

# Bruce Freeman Rail Trail Design Task Force Recommendations Report

March 21, 2017  
Board of Selectmen Meeting

# Outline

- Task Force Overview and Goals
- Task Force Methods and Outreach Efforts
  - Task Force Meetings
  - Outreach to Interest Groups
  - Meetings with Abutters
  - Public Information Meeting
- Recommendations
  - Alternative Routes
  - Rail Trail Surface
  - Rail Trail Standard Width
  - Treatment in Challenge Areas
  - Roadway Intersections
  - Additional Investigations



# BOS Mission Statement for Task Force

The responsibilities of the Task Force will include the following:

- Gathering input from Town Boards and Committees including the Conservation Commission, the Community Preservation Committee, and the Park and Recreation Committee;
- Gathering input from the Town's public safety and engineering staff concerning traffic and safety issues with the BFRT, especially where the rail trail intersects with roadways;
- Soliciting community input through open and noticed meetings; Facilitating meetings of the Task Force with trail abutters to discuss design elements of the project that specifically affect them, which will be in addition to the meetings contractually required of VHB;
- Documenting concerns and requests of abutters, businesses, and other residents;
- Recommending to the Board of Selectmen potential design elements that would advance the goals of the Sudbury Wetlands Administration Bylaw, and developing alternatives along with cost estimates as feasible;
- Recommending to the Board of Selectmen any specific design elements, mitigations, or realignments to address resident concerns (including those of abutters), safety concerns, or environmental concerns, along with cost estimates for such design decisions as feasible;
- Submission of a report of its findings to the Board of Selectmen.

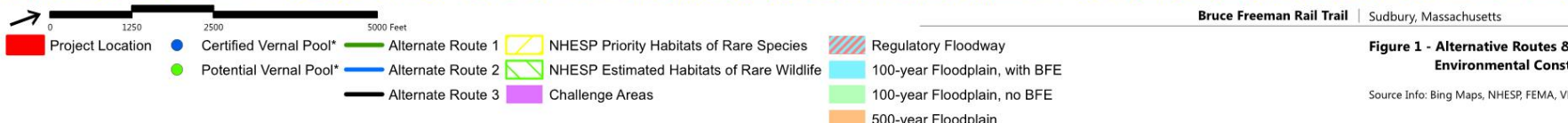
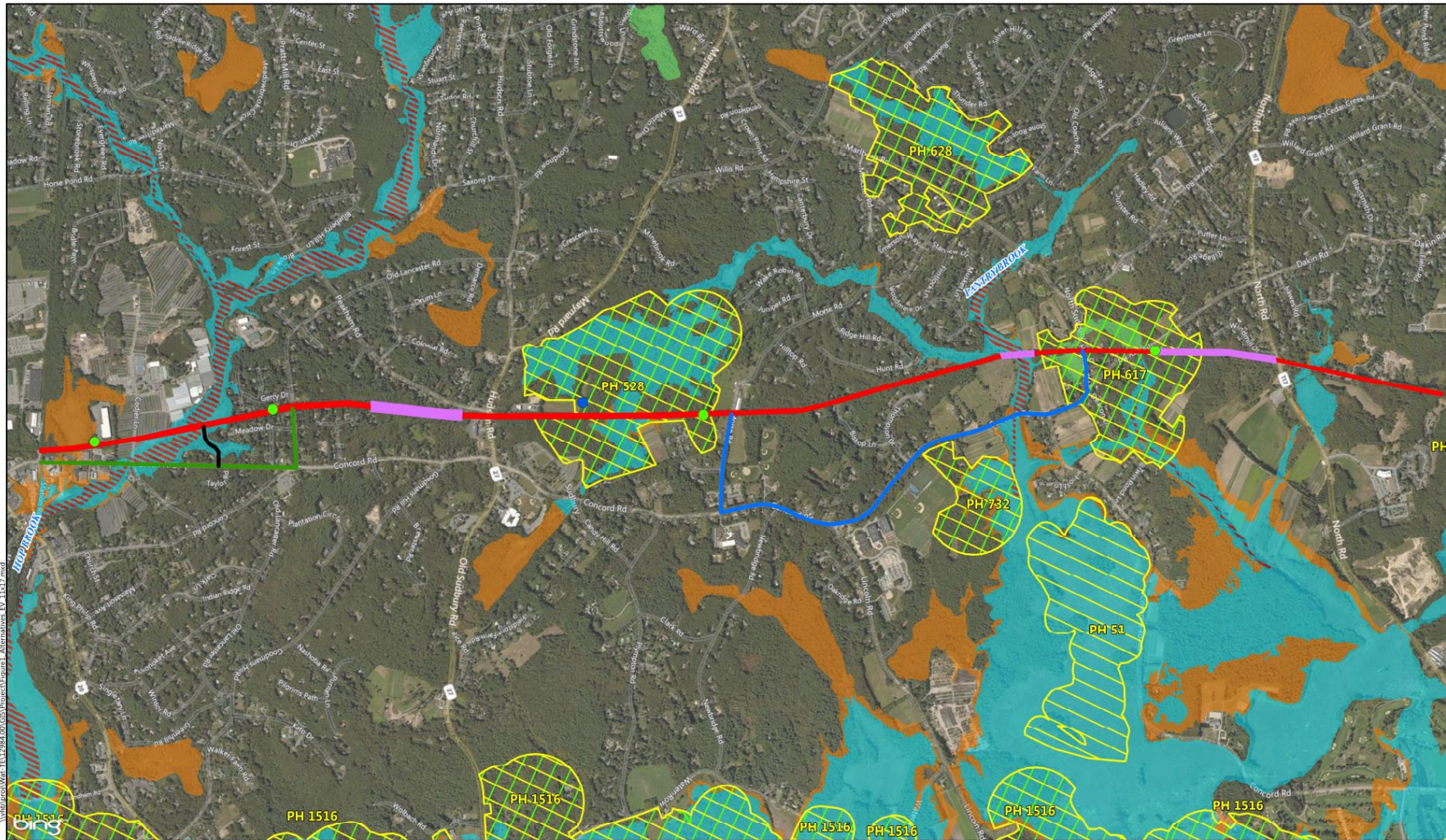
# Task Force Membership

