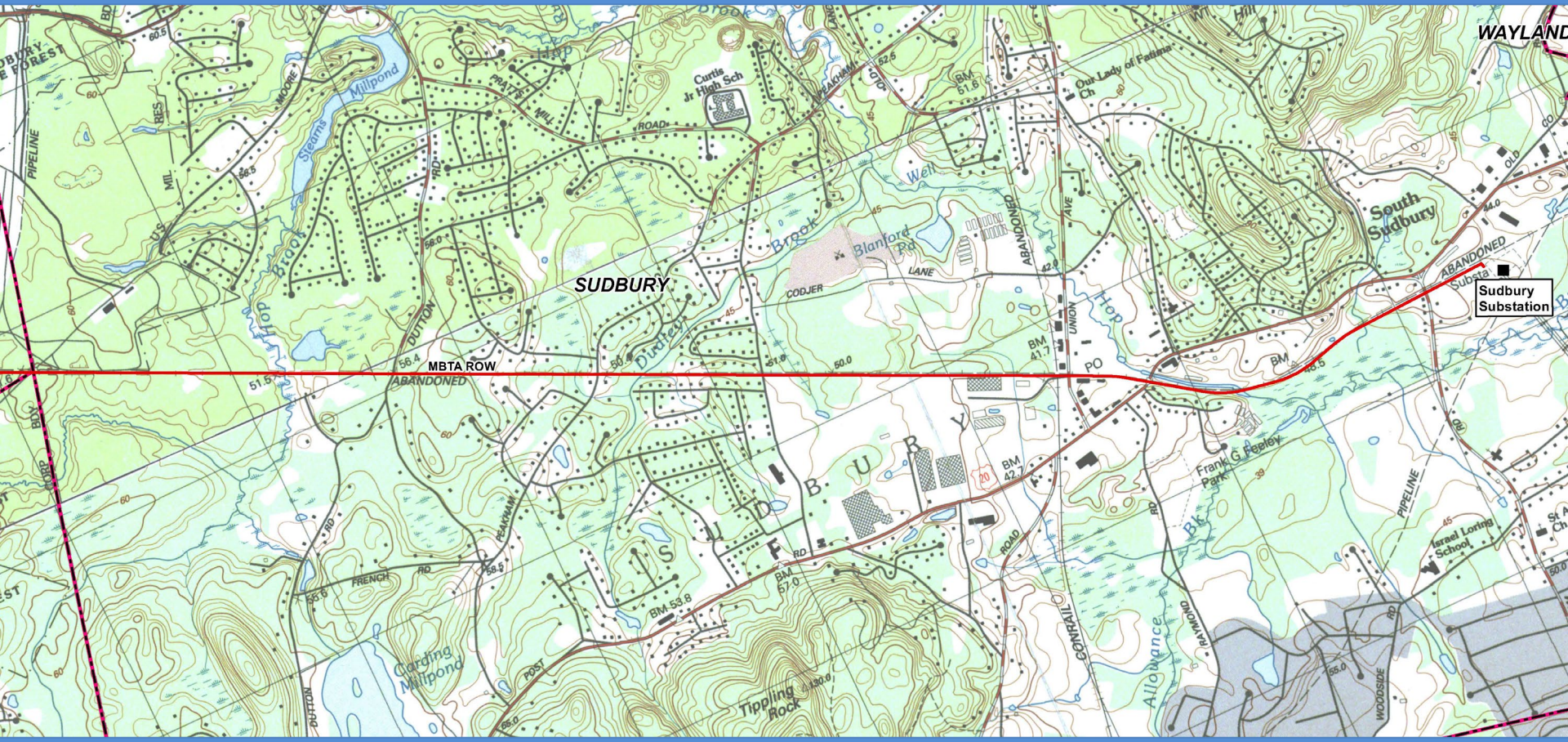
Sudbury-Hudson Transmission Reliability and Mass. Central Rail Trail Project

Sudbury Conservation Commission Public Hearing

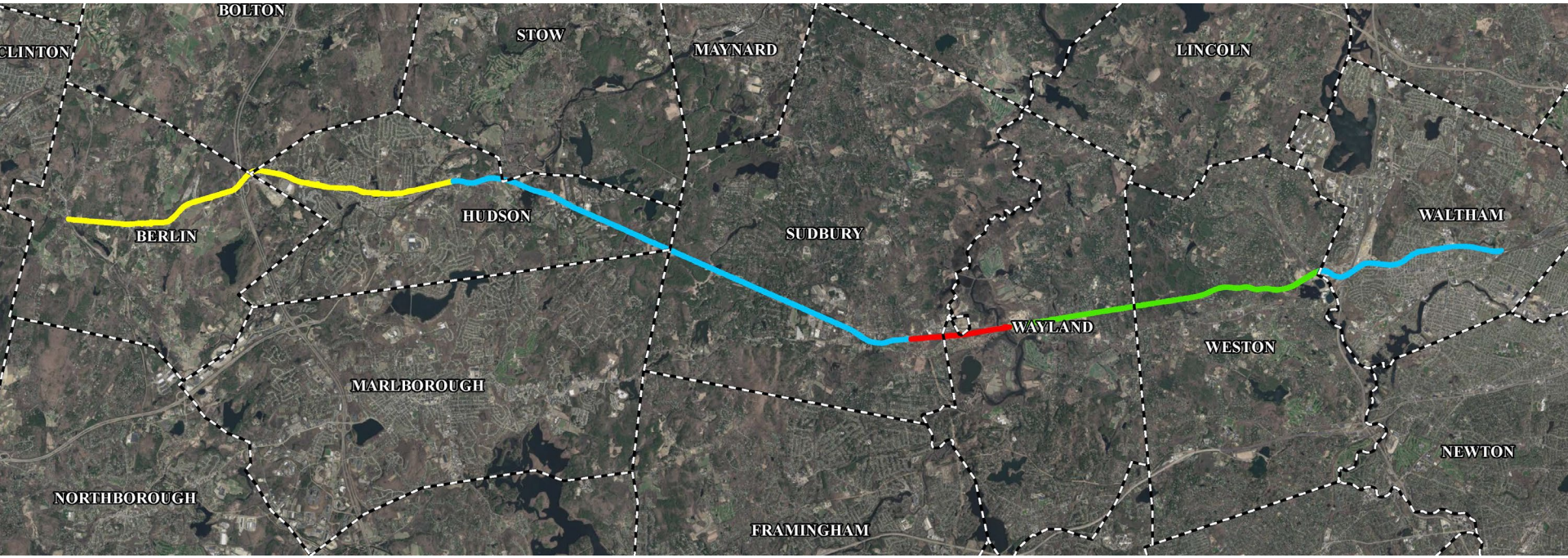
April 13, 2020



Project Overview

- Joint filing - Eversource and the Massachusetts Department of Conservation and Recreation to construct the Sudbury to Hudson Transmission Reliability and Mass Central Rail Trail ("MCRT") Project
- Two compatible uses in a single existing former rail corridor
- Phased construction sequence avoids and minimizes impacts to wetlands
- Entire Project in Sudbury, Marlborough, Stow, and Hudson = ~ 9 miles
- Underground transmission line increases reliability of existing regional electric transmission system
- MCRT – enhances public recreation and access in a dedicated route

