projects. Before joining Howard Stein Hudson, I was a manager and Complete Streets Engineer at MassDOT, where I had the opportunity to work on several key projects within the department. One of those was the MassDOT Separated Bike Lane Planning & Design Guide, and I also worked on the MassDOT Complete Streets Funding Program. Also with us is Pete Stidman, who before joining Howard Stein Hudson was the Executive Director of the Boston Cyclists Union. I believe our firm really 'gets' active transportation, including cycling and walking, and will bring that perspective to this project.

Following this welcome and introduction, I'll give you a brief project overview. After the presentation we'll go into breakout groups, to start everyone thinking about needs and desires for this project. We want to know how you use the path that exists now, how you would use it if it extended further and connected. Then we'll all gather together to report back on what those groups brought to light. We'll be taking all of this information back, along with our online survey WikiMap, to help inform our conceptual ideas for the project moving forward. Project next steps are the last thing on the agenda for tonight.

Project Overview

C: Lou Rabito: Our team is led by Keri Pyke, the principal in charge of the project. I'm the Project Manager; and as Jay mentioned, Nate and Hannah from our Public Involvement team are here tonight, as well as Pete from our Active Transportation group. There is a large team on the project including two other firms who are working as sub-consultants on this project: Green International is doing survey and wetlands, and HNTB is sub-consulting for Rail and Transit.

To give you a bit of background on the Northern Strand Community Trail; it runs along approximately 10 miles along the old Saugus branch of the Boston & Maine Railroad. It begins in Lynn to the north, and runs through Malden, Revere, and Saugus on its way to Everett. The final trail ran on this line on May 19, 1958 – it's been a while since it was an active rail line. Where the run joins the active Newburyport Commuter Rail route, there is an active rail-line to contend with. Just as a sort of interesting fact, there were three stops in Everett: West Everett, which was originally located on Waters Avenue but moved to the base of Prescott Street in 1882; West Street; and Everett Junction, at the intersection of Revere Beach Parkway and Broadway, which was formerly known as South Malden Junction.

As Jay mentioned, this project is supported by Bike to Sea, whose mission is to build a car-free path between Boston and the beaches in Revere, Lynn, and Nahant—in both directions. Of the 10-mile trail, roughly 1 mile runs through Everett; this project will extend the distance of the trail in Everett by roughly ¾ of a mile. It's also worth noting that the Trail has been designated as part of the East Coast Greenway, which aims to run continuously for about 3,000 miles from Calaise, Maine to Key West in Florida.

Currently, the Northern Strand Community Trail terminates at Wellington and West Streets. At the point where it dead-ends, you have two choices as a rider or walker: either going left onto West Street or Right onto Wellington. This is an issue especially for commuter routes. If you go left on West Street, you hit Sweetser Circle, which for most cyclists presents a safety and comfort issue. Or, if you go off to the right on Wellington, you'll hit Santilli Circle before being able to go over the bridge into Medford and then from there to Somerville, Cambridge, and eventually Boston via a circuitous route.

One of the main questions facing us with this project is where we end it. This is to be determined, but the arrows shown here cover a few possible alignments and end-points. Here on the map is the existing Commuter Rail Newburyport Line; the Saugus branch line joins just under the bridges, here. One option is to use the existing railroad Right-of-Way (ROW) and maintain a safe offset from the existing tracks; this would involve splitting off for connections to

Gateway Center and the future Wynn Casino. The green arrows show a few potential crossing points along that alignment to access Gateway Center; the bottom-most one, closest to the water, will remain regardless of the alignment of our project, and be part of Wynn's connections to and from Gateway Center.

Across the river to Boston, there is a study underway regarding building a new bridge from Wynn to the Assembly Square area. The other option for crossing the river in this alignment would be on Alford Street, coming across the Alford Street Bridge into downtown Boston.

To give some context, this is a map of existing and proposed bike facilities in the area; focus on this green line to get an idea of the main route of the Northern Strand. There are additional bikeways planned and existing on Broadway in Somerville, around Sullivan Square, Main Street through Charlestown, and a series of other connections as you move up the shore here, including the path along Revere Beach.