| Name              | Position   | Appointed by                    |
|-------------------|------------|---------------------------------|
| John C. Drobinski | Chair      | BOS                             |
| Daniel E. Carty   | Vice-chair | Planning Board                  |
| Charles Russo     | Clerk      | Conservation Commission         |
| Robert C. Beagan  | Member     | Parks and Recreation Commission |
| Lana B. Szwarc    | Member     | Friends of BFRT                 |
| Robert Schless    | Member     | BOS                             |
| LeRoy Sievers     | Member     | BOS                             |

# Task Force Methods and Outreach Efforts

- Task Force Meetings
  - January 17, February 2, February 16, March 2, March 16, March 20, 2017 (6 meetings)
  - Sixteen meetings and/or presentations for the BFRT Design Task Force took place since the Task Force formation
- Outreach to Interest Groups (6 meetings)
  - Received input from DPW and Fire Department: February 2, 2017
  - Board of Health: February 14, 2017
  - Planning Board: February 22, 2017
  - Historic Districts Commission: March 2, 2017
  - Council on Aging: March 9, 2017
  - Conservation Commission and Parks and Recreation Commission: March 13, 2017
  - Also engaged: Chamber of Commerce, SPS, LSRHS, Agricultural Commission, and Energy and Sustainability Committee
- Meetings with Abutters: March 2, 2016 (approximately 50 attendees), plus additional two individual abutter meetings with Task Force representation
- Public Information Meeting: March 9, 2017

# Alternative Routes Considered



Bruce Freeman Rail Trail | Sudbury, Massachusetts

Figure 1 - Alternative Routes & Environmental Constr

Source Info: Bing Maps, NHESP, FEMA, VHI

\* Based on 2015 Vernal Pool Investigation\*

Attachment 4.b: BFRT TF Recs for BOS 3.21.17 (2278 : BFRT task force recommendations)

# Recommendations: Alternative Routes

- Alternative Routes –None of the presented roadway alternative options are considered feasible
  - Infeasibility is based on limited right of way, lack of abutter support, cost, safety concerns at the roadway intersections and the numerous driveway intersections, and lack of desired trail user experience
- It is recommended that the Design Team continue to collaborate with the concerned businesses abutting the rail corridor to identify potentially more feasible alternatives

Union Ave



# Alternative Route

## Concord Road



Attachment 4.b: BFRT TF Recs for BOS 3.21.17 (2278 : BFRT task force recommendations)

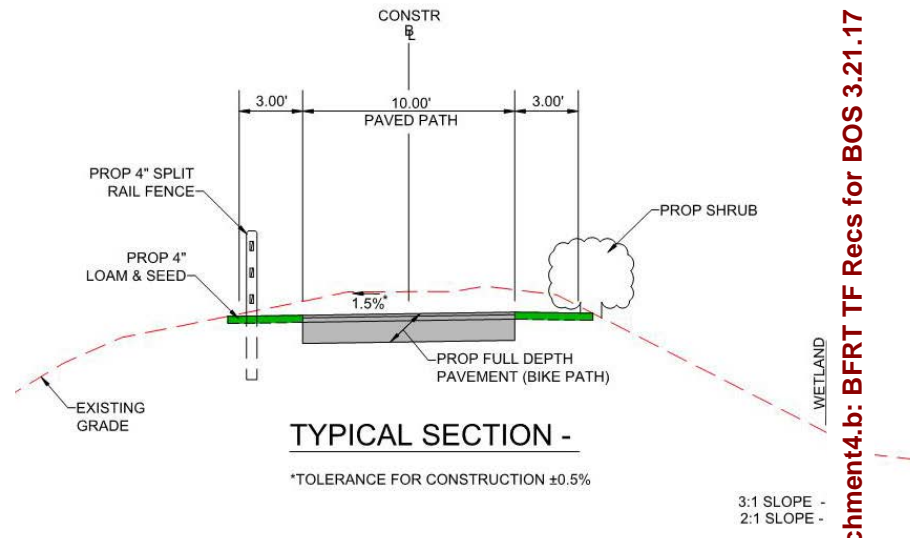
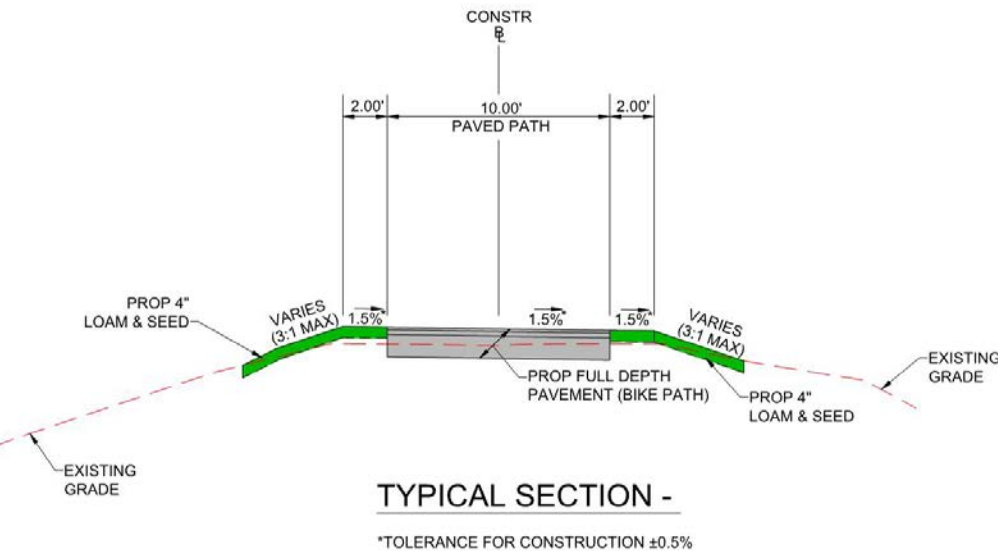