MCRT-Wayside Section Overview Map

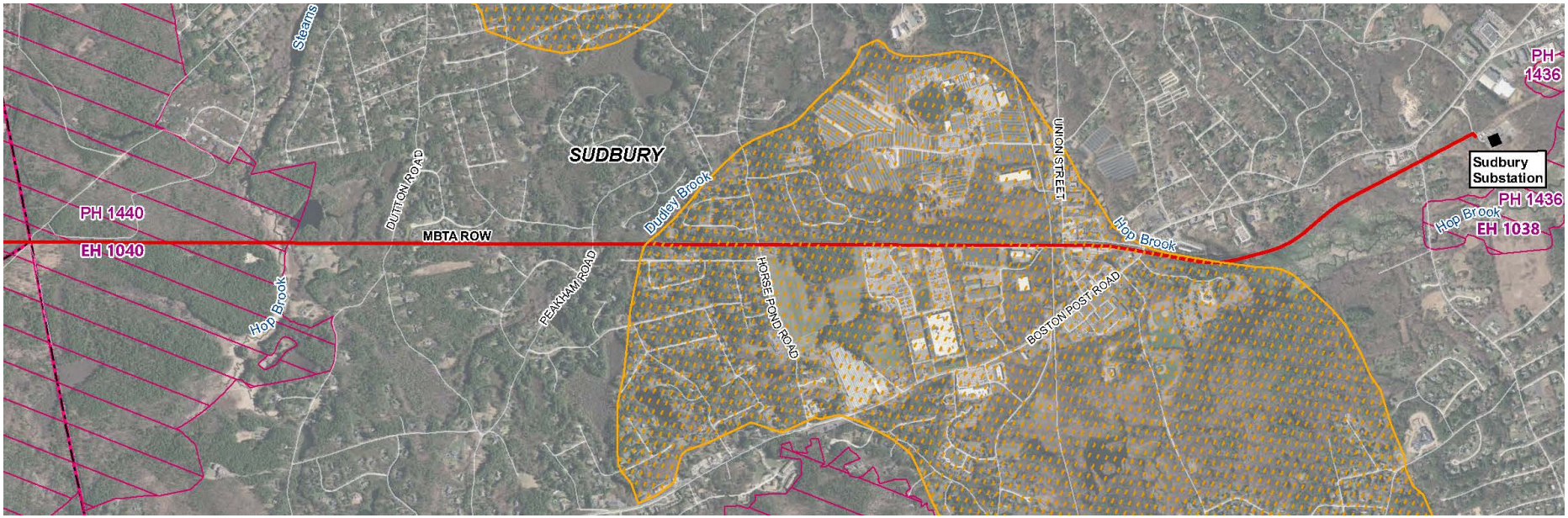


Legend

- Town Boundaries
- Constructed 2018
- Construction Anticipated
- Design Schedule Unknown
- In Design by DCR Construction Unknown

Mass Central Rail Trail
Berlin to Waltham, Massachusetts

Project Locus Map/Existing Conditions



- Project in Sudbury = approximately 4.3 miles long
- Crosses 2 state (MWPA) perennial streams – Hop Brook and Dudley Brook
- **Mapped Priority Habitat** for state-listed species from Hudson/Sudbury town line to just east of Hop Brook (approximately 4,000 linear feet)
- Portion of Project located within the **Zone II Wellhead Protection Areas** of municipal public wells (1,770 to 3,500 feet from any wellhead)

Existing Conditions

Looking east down Project Site with a berm on the left side of the photo
(See sheet 47, STA 403+15 in Attachment B of NOI)

Existing Conditions

Looking west down Project Site near Wetland 40 between Dutton Road and Hop Brook (Bridge 128)
(See sheet 49, STA 413+80 in Attachment B of NOI)

Existing Conditions

Looking east down Project Site within RFA/AURA between Boston Post Road and Hop Brook
(See sheet 64, STA 717+85 in Attachment B of NOI)

Overview of Studies/Investigations Completed for Project

- Wetland Delineation (ORAD - Attachment F)
- State-Listed Species Surveys – "No Take" from MNHESP (Attachment G)
  - Turtle surveys/tracking (including nesting surveys)
  - Vegetative cover type mapping
- Detailed Wildlife Habitat Evaluations (Attachment J)
- Stormwater Management Study/Report (Attachment L)
- Vernal Pool Investigations (three breeding seasons)
- Environmental Desktop Assessment
- Subsurface Assessments
  - Geotechnical
  - Soil/Groundwater Characterization

General Construction Sequencing - Phase 1 Overview

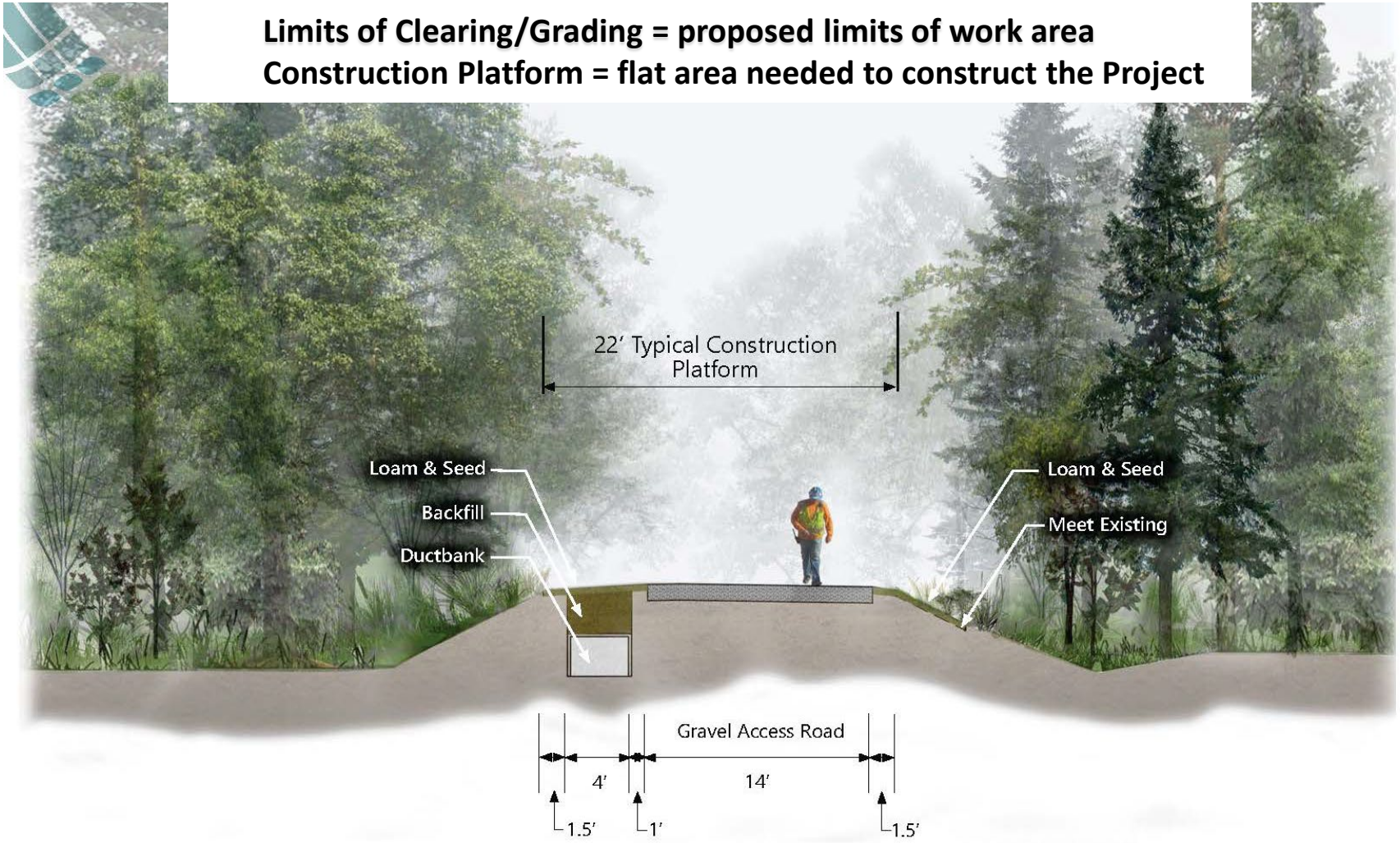
- Finalize Stormwater Pollution Prevention Plan (SWPPP)
- Contractor will identify laydown/staging areas proximate to work areas (outside of jurisdictional areas)
- Site preparation (installation of all erosion controls and other proposed best management practice features)
- Vegetation removal
- Removal of rails and ties
- Grading of construction platform and installation of stormwater management features
- Preparation of wetland replication area