One of the things we look at for this type of project is the bicycle and pedestrian level of comfort, and gaps in the existing network. We do these analyses for our Complete Streets Prioritization Plans including one for the City of Everett; they take into account street widths, vehicular traffic, vehicular speeds, whether there is parking, and other factors. Taken together, these allow us to determine a scale of comfort for cyclists and pedestrians on any given path or roadway. A high-speed roadway with no bike lane, for example, would be a low level of comfort; in residential areas, with lower speeds and traffic, you'll see a higher level of comfort.

You can see along lower Broadway here that deep red—that means there is a low level of comfort as you head towards the river. Similarly for pedestrians, although there are more in the 'medium' ranges than the 'low' category, you can still see that those main spines aren't green. For both, the residential and side-streets are the low-vehicle-speed, high-comfort areas. And we know from many other projects that the highest comfort level are off-road paths, where you don't have any cars to deal with at all; that's part of the reason behind this project.

We also focus on safety concerns, including measuring bike crashes and pedestrian crashes. On lower Broadway and at Sweetser Circle, there have been a handful of crashes: 8 crashes were reported just from 2012-2014; another half-dozen for pedestrians in the same period. These issues would be addressed by providing a new path giving both the option to get off the road.

Next up, you can see here some of the points of interest in the project area. Along the route as you cross Sweetser Circle, and head along Broadway, there is an MBTA ballast yard—where stone is stored for MBTA rail infrastructure—that we will have to contend with in the design.

Additionally, we've highlighted the Wynn Casino site, the Gateway Center, and existing public sidewalks and trails; finally, in the light blue, is the trail and Harborwalk to be built as part of the Wynn Casino project.

I mentioned wetlands earlier; we will be able to look in greater detail at these issues as we do our survey with Green International, but here's what we know. Along Broadway and the tracks there are pockets of wetland areas, within our project limits. The Department of Conservation and Recreation (DCR) and the Department of Environmental Protection (MassDEP) will play an important role in identifying potential places to put the path that will minimize impacts to these resources; regardless of which alignment we design, whether continuing the path along the tracks or going around the Gateway Center, there will be wetland areas to contend with.

We also have to consider the active Newburyport/Rockport Commuter Rail Line; you can see the rail bed going through this photo. The MBTA wants 25' from the center line of the track to any bike/pedestrian facility. We have to balance these considerations, with wetlands to one side of the track and a need to both not encroach on the railroad Right-of-Way and not impact the resource areas. If that ends up meaning less than 25', we could explore physical barriers as well.

I mentioned the ballast yard earlier; here are two angles showing that area. This will be a challenge we have to contend with, because the MBTA needs to be able to load and unload ballast, which means being able to move material and equipment around. One concern with moving all that ballast around is that it kicks up a lot of dust; cycling along this empty area, I think you'd be concerned about dust blowing into your eyes.

We also have to consider the proximity of the path to the Gateway Center shopping plaza. On the right is the guardrail running along the back of the shopping center. There is 30' at the bottom of a slope between this and the railroad Right-of-Way. Fitting the path through here would be a challenge. We would also have to coordinate with the developers to make sure they would feel comfortable with that option.

I mentioned that we're looking at two options for the path alignment; the one I already talked about uses Broadway. The other would run closer to the Mystic, connecting along Route 16. There would likely be options here to connect with the existing path network—in yellow and red—which could then bring you back through the development areas, back onto Broadway, and crossing Alford Street or bridging to a future off-road connection.

I'll turn things over to Nate to briefly go through our approach to public process.

C: **Nathaniel Cabral-Curtis:** Good evening everyone, my name is Nate Curtis; I'm the head of the Public Involvement group at Howard Stein Hudson, which will be engaged in a robust engagement effort here. By the way, this is the evening of my 37th birthday, so I'm glad you all came out for the party. I don't know where my cake is, but I'm sure it's coming.