# Recommendations: Trail Surface

- Paved Surface
  - Considers the safety of users on a uniform surface, facilitates safety vehicle access, provides greater ease of maintenance, continuity with the BFRT to the north, and the greatest containment of potential rail road contaminants.
  - Bridge surface is anticipated to be paved and boardwalk surface is yet to be determined.

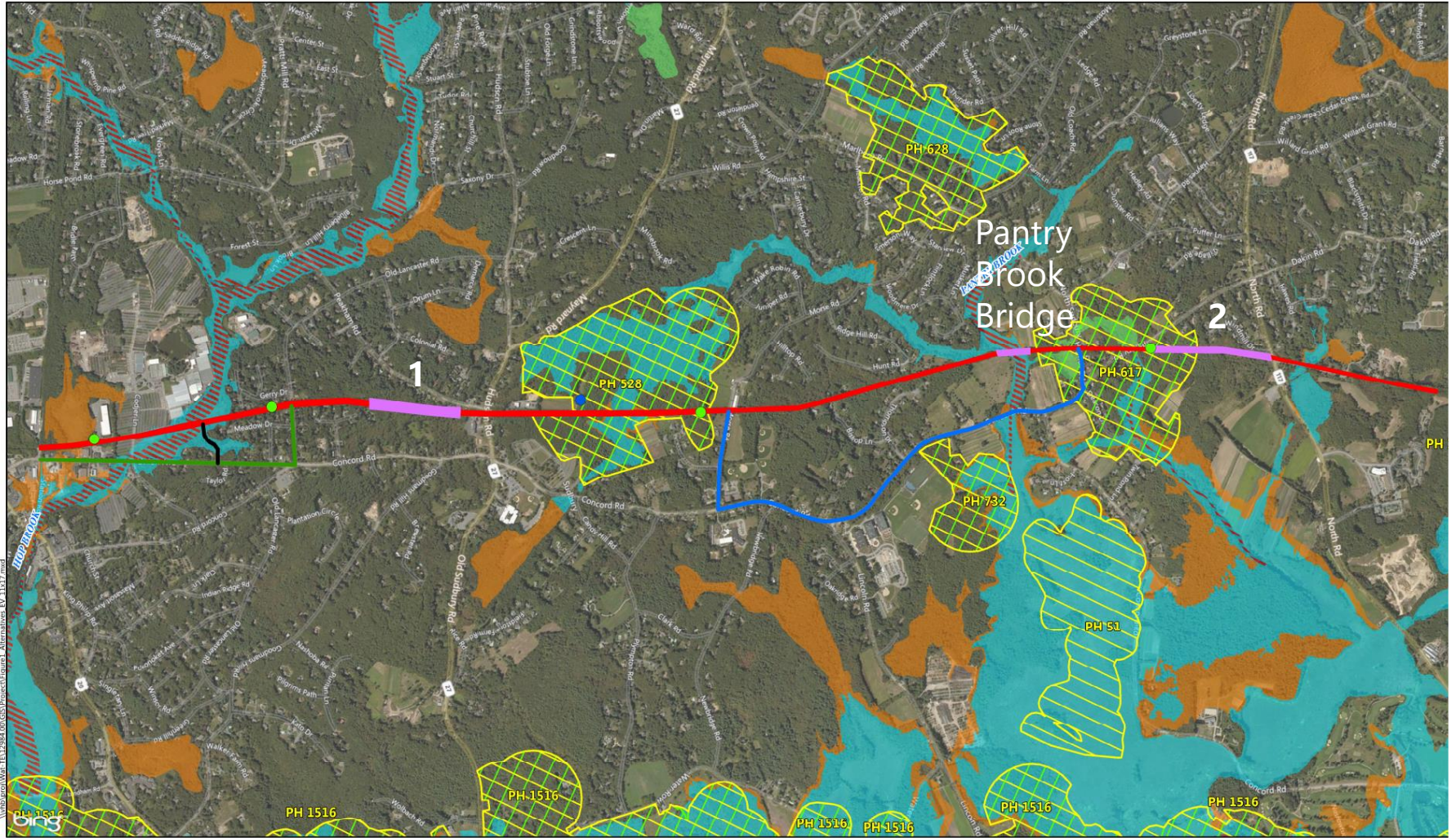
# Recommendations: Standard Trail Width

- Standard approach: 10-foot path standard with 2-3 foot shoulders (depending on the slope adjacent to the path and the need for a barrier). This represents a 14 or 16-foot wide layout



Attachment 4.b: BFRT TF Recs for BOS 3.21.17 (2278 : BFRT task force recommendations)