General Construction Sequencing (cont.) - Phase 1 Overview

- Replace Bridge 127, rehabilitate Bridge 128, remove debris and/or vegetation from culvert 127I, drainage structure 127H, culvert 126B, and drainage pipe 126A, extend existing drainage pipe 125B, and replace drainage pipe 127A
- Installation of duct bank and manhole system
- Installation of new equipment at Sudbury Substation
- Installation of electrical and signal conduit for MCRT at roadway crossings
- Cable pulling, splicing, testing and commissioning
- Restoration (native seed mix, woody plantings, and wildlife habitat features)
- Final grading of gravel base for MCRT

Proposed Construction Conditions Phase 1 - Eversource

Limits of Clearing/Grading = proposed limits of work area
Construction Platform = flat area needed to construct the Project

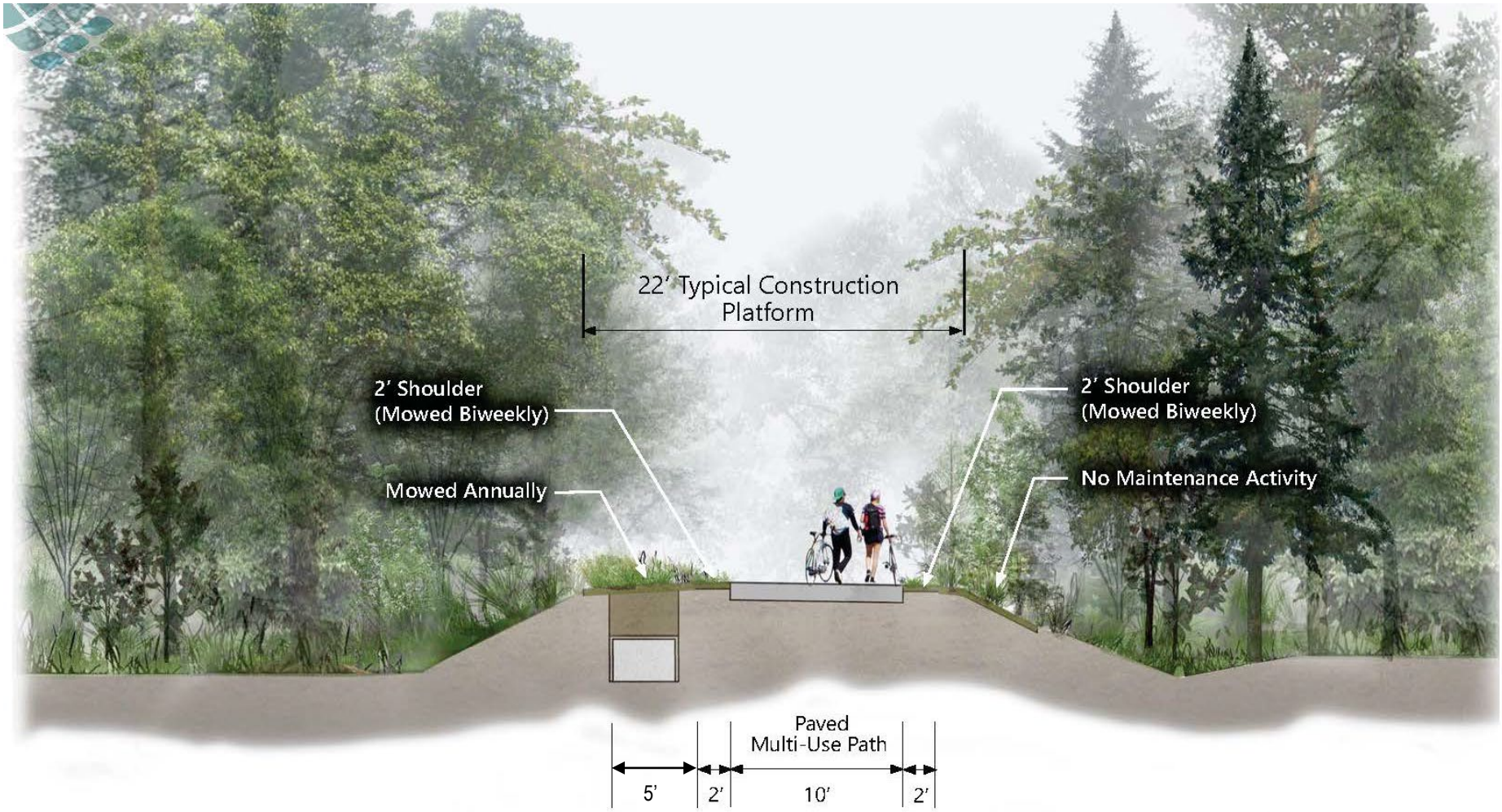


- **Construction platform either 18' or 22' wide except at manhole locations where it is 40' wide**
- **22' construction platform allows for efficient and safe two-way construction traffic**

General Construction Sequencing - Phase 2 Overview

- Maintain erosion and sediment controls
- Final grading and compacting gravel base
- Paving MCRT and turnouts
- Installation of posts and mast arms at road crossings
- Installation of detectable warning panels at road crossings, fences, benches, and bike racks
- Installation of additional woody vegetation plantings
- Loaming and seeding shoulders, side slopes, and any other disturbed areas
- Installation of roadway and trail markings and signs
- Removal of erosion and sediment controls once approved by the environmental monitor