The goal of public meetings like this is to allow the public an opportunity to comment and give us input on the directions we should be going on the project. This involves both the standard, 'watch the presentation and then ask questions' as well as the break-out groups we're going to go into, and the dot-exercise you all did on that big board when you came into the room, giving us your origins and destinations.

We are also convening a stakeholder group, which will meet roughly monthly to work through the really fine-grain, heavy details of the project—like the wetlands issues. That work will inform our design, and be reported back to public meetings. I also urge you all to avail yourselves of the WikiMap and spread the link through your neighborhood and advocacy networks. We understand that 6pm or 7pm on a weeknight is not the most convenient time for everyone; the goal behind the WikiMap is to allow people to go online on their own time to drop a pin on the map of the project area and write a comment with your thoughts, concerns, and suggestions.

You can follow that link on the screen, or you can even text 'Strand' to 33444 to get a link to the WikiMap sent directly to you. This is the first time we've done texting; goes to show how quickly our engagement strategies evolve and change with all the technology. Let me hand it over to Pete to go through the break-out sessions and lead us into that part of the meeting.

C: **Pete Stidman (PS):** Thanks, Nate. Alright, so the aim of these break-out groups is to get some initial feedback on the design of the path – what do you want to see in terms of alignments, but also the kinds of issues and ideas you want us to be thinking about. For example, thinking about safety is important, and that can encompass things like pointing out areas where you might not feel comfortable riding alone, but also what would draw you to use the path. There's not a whole lot of room to work with, but small amenities like benches or repair stations or lighting can all contribute to the sense of place and attractiveness of the space.

C: **Lou Rabito:** We're also trying to get a sense of where people need access to shopping or the neighborhoods; safety in general in the area, not just on the existing paths but also other sidewalks in the area; generally what kind of ride you experience right now and what you'd like to experience; which roads and paths you'd use to get to your various destinations; et cetera.

C: Pete Stidman: We're also trying to get a sense of desire lines: once you cross the circle, there is not a lot of consideration for pedestrians out there today. But, there may be some ways you can help that situation, and we want to know what people are thinking about and want. Even if it ends up that we can't address it with this project, Jay and the Planning Department still want to take note of those things for other projects and planning efforts.

Alright, we're going to break into groups of 4-6 people per table; we'll all be over there helping you out, taking notes, and listening carefully. Let's get going, and report back afterwards.

Break-Out Group Report Back

C: Steve Winslow: We talked a lot about the possibilities for connections: quite a few people come from the northwest in Everett, and see the potential here to create connections from Everett into the Charles River Basin. This last half-mile, connecting down through Charlestown, is a big barrier; resolving that will really open up everything else. We also talked about routes to Cambridge and Somerville, and there was lots of interest there. We focused on the stretch behind Gateway as a more direct; that said, we would have to learn more about how it would work and whether you could go around it. We talked about the new 'Fermentation District', which is a very nice thing, and we should create connections to that to get people there without having to go onto the highway. There's also the obvious opportunity now that Wynn is connecting the Harborwalk down to Alford Street, and we talked about how that relates to Gateway shopping center. You can't exactly get a 50lb bag of pet food on your bag from Costco, but that could change in the future. We talked about eateries as one example of that possible shift in uses. There are also connections to Everett Square in Chelsea—both getting people here and coming down. Overall it seems like there are a lot of opportunities and the group is very excited.

C: John Whelan: The primary undertone for our group, after safety, is commerce. The inflow of traffic to Wynn will empower local commercial activity as well as an outflow of labor force. We don't have metrics for Gateway Center—we ballparked maybe 5,000 employees but we don't know how many live in Everett. Wynn promised, I think, 4,500 jobs at the casino, with 20% from Everett. With all that in mind, we talked about how to structure this and decided that we can't do one or the other paths, but need to just do it all. The mayor and others talk about how we need to get cars off the road to ease congestion. This won't happen quickly, but this is a first step to take in order to achieve it. We talked about the protected path in the plan and which side of the active track it should be on, and how that will butt up against it through the ballast yard. We talked about options for containment, and doing some sort of water-curtain or sprinkling there to mitigate the aerosolized stone-dust. We talked about ownership by Wynn of the new athletic