# Challenge Areas (in pink)



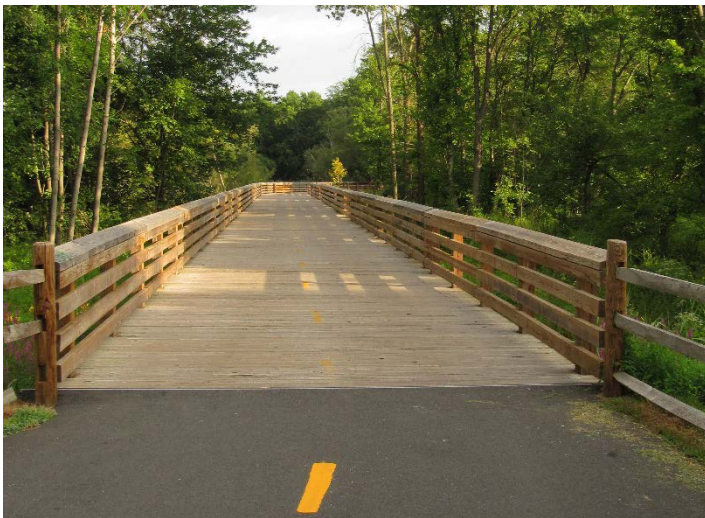
**Bruce Freeman Rail Trail | Sudbury, Massachusetts**  
**Figure 1 - Alternative Routes & Environmental Constr**  
 Source Info: Bing Maps, NHESP, FEMA, VHI

\* Based on 2015 Vernal Pool Investigation\*

Attachment 4.b: BFRT TF Recs for BOS 3.21.17 (2278 : BFRT task force recommendations)

# Recommendations: Treatments in Challenge Areas

- Challenge area (#1) south of Hudson Road (650 ft): 14-foot elevated boardwalk
- Challenge area (#2) south of North Road (1200 ft): Reduced width and retaining walls. 10-foot paved path and 1-foot shoulders.



# Roadway Intersections

- Standard Pedestrian crossing - Methods Driveway, Codjer Lane, Morse Road, and Fairview Farm Driveway
- Rectangular Rapid Flashing Beacon - Old Lancaster Road, Haynes Road, and Pantry Road
- Pedestrian Signal - Hudson Road and North Road



# Recommendations: Roadway Intersections

- Roadway Crossings
  - Hudson Road: Avoid the large overhead mast arm for signals, if possible
  - Morse Road: consider supplemental signage to slow down vehicles and bicyclists
  - Pantry Road: consider supplemental signage to slow down vehicles and design needed to allow safety vehicle access
  - Peakham Road: concern with proposed elimination of right hand turn lane; determine appropriate intersection mitigation to protect path users; conduct further investigations of impacts to traffic; possibly look at traffic data available from proposed Sudbury Station development

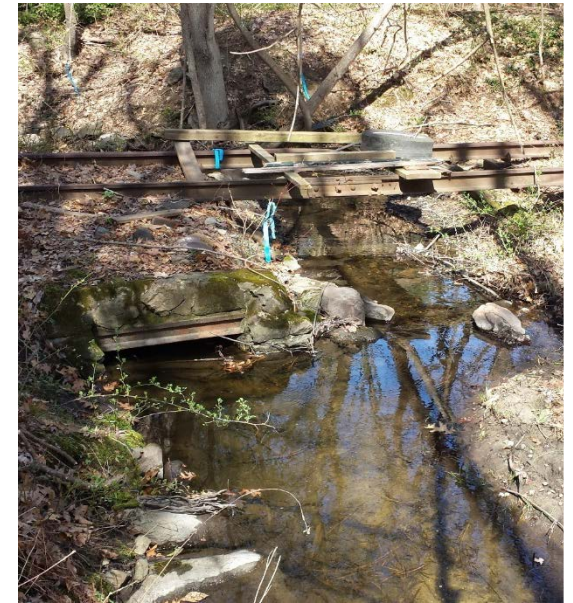
# Recommendations: Additional Investigations

In the next design phase (75%):

- Prepare natural resources technical memo consolidating information to supplement wetlands permitting process (see Concord example)
- Upgrade culverts as needed and where there are opportunities to improve the environmental condition of streams and adjacent wetlands
- Identify environmental impact mitigation options
- To extent possible reuse the exiting stones from the Pantry Brook abutments and retain the cattle passages
- Clarify if boardwalk design will meet H10 or H20 loading



4.b



Attachment 4.b: BFRT TF Recs for BOS 3.21.17 (2278 : BFRT task force recommendations)