Phase 2 Construction/Operations and Maintenance-DCR



- **O&M includes invasives species management - mechanical method preferred measure**
- **No standard vegetation maintenance outside of 19-foot-wide corridor that includes 10-foot-wide MCRT, two-foot-wide MCRT shoulders, and five-foot-wide duct bank**

Construction Related BMP's Phase 1 and Phase 2

- Erosion and Sediment Controls
  - Timber mats for cranes and turbidity controls at Hop Brook
  - Syncopated silt fence within Estimated/Priority Habitat areas and within 450 feet of a vernal pool
  - Silt fence/compost filter tube combination in all other areas
  - Jute mesh erosion control blankets
  - Use appropriate BMPs to control sedimentation during dewatering
- Spill Prevention Control and Countermeasure Plan (Attachment I)
- Stormwater Pollution Prevention Plan
- Invasive species control (equipment inspections)
- Full time environmental monitors during construction

Restoration and Mitigation Strategies

TIME OF YEAR RESTRICTIONS FOR WILDLIFE

- Black racer: no construction within 100 feet of a black racer hibernaculum from November 1 to March 31
- Coldwater Fishery Resources: no active in-stream work in Hop Brook from October 1 to June 30
- Whip-poor-will: no construction in mapped areas during nesting season (May to July 31)
- Eastern Box turtle: no work near known hibernaculum from October 31 to March 31 and in areas identified for active turtle nesting in June and July. Full-time turtle biologists serve as monitors during construction. Continue to track turtles.
- Vernal Pools: no work within 450 feet of a documented certifiable vernal pool from March 1 to May 14

Restoration and Mitigation Strategies (cont'd)

- Revegetation of all disturbed areas outside bike path with native species
- Wildlife habitat features restored
  - Reinstallation of standing dead trees (snags) removed during construction
  - Create brush piles to replace large woody debris removed during construction
  - Revegetate disturbed areas within RFA of Hop Brook and within Priority Habitat with native species through combination seed mix and woody plantings
  - Bridge 128 - Logs removed within one meter of water surface will be replicated

Overview of Soil and Groundwater Management Plan for Construction

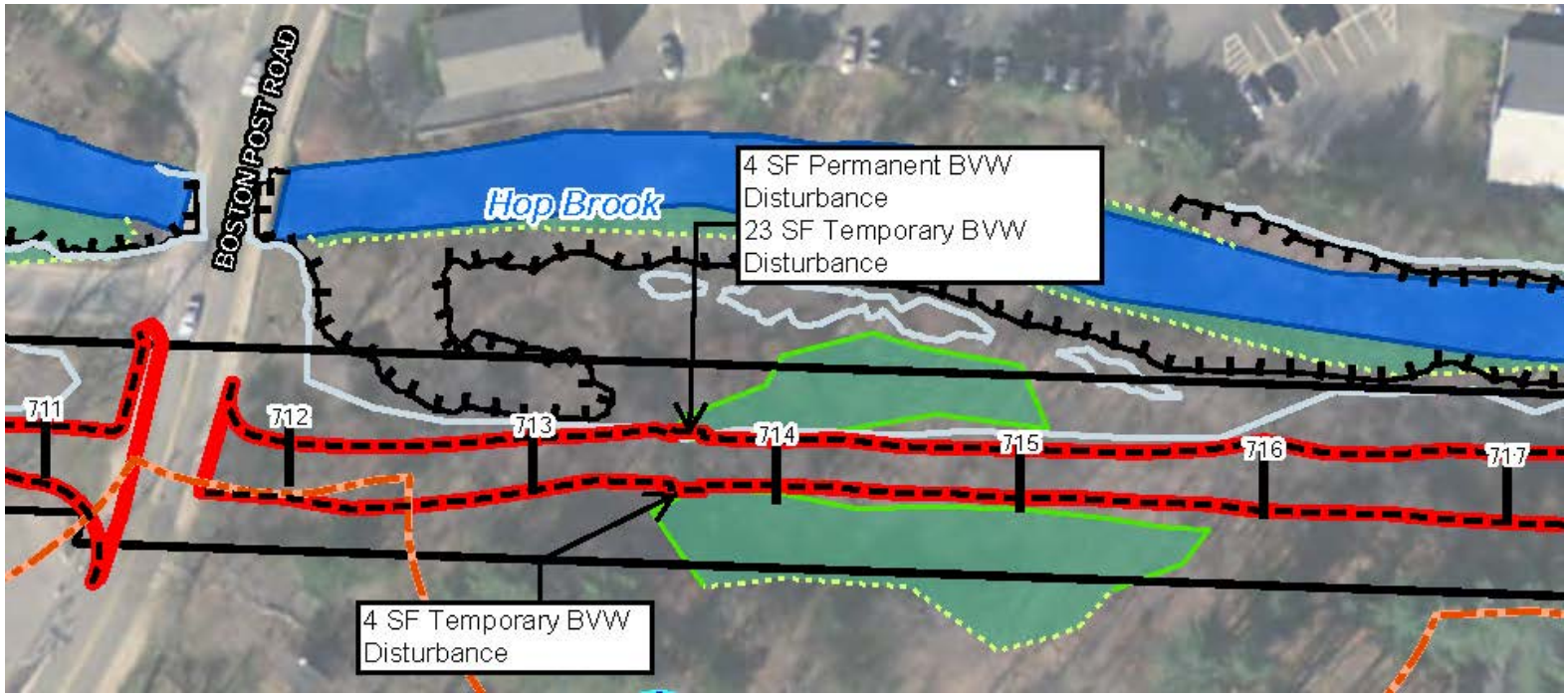
- Soil and groundwater characterization conducted along ROW in 2018 in accordance with MassDEP's confirmation to follow guidance document *Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails*
  - Completed desktop analysis of land uses along entire rail corridor
  - Targeted soil testing: 29 Sudbury samples analyzed following MassDEP Policy #COMM-97-001
  - Targeted groundwater testing: 3 Sudbury samples analyzed
- Site-specific Soil and Groundwater Management Plan will be developed prior to commencement of construction
- Eversource will engage a third-party LSP to ensure compliance with the Massachusetts Contingency Plan (310 CMR 40.0000)

Regulatory Compliance- Limited Project Status

- Both Project components qualify for limited project status
- 310 CMR 10.53(3)(d) = "construction, reconstruction, operation, and maintenance of underground or overhead public utilities"
  - Using best available measures to minimize adverse effects during construction
  - Substantially restoring surface vegetation and contours
- 310 CMR 10.53(6) = "construction, rehabilitation, and maintenance of footpaths, bike paths, and other pedestrian/non-motorized vehicle access"
  - Design utilizes existing disturbed areas and minimizes adverse impacts
  - Width of pavement for bike path is limited to 10-feet
  - No work within a vernal pool and no impediments to movement of wildlife
- Work in state RFA also qualifies for 310 CMR 10.58(5) - redevelopment of previously developed and degraded RFA that improves existing conditions