fields for the high school, and their redesigning of the dog park and office buildings. We talked about increases in human activity and the impacts for safety. We also brought up the idea of adding navigation markings—something sophisticated, not just a piece of paper that gets sunwashed and unreadable after a brief time. We talked about call-boxes and charging stations for phones as a safety and convenience concern. We also talked about connections to Assembly Square, and how to get bikes off Broadway, which we thought is a very important step here. It's helpful to have protected facilities, but convincing Wynn to put in access from Broadway at the city line to the main path will be critical. Similarly, we talked about needed to really hammer through on the bridge project to Assembly, which is in a conversation stage now but needs to happen before Wynn brings more traffic.

C: Jay Monty: That bridge is important to manage their traffic, yes.

C: John Whelan: We also talked about monetizing rentals, and giving free bikes for guests to travel through the bike paths, through the woods and the wetlands, as part of the casino/hotel experience. This could be Hubway, or something else through the casino.

C: No Name Given (NNG): There are plans for bikeshare facilities in Everett that aren't Hubway.

C: Jay Monty: We're pursuing a grant to fund bikeshare; the plan is to bring bikeshare to Everett in the next year or two. If we're successful with that grant, and we're supported, it could be Hubway. If not, it may have to be self-funded and then it could be some other model.

C: John Whelan: We also talked about ways to monetize this project to help it succeed; and access to the trail, with bike racks, at various points along the trail, and at Gateway and Wynn. We talked about bridging over the traffic circles; we talked about the idea that there is the 'utility line' path along the rail tracks and Broadway, but also the 'scenic line' with the meandering pedestrian and bike paths. We talked about creating intentional barriers, to force bikes to become pedestrians when necessary, so that if they're coming into an area with dense pedestrian traffic, they'll have to navigate some obstacles and get off the bike. We brought up the example of Memorial Drive and other effective strategies for mixing zones.

C: Bruce Kulick: We didn't end up writing a lot, but had several points to highlight. We talked about safety along the existing parts of the path, and possibilities for patrolling that better as well as call boxes and similar mitigations, as well as better lighting. We talked about how to handle concessions or activities along the path—placing things like benches, water fountains, and commerce back against the track, modeled like the Minuteman trail. We talked about having access from the path rather than the store. We talked about two philosophies for the

path—a scenic route or a direct line—and decided that you should probably do both meandering and commuting. We're assuming that there will be a bridge at some point, which will really 'make' this project. We talked about how to get to the neighborhoods on the other side of Broadway; I suggested a surface crossing, which exists in some other places, but was told that the MBTA is not fond of that, and we also considered a bridge as an option that would be expensive but could work. We also talked about connections into and bike parking within the shopping center, and encouraging the owners to install more. It's a pain at the moment; there's no place to lock up. Wayfinding is also a great idea. We talked about Night Shift Brewery and other restaurants, and making this area into a district, like a casino and brewery district—that 'Fermentation District' someone mentioned. We talked about having kiosks with maps for wayfinding. We talked about connectivity across the river to Malden, and possible bridge crossings further up the river. We talked about water fountains and restrooms, and recognized the issues with having public restrooms in private areas; it seems to me that restrooms are important and we need to overcome some of those challenges. We talked about some ideas for self-cleaning bathrooms, timed-opening bathrooms, and that sort of thing, from New York and Cambridge. Someone also mentioned using the casino for bathrooms. We also talked about charging stations and the possibility for solar charging. We discussed ballast yard mitigation options including watering, and investigating with the MBTA how else they can cooperate.

C: Clay Larsen: It seems like we've got some great minds in the room, because we all thought about similar territory. We talked about connectivity and multimodal permeability – from the village to Gateway, from the T to the shopping center, from the river to the shopping center. We talked about developing a coherent network with signage, so that you know how to get, say, to Costco, as well as the whole East Coast Greenway. This is a major commuting route into the city. There are areas that get a bit remote around Rt. 16, in the wetlands area. We talked about lighting, video cameras, police call boxes, and access gates for emergency services to get in (but which could be limited access for anyone else). We talked about the controversy with the directionality of mileage markers and where the Northern Strand formally starts, and how to address all those opinions. One idea we talked about was creating a formal 'trail-head' at the water, with signage pointing to the end of the trail 12 miles away in Lynn.