# Recommendations: Additional Investigations

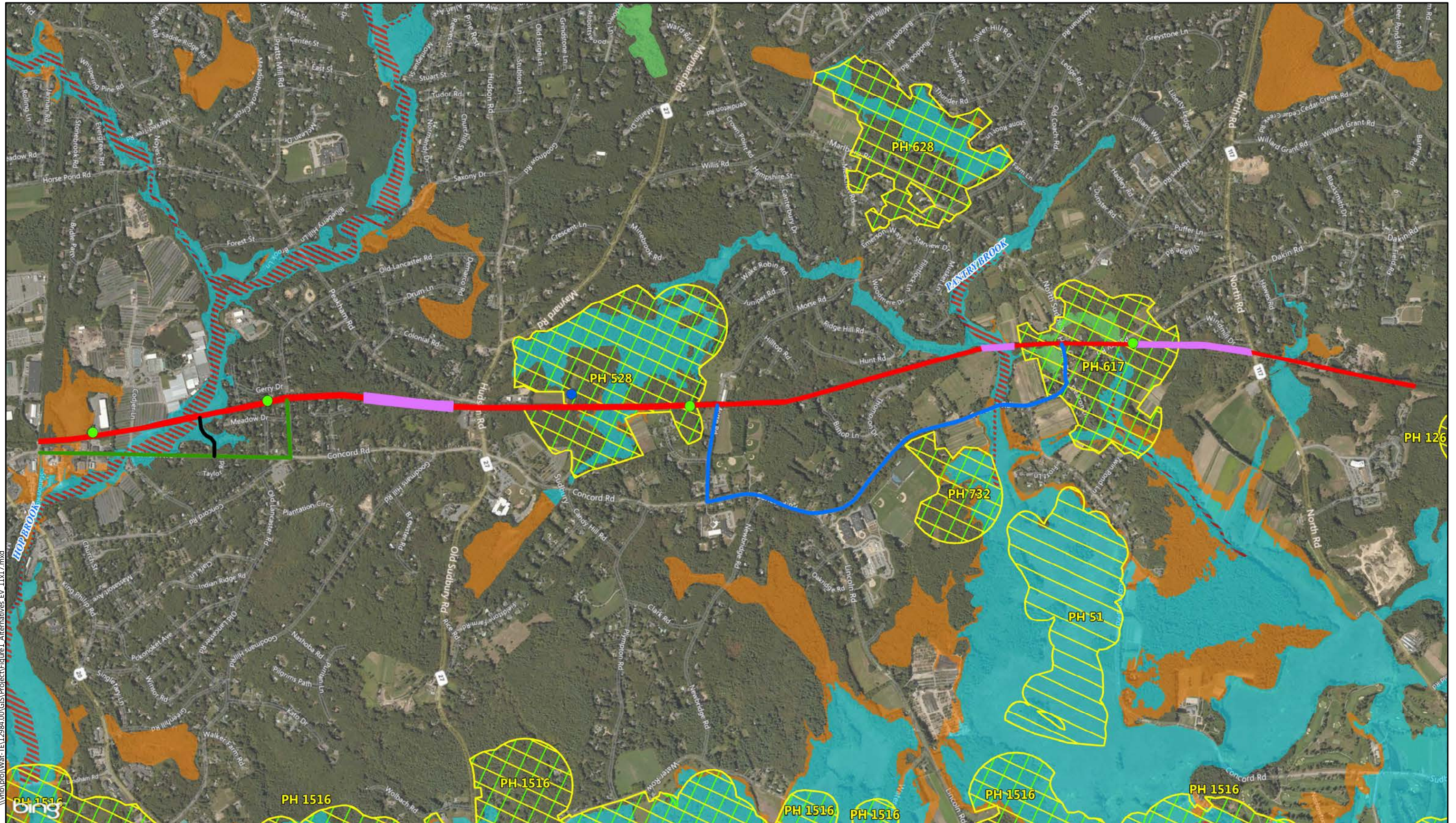
## Ongoing

- Continue to coordinate with abutters and identify suitable mitigation, in particular Cavicchio and Method's Machine
- Identify opportunities for improving the environmental condition adjacent to the corridor
- Conduct outreach to interested groups and relevant Town Committees on parking and trail interconnectivity (especially schools and Parks and Recreation Commission)
- Outreach to Chamber of Commerce and remaining business community
- Respond to comments received



# Follow Up Questions

- Seek clarification of final report expectations
- Determine next steps for Task Force



- █ Project Location
- Certified Vernal Pool\*
- Potential Vernal Pool\*
- Alternate Route 1
- Alternate Route 2
- Alternate Route 3
- NHEP Priority Habitats of Rare Species
- NHEP Estimated Habitats of Rare Wildlife
- Challenge Areas
- Regulatory Floodway
- 100-year Floodplain, with BFE
- 100-year Floodplain, no BFE
- 500-year Floodplain

Bruce Freeman Rail Trail | Sudbury, Massachusetts

**Figure 1 - Alternative Routes & Environmental Constraints**

Source Info: Bing Maps, NHEP, FEMA, VHB

\* Based on 2015 Vernal Pool Investigation\*

Attachment 4.c: BFRT TF Handouts for 3.21.17 Meeting (2278 : BFRT task force recommendations)