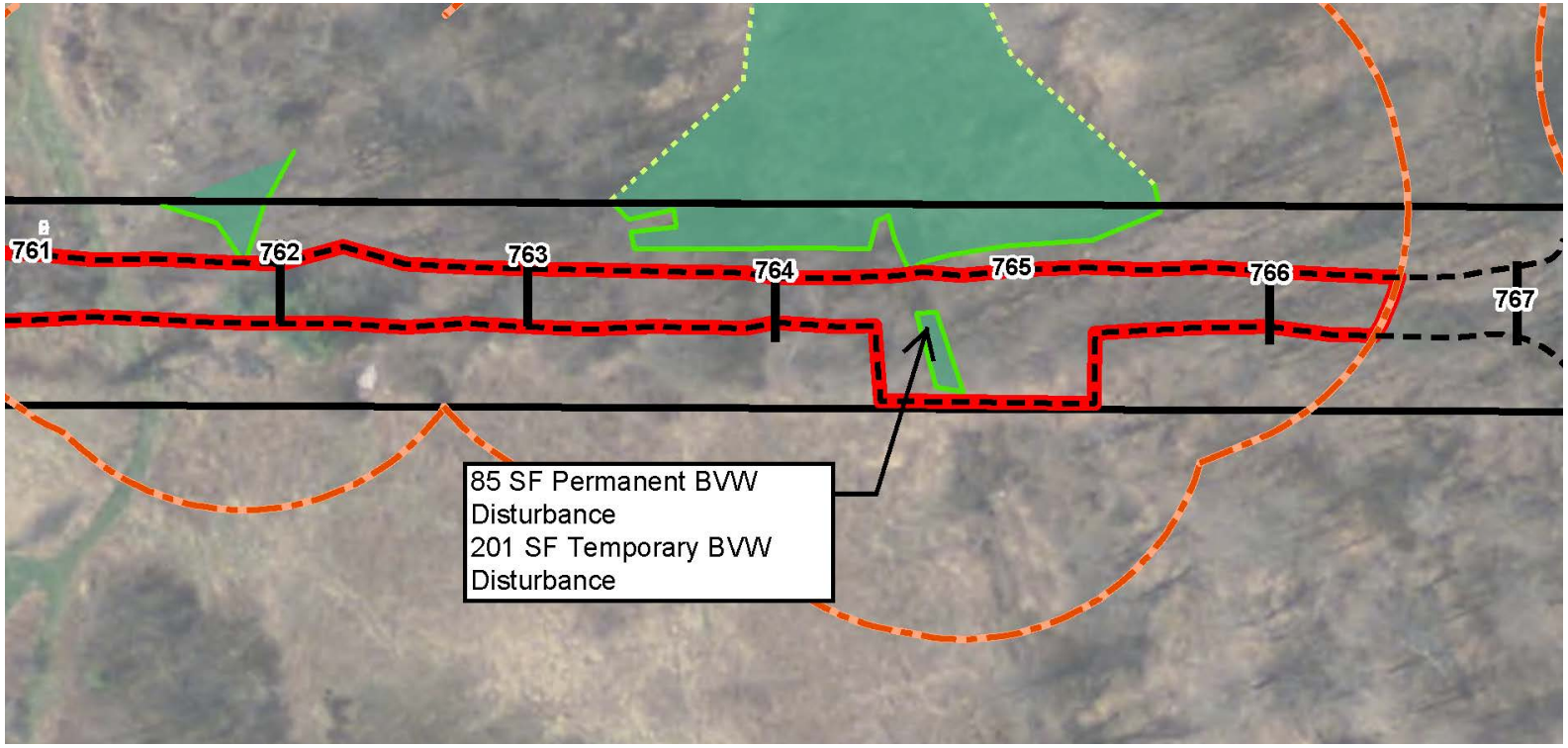
Proposed Activities/Compliance- Bordering Vegetated Wetland

- 89 square feet of permanent impact and 524 temporary impact in Sudbury
  - 4 SF permanent, 27 SF temporary from replacing headwall and drainage pipe at BVWs 18 and19 (shown below)
  - 296 SF temporary from crane mats (timber mats) to facilitate replacement of Bridge 127 (not shown)

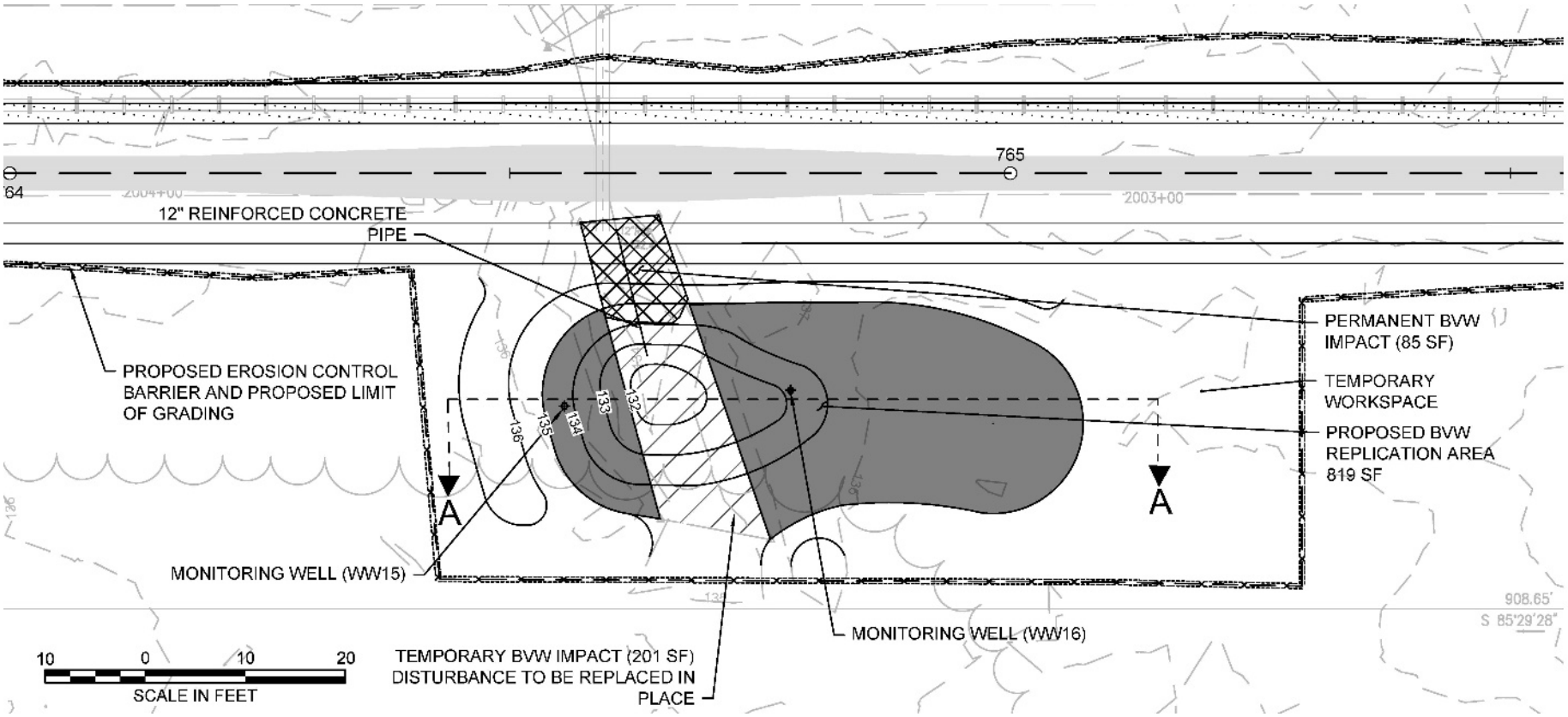


Proposed Activities/Compliance- Bordering Vegetated Wetland (cont'd

- 85 SF of permanent, 201 SF of temporary at BVW 4 (shown below)
- Replication area surrounds the area of temporary BVW 4 disturbance
- Wetland replication area includes mitigation for 303 SF of IVW disturbance