C: NNG: We talked about the fact that it's "bike to the sea" and not "sea to the city", so

C: Clay Larsen: We also loved the idea of bikeshare; I know Malden has been talking about bringing bikeshare as well. I've always said to them that unless you connect to Boston, it wouldn't be a good idea. But with this link, and bikeshare here, you could make it feasible. They would be an economic driver, and bring tourists to Malden, who could bike from Boston to the

casino, get lunch in Malden Center, and then go to Saugus to see the national park; there's an opportunity here for some pretty cool ecotourism.

C: **NNG:** One other thing: the Alford Street Bridge towards Assembly may be too congested for bikes and pedestrians, so maybe it should be designed as a separate bike and pedestrian bridge, or designed to be wider because there will be such a demand for it.

Next Steps

C: **Lou Rabito:** Thank you, everyone, for a great session. There are just two more slides I'd like to get through and then we'll be done for the night. I'm sure I speak for all of us in saying that enjoyed the conversations and appreciate your input. Some similar themes seem to have developed from each table: connectivity, safety, connections to economic development opportunities, paths and access to shopping; and the general goal of improving life in Everett.

Our next steps start with continuing to collect feedback from the WikiMap and integrating that data; there's a link to that on the website, and come see me if you don't have it so you can share it around and in case you think of something you didn't mention tonight. We will take all of these data together and continue to develop our understanding of the project and the area, including that survey I mentioned. The next Stakeholder Group meeting is expected in June or July. And thank you again to Jay and the city for hosting us here tonight.

C: **Jay Monty:** Thank you all for being here tonight. There will be challenges with this project, and plenty of process left to go through to deal with them; the support of residents and users throughout this process will go a long way to support the development of the project. Good night!