**Bruce Freeman Rail Trail  
Sudbury, MA  
Off-Trail Alternatives**

Alternative Ranking Matrix

2/13/2017

| Impact Criteria  | Alternative 1 – Union Avenue <sup>1</sup>      | Rank      | Alternative 2 – Concord Road <sup>2</sup>                    | Rank      | Alternative 3 – Union Avenue Hybrid <sup>3</sup>           | Rank      |
|--|--|-----------|--|-----------|--|-----------|
| 1. Farmland Impacts                                      | 0 parcels                                      | 3         | 3 parcels  | 1         | 0 parcels  | 3         |
| 2. Relocation Impacts and ROW Acquisition                | 22 parcels impacted, 5 with commercial parking | 1         | 19 parcels residential                                       | 2         | 10 parcels, 5 with commercial parking                      | 3         |
| 3. Considerations Relating to Pedestrians and Bicyclists | Provides SUP for pedestrians in business area  | 2         | Provides SUP for pedestrians to school/recreation facilities | 3         | Provides SUP for pedestrians in business area              | 2         |
| 4. Air Quality Impacts                                   | Temp minor during construction                 | 2         | Temp minor during construction                               | 2         | Temp minor during construction                             | 2         |
| 5. Noise Impacts   | Temp minor during construction                 | 2         | Temp minor during construction                               | 2         | Temp minor during construction                             | 2         |
| 6. Bridges/Culverts                                      | Widen culvert/bridge Hop Brook                 | 1         | Lengthen culvert Pantry Brook                                | 2         | Widen culvert Hop Brook                                    | 1         |
| 7. Regulatory Floodway                                   | 350 LF   | 2         | 100 LF   | 1         | 450 LF   | 3         |
| 8. 100-year Floodplain w/BFE                             | 1,250 LF                                       | 3         | 1,300 LF   | 3         | 1,900 LF   | 2         |
| 9. 100-year Floodplain no BFE                            | 0  | 3         | 1,300 LF   | 1         | 0  | 3         |
| 10. 500-year Floodplain                                  | 350 LF   | 2         | 200 LF   | 3         | 350 LF   | 2         |
| 11. Certified Vernal Pool                                | 0  | 3         | 0  | 3         | 0  | 3         |
| 12. Potential Vernal Pool                                | 0  | 3         | 0  | 3         | 1  | 2         |
| 13. NHESP Priority Habitat Rare Species                  | 0  | 3         | 625 LF   | 1         | 0  | 3         |
| 14. NHES Estimated Habitat Rare Wildlife                 | 0  | 3         | 625 LF   | 1         | 0  | 3         |
| 15. Construction Impacts                                 | Traffic delays on Union                        | 2         | Traffic delays Morse, Concord, Pantry & Haynes               | 1         | Traffic delay on Union                                     | 3         |
| 16. Visual Impacts                                       | Path along businesses                          | 2         | Path along residential lots                                  | 1         | Path along business frontage                               | 2         |
| 17. Public Utilities                                     | Guy pole impacts                               | 3         | Utility pole and guy relocations                             | 1         | Guy pole relocations                                       | 3         |
| 18. Conservation Land/Scce Road Impacts                  | None   | 3         | Scenic road impact   | 3         | Conservation Land impact                                   | 3         |
| 19. Maintenance and Operations                           | Plowing path along roadway                     | 2         | Plowing path along roadway                                   | 1         | Plowing path along roadway                                 | 3         |
| <b>Final Score</b>                                       |  | <b>45</b> |  | <b>35</b> |  | <b>48</b> |
| <b>Cost<sup>4</sup></b>                                  | (1.0322 mi) \$2.064 million                    |           | (1.7667 mi) \$3.533 million                                  |           | (0.6387 mi along road, 0.1527 mi off-road) \$1.506 million |           |

- 1 Path on west side Union Avenue
- 2 Path on east side Concord Avenue
- 3 Path on west side Union Avenue
- 4 Estimated \$2 million per mile for SUP adjacent to roadway, \$1.5 million per mile for off-road path

|   |
|---|
| 3 – Most Preferred<br>1 – Least Preferred |
|---|

Attachment 4.c: BFRT TF Handouts for 3.21.17 Meeting (2278 : BFRT task force recommendations)

Considerations for Various Trail Treatments along the Rail Road Alignment

|   |   | 10' Paved Width with 3:1 slopes |           | Rank | Boardwalk (14')   |           | Rank | Reduced Width – 8' paved; 3:1 slopes |           | Rank | 10' Paved Width with Walls/ Rip-rap |          | Rank | 8' Paved Width with Walls     |         | Rank |
|---|---|---------------------------------|-----------|------|---|-----------|------|--------------------------------------|-----------|------|-------------------------------------|----------|------|-------------------------------|---------|------|
| Permanent Wetland Impacts<br>Sta. 167+50 – 174+00 | <i>South of Hudson Road (Rt. 27) Through the majority of this section, one side of embankment is bank and the other side is BVW.</i>  | 1,840± sf                       | 2,740sf   | 5    | At footings<br>12± sf   | 112 sf    | 1    | 940± sf                              | 1,840 sf  | 4    | 630± sf                             | 1,390 sf | 3    | 290± sf                       | 950 sf  | 2    |
| Temporary Wetland Impacts<br>Sta. 167+50 – 174+00 |   | 900± sf                         |           | 4    | 100± sf   |           | 1    | 900± sf                              |           | 5    | 760± sf                             |          | 3    | 660± sf                       |         | 2    |
| Permanent Bank Impacts –<br>Sta. 167+50 – 174+00  |   | 875± ft                         |           | 3    | At footings<br>75± ft   |           | 1    | 850± ft                              |           | 4    | 850± ft                             |          | 4    | 835± ft                       |         | 2    |
| Temporary Bank Impacts –<br>Sta. 167+50 – 174+00  |   | 775± ft                         |           | 4    | 650± ft   |           | 5    | 745± ft                              |           | 1    | 815± ft                             |          | 2    | 85± ft                        |         | 3    |
| Permanent Wetland Impacts<br>Sta. 292+00-304+00   | <i>South of North Road (Rt. 117) and North of Haynes Road Through the majority of this section, both sides of the embankment are BVW. The limited bank is on both sides of a culvert.</i> | 10,800± sf                      | 16,380 sf | 5    | At footings<br>200± sf  | 12,300 sf | 1    | 5870± sf                             | 10,215 sf | 4    | 1575± sf                            | 4,425 sf | 3    | 1065± sf                      | 2,950sf | 2    |
| Temporary Wetland Impacts<br>Sta. 292+00-304+00   |   | 5,580± sf                       |           | 4    | 12,100± sf  |           | 5    | 4345± sf                             |           | 3    | 2850± sf                            |          | 2    | 1885± sf                      |         | 1    |
| Permanent Bank Impacts –<br>Sta. 292+00-304+00    |   | 27± ft                          |           | 3    | n/a   |           | 1    | 18± ft                               |           | 2    | n/a                                 |          | 1    | n/a                           |         | 1    |
| Temporary Bank Impacts –<br>Sta. 292+00-304+00    |   | 10± ft                          |           | 3    | n/a   |           | 1    | 8 ft                                 |           | 2    | n/a                                 |          | 1    | n/a                           |         | 1    |
| Floodplain Impacts                                |   | None                            |           | 1    | none  |           | 1    | none                                 |           | 1    | none                                |          | 1    | None                          |         | 1    |
| Pedestrian/Bicycle Conflicts                      |   | AASHTO minimum                  |           | 1    | AASHTO minimum  |           | 3    | Will reduce width for passing        |           | 4    | AASHTO minimum                      |          | 2    | Will reduce width for passing |         | 5    |
| Design Waiver                                     |   | Not required                    |           | 1    | Not required  |           | 1    | Will require MassDOT approval        |           | 5    | Not required                        |          | 2    | Will require MassDOT approval |         | 5    |
| Vegetation Removal                                |   |                                 |           | 5    |   |           | 3    |                                      |           | 2    |                                     |          | 4    |                               |         | 1    |
| Emergency Response Time                           |   | --                              |           | 1    | would be reduced<br>Boardwalk would be designed to meet H10 loading |           | 3    | would be reduced                     |           | 4    | --                                  |          | 2    | would be reduced              |         | 5    |
| Law Enforcement Response time                     |   | --                              |           | 1    | would be reduced<br>Boardwalk would be designed to meet H10 loading |           |      | would be reduced                     |           | 4    | --                                  |          | 2    | would be reduced              |         | 5    |
| Construction Costs                                |   |                                 |           | 3    | \$215/sf  |           | 5    | -                                    |           | 1    | \$75/sf                             |          | 4    |                               |         | 2    |
| Maintenance Costs                                 |   | --                              |           | 2    | --  |           | 5    | --                                   |           | 1    | --                                  |          | 2    | --                            |         | 1    |