BVW and IVW Replication Area



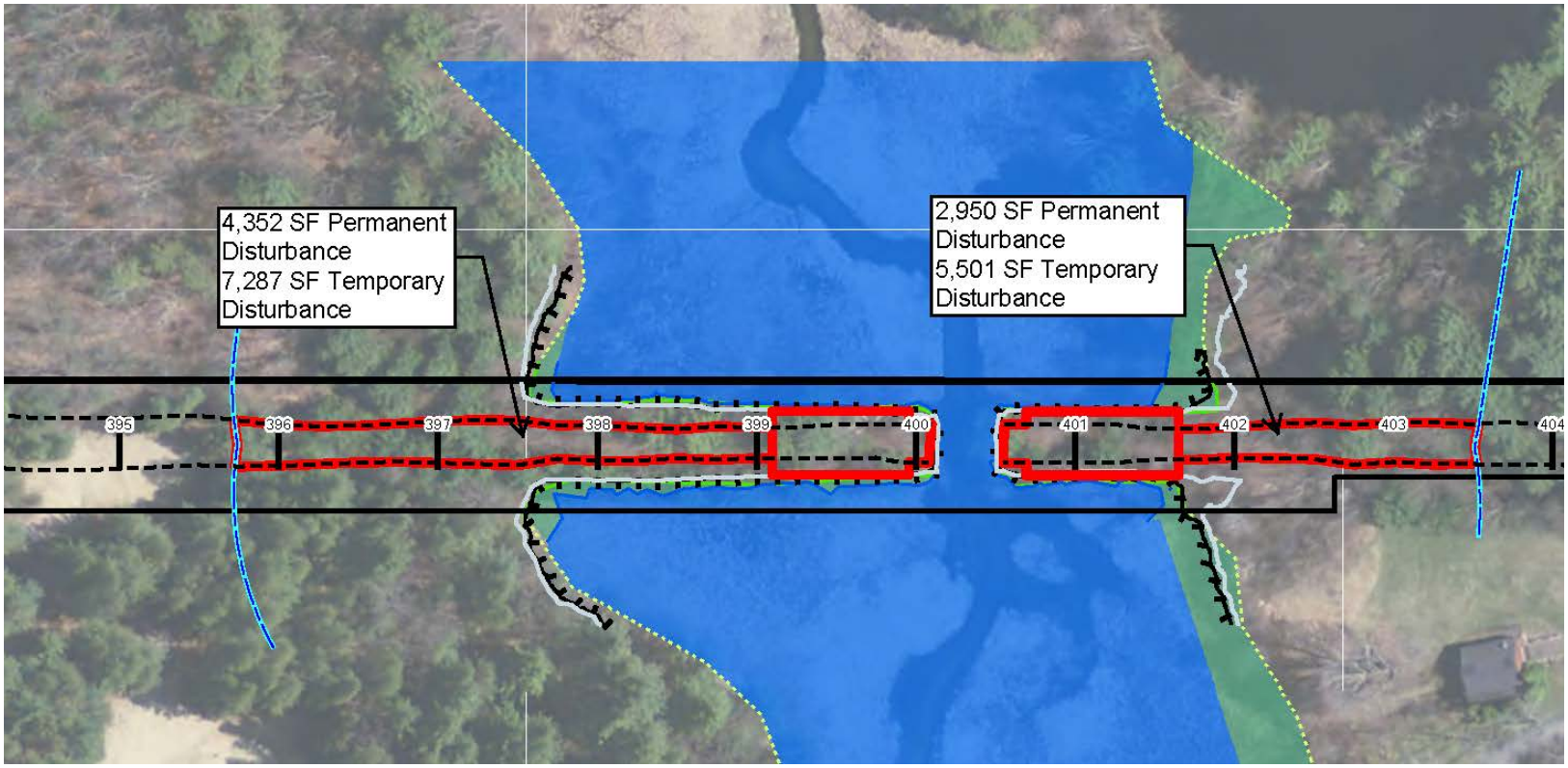
- Replicating for permanent BVW and IVW impacts at over 2:1
  - 819 sf replication area proposed for 388 sf BVW/IVW lost

Proposed Activities/Compliance-Riverfront Area (MWPA and Bylaw)

- Two different types of RFA within Project Locus
  - Three RFAs are State (MWPA) and Bylaw = both Hop Brook crossings and Dudley Brook
    - Station 395+71 to 403+52: Associated with Hop Brook crossing west of Dutton Road
    - Station 533+85 to 543+57: Associated with Dudley Brook
    - Station 705+30 to 749+45: Associated with Hop Brook east of Route 20
  - Six RFAs are Bylaw-only = streams not considered perennial under MWPA
    - Station 514+98 to 520+31: Associated with an unnamed stream
    - Station 525+25 to 529+45: Associated with an unnamed stream
    - Station 558+06 to 562+94: Associated with an unnamed stream
    - Station 585+30 to 595+15: Associated with an unnamed stream
    - Station 600+56 to 705+30: Associated with unnamed Hop Bk tributary at Station Rd
    - Station 749+45 to 749+55: Associated with an unnamed stream

Proposed Activities/Compliance-Riverfront Area

- Hop Brook RFA at Bridge 128
  - Improves conditions in previously developed RFA
  - Permanent – limited to replacement of rail and ties with paved MCRT