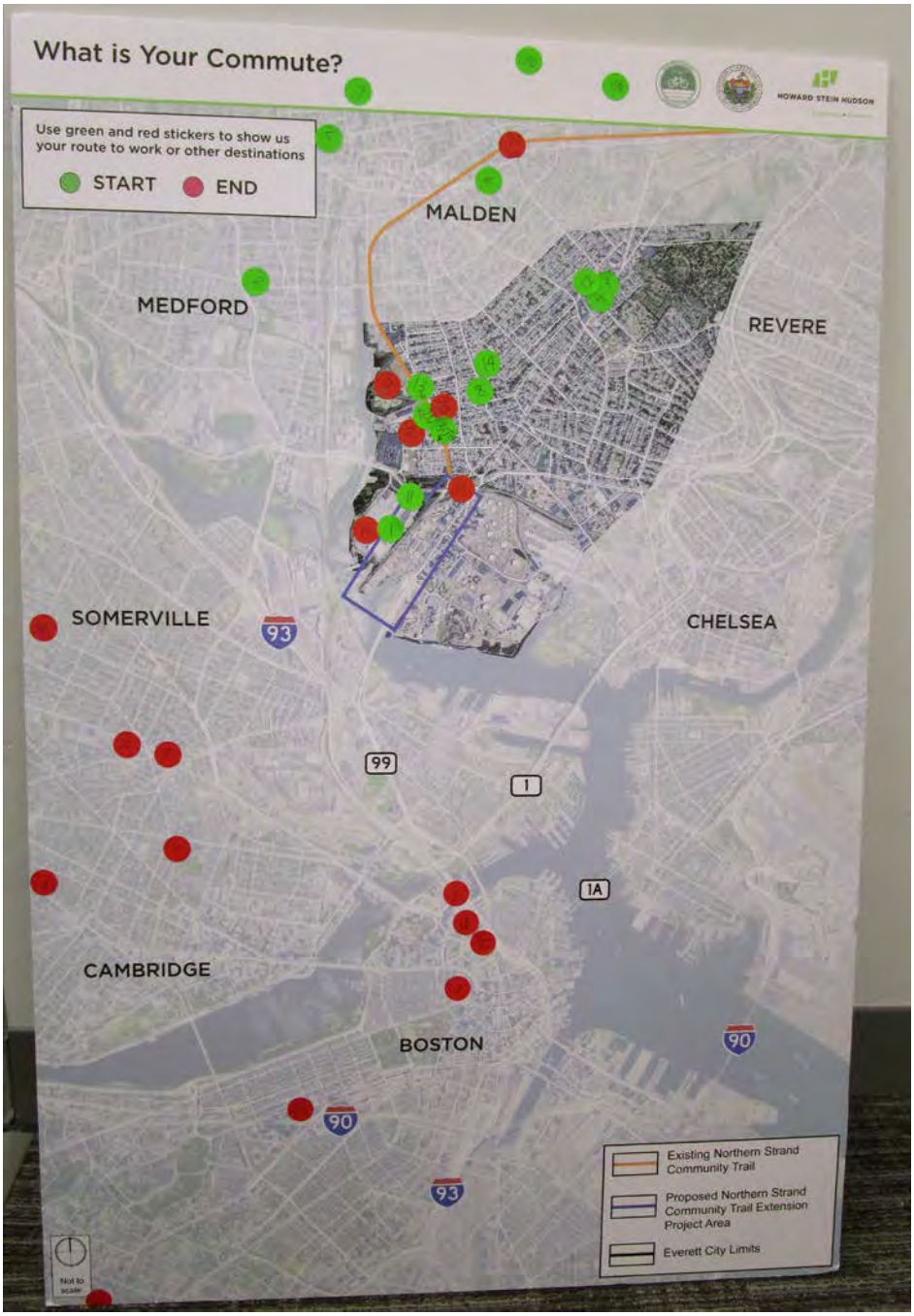
Next Steps

The project WikiMap will be accepting feedback through May 31st at the following link: http://wikimapping.com/wikimap/Northern-Strand-Wikimap.html. The next Stakeholder Group meeting is anticipated for June or July of 2017. In between these meetings, the project team will continue to develop a detailed understanding of the project area with area survey, and continued collection and assessment of public input from this meeting as well as the WikiMap.