Rank: 1= least impactful, 5= most impactful

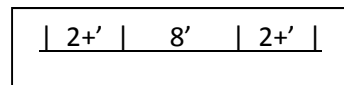
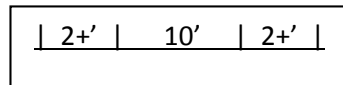
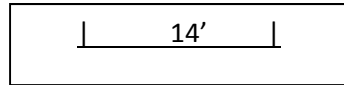
(Wetland Resource Impact Estimates are preliminary and provided for Identified Challenge Areas)

Attachment 4.c: BFRT TF Handouts for 3.21.17 Meeting (2278 : BFRT task force recommendations)

### Considerations for Various Trail Treatments along the Rail Road Alignment

To Meet a Goal of Avoiding a Variance of the Wetlands Protection Act the Following Three Options Are Under Consideration

(Based on Preliminary Wetland Resource Impact Estimates and only quantified for Identified Challenge Areas)



| OPTION 1 = 3,062+ sf                              |  | Boardwalk (14')<br>14' of decking- railing to railing |        | 10' Paved Width with Walls/ Rip-rap and railings |  | 8' Paved Width with Walls and railings |         |
|---|--|---|--------|--|--|--|---------|
| Permanent Wetland Impacts<br>Sta. 167+50 – 174+00 | <i>South of Hudson Road (Rt. 27) - 650 ft</i><br>Through the majority of this section, one side of embankment is bank and the other side is BVW.   | At footings<br>12+ sf                                 | 112 sf |  |  |  |         |
| Temporary Wetland Impacts<br>Sta. 167+50 – 174+00 |  | 100+ sf   |        |  |  |  |         |
| Permanent Wetland Impacts<br>Sta. 292+00-304+00   | <i>South of North Road (Rt. 117) and North of Haynes Road - 1200 ft</i><br>Through the majority of this section, both sides of the embankment are BVW. The limited bank is on both sides of a culvert. |   |        |  |  | 1065+ sf                               | 2,950sf |
| Temporary Wetland Impacts<br>Sta. 292+00-304+00   |  |   |        |  |  | 1885+ sf                               |         |

| OPTION 2 = 3,900+ sf                              |   | Boardwalk (14') |  | 10' Paved Width with Walls/ Rip-rap |  | 8' Paved Width with Walls |         |
|---|---|-----------------|--|-------------------------------------|--|---------------------------|---------|
| Permanent Wetland Impacts<br>Sta. 167+50 – 174+00 | <i>South of Hudson Road (Rt. 27) - 650 ft</i><br>Through the majority of this section, one side of embankment is bank and the other side is BVW.                            |                 |  |                                     |  | 290+ sf                   | 950 sf  |
| Temporary Wetland Impacts<br>Sta. 167+50 – 174+00 |   |                 |  |                                     |  | 660+ sf                   |         |
| Permanent Wetland Impacts<br>Sta. 292+00-304+00   | <i>South of North Road (Rt. 117) 1200 ft</i><br>Through the majority of this section, both sides of the embankment are BVW. The limited bank is on both sides of a culvert. |                 |  |                                     |  | 1065+ sf                  | 2,950sf |
| Temporary Wetland Impacts<br>Sta. 292+00-304+00   |   |                 |  |                                     |  | 1885+ sf                  |         |

| OPTION 3 = 4,537+ sf                              |   | Boardwalk (14')       |        | 10' Paved Width with Walls/ Rip-rap |  | 8' Paved Width with Walls |          |
|---|---|-----------------------|--------|-------------------------------------|--|---------------------------|----------|
| Permanent Wetland Impacts<br>Sta. 167+50 – 174+00 | <i>South of Hudson Road (Rt. 27) - 650 feet</i><br>Through the majority of this section, one side of embankment is bank and the other side is BVW.                              | At footings<br>12+ sf | 112 sf |                                     |  |                           |          |
| Temporary Wetland Impacts<br>Sta. 167+50 – 174+00 |   | 100+ sf               |        |                                     |  |                           |          |
| Permanent Wetland Impacts<br>Sta. 292+00-304+00   | <i>South of North Road (Rt. 117) - 1200 feet</i><br>Through the majority of this section, both sides of the embankment are BVW. The limited bank is on both sides of a culvert. |                       |        | 1575+ sf                            |  |                           | 4,425 sf |
| Temporary Wetland Impacts<br>Sta. 292+00-304+00   |   |                       |        | 2850+ sf                            |  |                           |          |