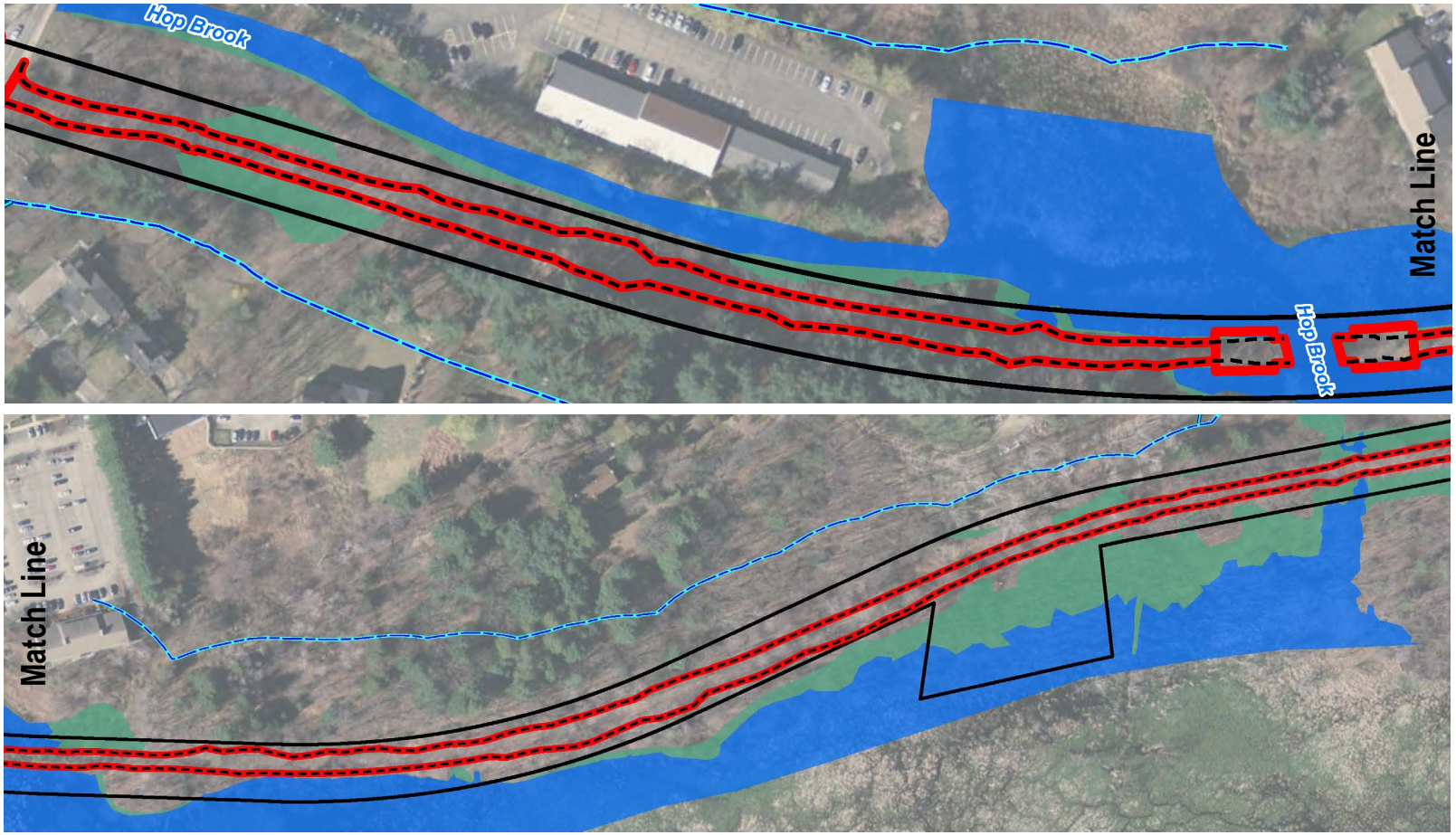


Existing Conditions - Hop Brook Bridge 128

Looking east at existing Bridge 128
(See sheet 47, STA 400+05 in Attachment B of NOI)

Proposed Activities/Compliance- Riverfront Area

- Hop Brook RFA at Bridge 127
  - Improves conditions in previously developed RFA
  - Permanent – limited to replacement of rail and ties with paved MCRT

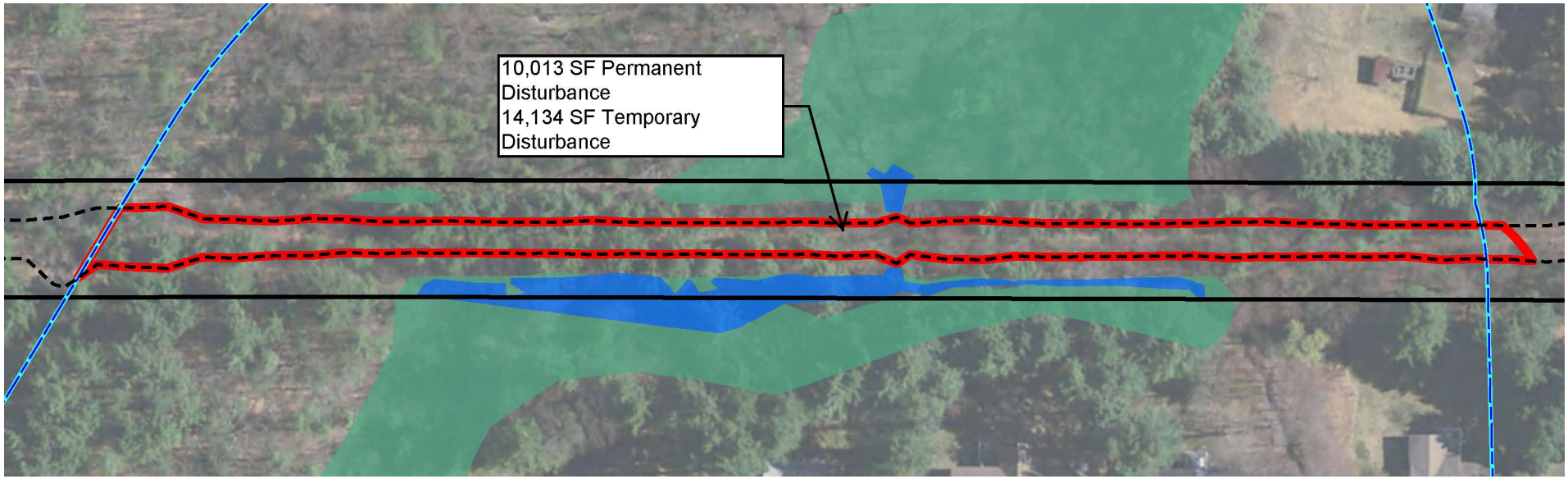


Existing Conditions - Hop Brook RFA

Looking west at existing Bridge 127 that will be replaced
(See sheet 65, STA 725+75 in Attachment B of NOI)

Proposed Activities/Compliance- Riverfront Area

- Dudley Brook RFA
  - Improves conditions in previously developed RFA
  - Permanent – limited to replacement of rail and ties with paved MCRT
  - Culverted beneath railroad embankment (existing culvert will remain in place)



Performance Standards Compliance- Riverfront Area 10.58(5)

- Project complies with MWPA performance standards for redevelopment within previously developed RFA
  - Previously developed RFA within railroad ROW
  - Previously degraded RFA is 11 feet wide (rails, ties, and ballast)
- 10-foot-wide MCRT is entirely within footprint of previously degraded area
- All temporarily disturbed areas will be restored with native vegetation
- Project will result in an improvement over existing conditions within RFA
  - Reduce total amount of degraded area
  - Removes rails, which are a barrier to wildlife
- No adverse effects to rare species
- Project complies with the Stormwater Management Standards