Appendix 1: Meeting Attendees

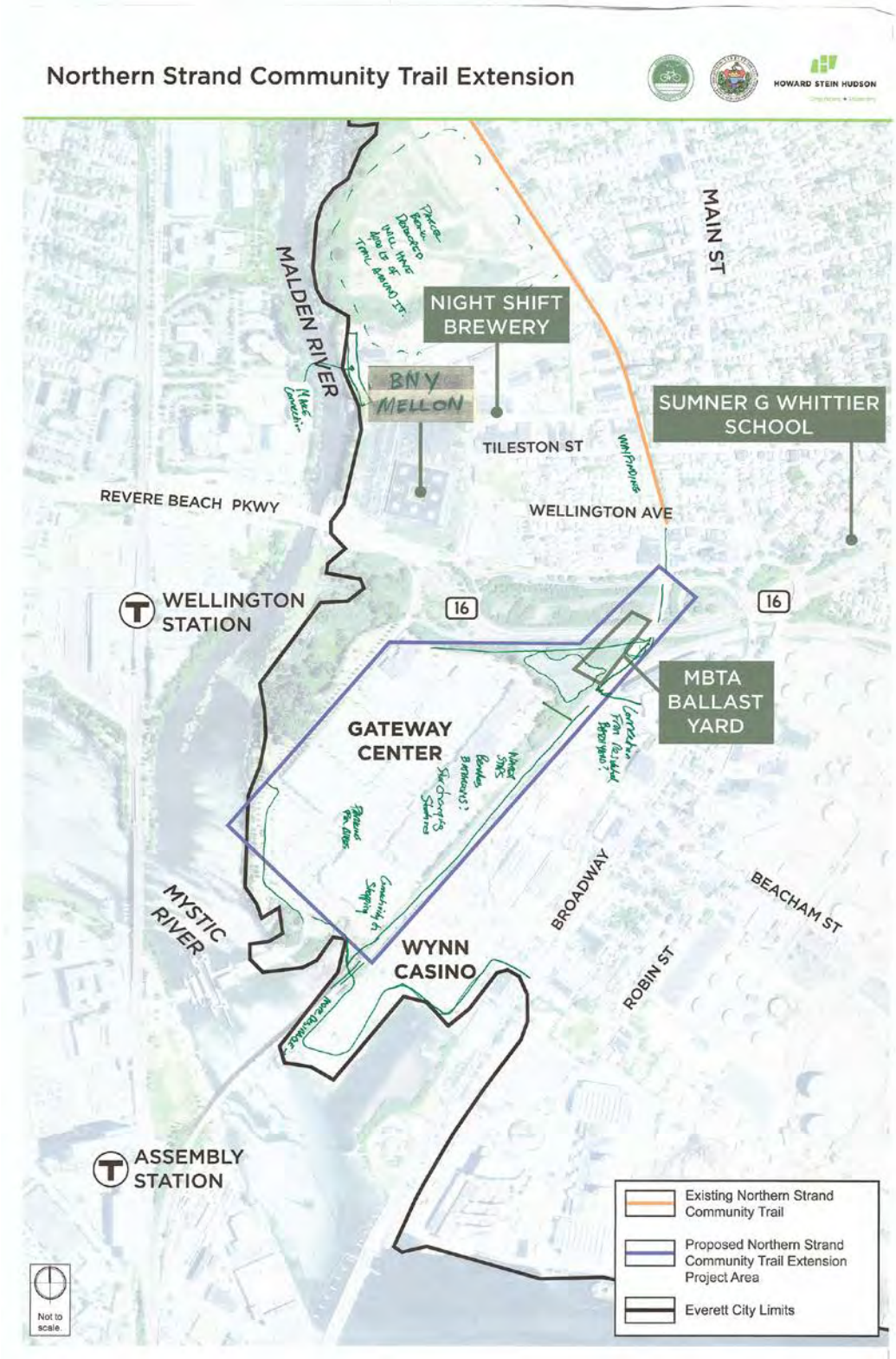
First Name	Last Name	Affiliation
Younes	Abesi	Stakeholder Group, Bike to the Sea
Tom	Blaze J	Melrose Bike Ped Advisory Committee
Naomi	Brave	
Hannah	Brockhaus	Howard Stein Hudson
Natalie	Brown	Stakeholder Group, Wynn Design & Development
Nathaniel	Cabral-Curtis	Howard Stein Hudson
Amber	Christoffersen	Mystic River Watershed Association
Daryl	Colson	Bike to the Sea
John	Covino	
Seth	Daniel	Everett Independent
Frederick	Hart	
Bruce	Kulick	Medford Bicycle Advisory Committee
Clay	Larsen	Bike to the Sea
Jay	Monty	City of Everett
Lou	Rabito	Howard Stein Hudson
Pete	Stidman	Howard Stein Hudson
Roger	Thistle	
John	Whelan	Everett City Council Candidate
Stephen	Winslow	Bike to the Sea
Micah	Yannatos	Bike to the Sea
Angela	Zarella	