Attachment 4.c: BFRT TF Handouts for 3.21.17 Meeting (2278 : BFRT task force recommendations)

## Bruce Freeman Rail Trail Design Task Force

### Rail Corridor Treatment Options in Wetlands Challenge Areas

(Approved by the BFRT Design Task Force on March 29, 2017)

The Conservation Commission approved the wetlands resource area delineation by issuing an Order of Resource Area Delineation in November 2016. Following this determination, two wetland challenge areas —650 sf of trail South of Hudson Road and 1200 sf of trail South of North Road--were identified where the standard path width could not be accommodated without impacting adjacent wetlands. The Design Team estimated the preliminary wetland resource impacts for the two wetlands challenge areas. If a project exceeds a total of 5000 sf of temporary and permanent impacts to Bordering Vegetated Wetlands (BVW) then it requires a Variance from the Wetlands Protection Act (WPA) and thereby an Environmental Impact Report (EIR) under the Massachusetts Environmental Policy Act (MEPA) process. It is a priority of the Task Force, MassDOT, and the Conservation Commission that the project avoid a Variance and EIR. This priority is balanced with the desire of the safety personnel, DPW staff (responsible for maintenance), and path users to have a safe, standard width for the trail.

Based on a Matrix, entitled *Considerations for Various Trail Treatments along the Rail Road Alignment (To meet the goal of avoiding a variance of the Wetlands Protection Act)*, distributed by the Design Team and utilized at BFRT Design Task Force Meetings, a MassDOT meeting, and a Conservation Commission meeting, there are three options to be considered that deviate from the standard 10-foot paved path but are approved by MassDOT to avoid the WPA variance requirement.

Option 1: 14-foot boardwalk for challenge area South of Hudson Road and an 8 foot paved with 2 foot shoulders or 10 foot paved with 1-foot shoulders and retaining walls for challenge area South of North Road. This option estimates the least amount of impacts to BVW at 3062 sf.

Option 2: 8 foot paved with 2-foot shoulders or 10 foot paved with 1-foot shoulders (2A) and retaining walls for both challenge areas. This option estimates 3900 sf of impacts to BVW.

Option 3: 14-foot boardwalk with railings for challenge area South of Hudson Road and 10 foot paved with 2-foot shoulders and retaining walls South of North Road. This option estimates 4537 sf of impacts to BVW.

The Recommendation of the Task Force is for Option 1A:

- Challenge Area south of Hudson Road (650 ft): 14-foot elevated boardwalk
- Challenge Area south of North Road (1200 ft): Reduced width and retaining walls. 10-foot paved path and 1-foot shoulders

MassDOT has indicated they will allow the option of a 10-foot paved with 1 foot (reduced width) shoulders, Option 1A, rather than 8 foot path with 2 foot shoulders (Option 1). Resource impacts are

*Rail Corridor Treatment Options in Wetlands Challenge Areas  
March 29, 2017 BFRT Design Task Force Meeting*

equivalent between these Options 1 and 1A. MassDOT also agreed to allow the boardwalk option (14-foot wide with railings).

DPW indicated they are willing to accept the boardwalk construction, although additional maintenance may be required. The boardwalk is a higher cost construction item and MassDOT has agreed to accept construction costs. Boardwalk reconstruction and repavement of the trail are eligible for state and federal construction funding. At the time the boardwalk reaches the end of its lifespan, the Town may seek state and federal funding to reconstruct the boardwalk through the TIP process. Placing the boardwalk option in the 25% design is advantageous, as it is a higher cost treatment option. It will be easier for MassDOT to estimate and incorporate this cost into the project at the 25% stage than at a later design stage.

The Task Force realizes the environmental permitting process will influence the outcome of the treatment selection in jurisdictional areas. Discussion occurred amongst Task Force members about whether the Task Force needed to specify an alternate treatment for challenge areas or if this could be left to the WPA/NOI process at a much later date. At this time, a treatment for the whole corridor is needed to advance the design to 25%. It was recognized the treatment may be modified in the permitting process, but the Town needs to give the designers a specified width to design all sections at the 25% stage.

The Conservation Commission discussed the boardwalk option at their meeting but no consensus on pursuing the boardwalk was found (although this has the lowest impact to BVW for the area South of Hudson Road). The Task Force members did not achieve consensus on this recommendation, but the two outlying votes understood that the project needs to advance and Option 1A is not a bad one. One concern recognized is that the three options under consideration focused on BVW impacts and there are other resources that will be considered at later stages of the process.

Additional wetlands resources will be impacted through the trail construction. Bank impacts for the challenge areas have been estimated and were presented in an earlier Matrix. Impacts to other resources such as Land Under Water, Bordering Land Subject to Flooding and Riverfront Area have not yet been estimated.

The boardwalk and narrowed cross section of option 1A will require that bump outs be added every 300 or so feet to allow passage of emergency vehicles, if warranted. The bicycle user or pedestrian on the trail would safely position themselves in these bump out locations for an emergency or maintenance vehicle to pass. The resource impacts of these bump out locations have not yet been factored into the estimates. Additionally, minor impacts to BVW may occur where culverts and the Pantry Brook Bridge will be replaced, and these have not yet been estimated.