Proposed Activities- Bordering Land Subject to Flooding

- Activities proposed within three areas of BLSF
  - Hop Brook (Bridge 128): Temporary impacts only from crane mats (See Attachment B, Sheet 47, Station 399+24 to 401+65)
  - Unnamed Tributary to Hop Brook: net gain of 6.13 cubic yards of flood storage (See Attachment B, Sheets 62-63, Station 702+18 to 710+52)
  - Hop Brook (Bridge 127): net gain of 72.33 cubic yards of flood storage (See Attachment B, Sheets 64-65, Station 713+57 to 729+26)
- Performance standards compliance – 310 CMR 10.57(4)(a)
  - Compensate for lost flood storage - Project results in net gain of 78.46 cubic yards of storage
  - Project will not restrict flows and will not result in an increase in flood stage or velocity
  - Project will not impair capacity of the BLSF to provide important wildlife habitat functions
    - Determined per detailed Wildlife Habitat Evaluation procedures at 310 CMR 10.60

Proposed Activities- Bank and Land Under Water Bodies and Waterways

- All impacts to Bank and LUWW occur at Bridge 127
  - No permanent impacts to Bank or LUWW
  - All temporary impacts are from placement of crane mats
  - Crane mats will be in place for minimum duration and will be installed and removed outside of the time of year restriction for coldwater fisheries (October 1 – June 30)
  - Resource areas will be restored upon completion of the bridge work
- Bank Performance standards compliance – 310 CMR 10.54(4)
- LUWW Performance standards compliance – 310 CMR 10.56(4)
  - Work will not impair ground or surface water, the physical stability of the bank, the water carrying capacity of Hop Brook, fisheries habitat, or wildlife habitat functions
  - Debris containment and erosion control measures will be in place
  - Bank restoration includes woody plantings and native seed mix
  - LUWW restoration includes aquatic plantings

Regulatory Compliance- Buffer Zone

- MWPA performance standards compliance – 310 CMR 10.53
  - Limit of work was minimized to protect adjacent resource areas
  - Buffer Zone is previously developed - associated with railroad ROW
  - Design utilizes existing flat areas around existing rails to reduce grading
  - Install perimeter erosion controls at limits of work
    - Syncopated silt fence within 450 feet of vernal pools and within Priority Habitat
    - Silt fence/compost filter tube combination everywhere else
  - Revegetate all disturbed areas outside the 10-foot MCRT with native species
  - BMPs and restoration will protect the interests of the MWPA

Stormwater Management Standards and Stormwater Bylaw

- Construction phase stormwater management meets applicable EPA standards
- Final system design addresses the final bike path condition of the Project
- Per 310 CMR 10.05(6)(m)6, the Stormwater Management Standards at 10.05(6)(k) shall apply *to the maximum extent practicable* to "footpaths, bike paths, and other paths for pedestrian and/or nonmotorized vehicle access"
  - Project designed to comply with the SMS to the maximum extent practicable
- Project meets the requirements of the Sudbury Stormwater Bylaw Regulations
  - Meets the definition of "redevelopment" = "construction, alteration, or improvement on a previously developed site"
  - Environmentally sensitive site design and low impact development practices incorporated to maximum extent practicable
  - BMPs incorporated into Project design
  - Existing and proposed conditions were analyzed for the one-inch storm event and 2-, 10-, 25-, and 100-year events as required by the Bylaw

Stormwater Management Standards and Stormwater Bylaw

- Stormwater Design includes:
  - Designed to preserve existing natural hydrologic conditions to the maximum extent feasible
  - Sheet flow off the bike path surface (country drainage)
  - Generally distributed discharge
  - Vegetated filter strip >25 feet
  - Drainage swales with check dams
  - Infiltration basins
  - No winter maintenance or deicing materials used

Proposed Activities/Compliance- Isolated Vegetated Wetland

- IVW - 303 square feet
  - No performance standards stated in the Sudbury Bylaw/Regulations
  - Area replicated at 2:1 within the BVW replication area
  - Project will comply with Sections 401 and 404 of the Clean Water Act for work in isolated wetlands subject to federal jurisdiction

Proposed Activities/Compliance-Coldwater Fisheries Resources

- Two types of coldwater fisheries resources (CFRs) within Project Locus
  - MassWildlife-designated coldwater fishery resources
    - Hop Brook at Station 400+30 (Bridge 128)
    - Hop Brook at Station 725+35 (Bridge 127)
  - Sudbury Bylaw coldwater fisheries resources (not considered CFR by MassWildlife)
    - Intermittent stream at Station 527+30, which drains into Dudley Brook
    - Dudley Brook at Station 539+40, which drains into Hop Brook
    - Intermittent stream at Station 561+82, which drains into Dudley Brook
    - Intermittent stream at 593+18, which drains into Landham Brook
    - Intermittent tributary to Hop Brook that runs parallel to the Project Site near Station Road at Station 602+50 to 710+50
    - Tributary to Wash Brook at Station 747+39

Performance Standards Compliance- Coldwater Fisheries Resources

Section 2.6 of the Sudbury Bylaw Regulations

- Project will implement Best Management Practices, including erosion controls
- No impacts to baseflow, existing connections to floodplains, or levels of phosphates or nitrates in the CFRs (no fertilizers will be used for long-term O&M)
- Restoration of vegetation removed within 80 feet of top of bank with native vegetation, including trees and shrubs
- Consulted with MassWildlife expert who concluded that the Project will not impact CFRs because most of the stream channel within the Project Locus already flows through open meadows
  - Site visit completed to review Project and potential CFR impacts
  - Determined that removal of trees within vicinity of Hop Brook bridges will not result in a significant loss of shade for the stream or cause significant increase in insolation and/or stream temperatures

Proposed Activities/Compliance-Adjacent Upland Resource Areas

Section 7.2 of the Sudbury Bylaw Regulations

- Project design maximizes use of previously developed and degraded AURA, which minimizes vegetation removal and change in grade
- Best Management Practices will be implemented, including erosion controls
- Stormwater management will promote infiltration and groundwater recharge
- Wildlife habitat features will be replicated/restored

Proposed Activities/Compliance-Adjacent Upland Resource Areas (cont'd)

- **No Disturbance Area** - all areas in Project Locus outside of limits of work
  - 71 percent of AURA
  - No change to current functions and values
- **Temporary Disturbance Area -** all areas within limit of work to be restored
  - 18 percent of AURA
  - Wildlife habitat features will be replicated
  - Erosion controls will be in place during construction and all areas will be restored with native vegetation
- **Permanent Disturbance Area** - 10-foot wide paved MCRT
  - 11 percent of AURA
  - Limited to the area within existing railroad rails, ties and ballast

Proposed Activities/Compliance-Adjacent Upland Resource Areas

- VERNAL POOLS: 2015-2017 investigations identified 12 “certifiable” vernal pools under Sudbury Bylaw; 7 additional “presumed” vernal pools
  - 68 percent Vernal Pool Buffer will be “No Disturbance Area”
  - 19 percent of Vernal Pool Buffer will be “Temporary Disturbance Area”
  - 13 percent of Vernal Pool Buffer will be “Permanent Disturbance Area”
- Syncopated silt fence will be used within 450 feet of all vernal pools to prevent erosion and siltation but allow wildlife movement
- Analysis completed to confirm that Project will not affect annual recharge to vernal pools
- Project includes removing the existing rails and ties, which can impede movement of amphibians
- Time of Year Restriction: no work within 450 feet of a documented certifiable vernal pool from March 1 to May 14

Thank you. Questions?