Appendix 2: "What is Your Commute" Exercise Map



Appendix 3: Break-Out Group Maps


Northern Strand Community Trail Extension
HOWARD STEIN HUDSON
MALDEN RIVER
NIGHT SHIFT BREWERY
BNY MELLON
SUMNER G WHITTIER SCHOOL
TILESTON ST
WELLINGTON AVE
REVERE BEACH PKWY
WELLINGTON STATION
16
16
GATEWAY CENTER
MBTA BALLAST YARD
MAIN ST
BROADWAY
BEACHAM ST
ROBIN ST
MYSTIC RIVER
WYNN CASINO
ASSEMBLY STATION
Existing Northern Strand Community Trail
Proposed Northern Strand Community Trail Extension Project Area
Everett City Limits
Not to scale.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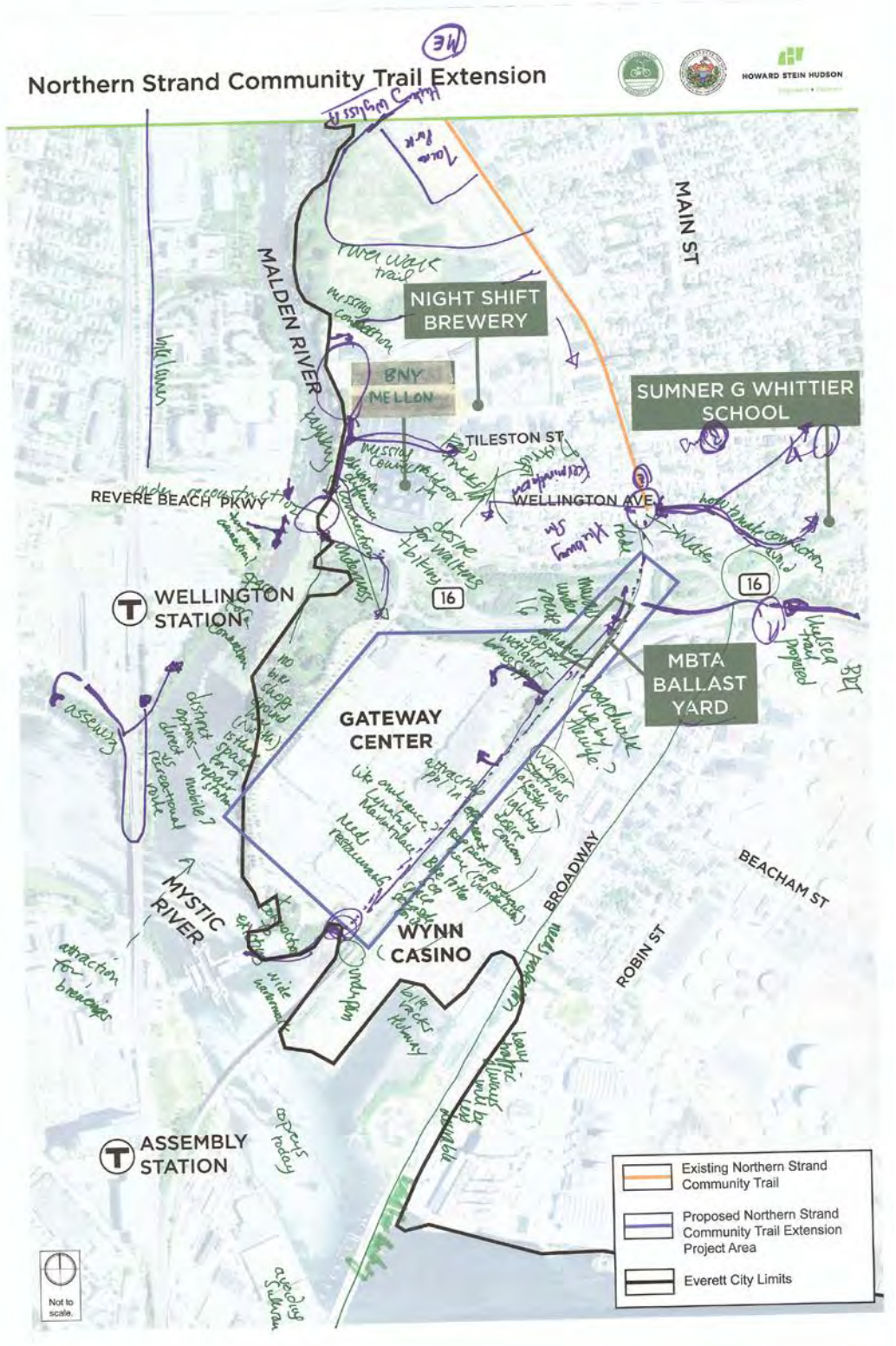
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