

St. Lawrence & Atlantic Berlin Subdivision Rail Corridor

RAIL USE ADVISORY COUNCIL MEETING

July 28, 2022



MaineDOT

Rail Corridor Context

Berlin Subdivision/SL&A Corridor

Length

Town	Miles
Auburn	0.39
New Gloucester	6.93
Pownal	0.84
North Yarmouth	5.08
Yarmouth	3.25
Cumberland	2.57
Falmouth	3.82
Portland	3.60
TOTAL	26.48



Rail Corridor Context: Cross Section Locations

Berlin Subdivision/SL&A Corridor

Length

Town	Miles
Auburn	0.39
New Gloucester	6.93
Pownal	0.84
North Yarmouth	5.08
Yarmouth	3.25
Cumberland	2.57
Falmouth	3.82
Portland	3.60
TOTAL	26.48

Auburn

MP 11.60



Yarmouth

Pownal



Cumberland



MP 19.95

North Yarmouth



MP 4.70



Falmouth

MP 4.45



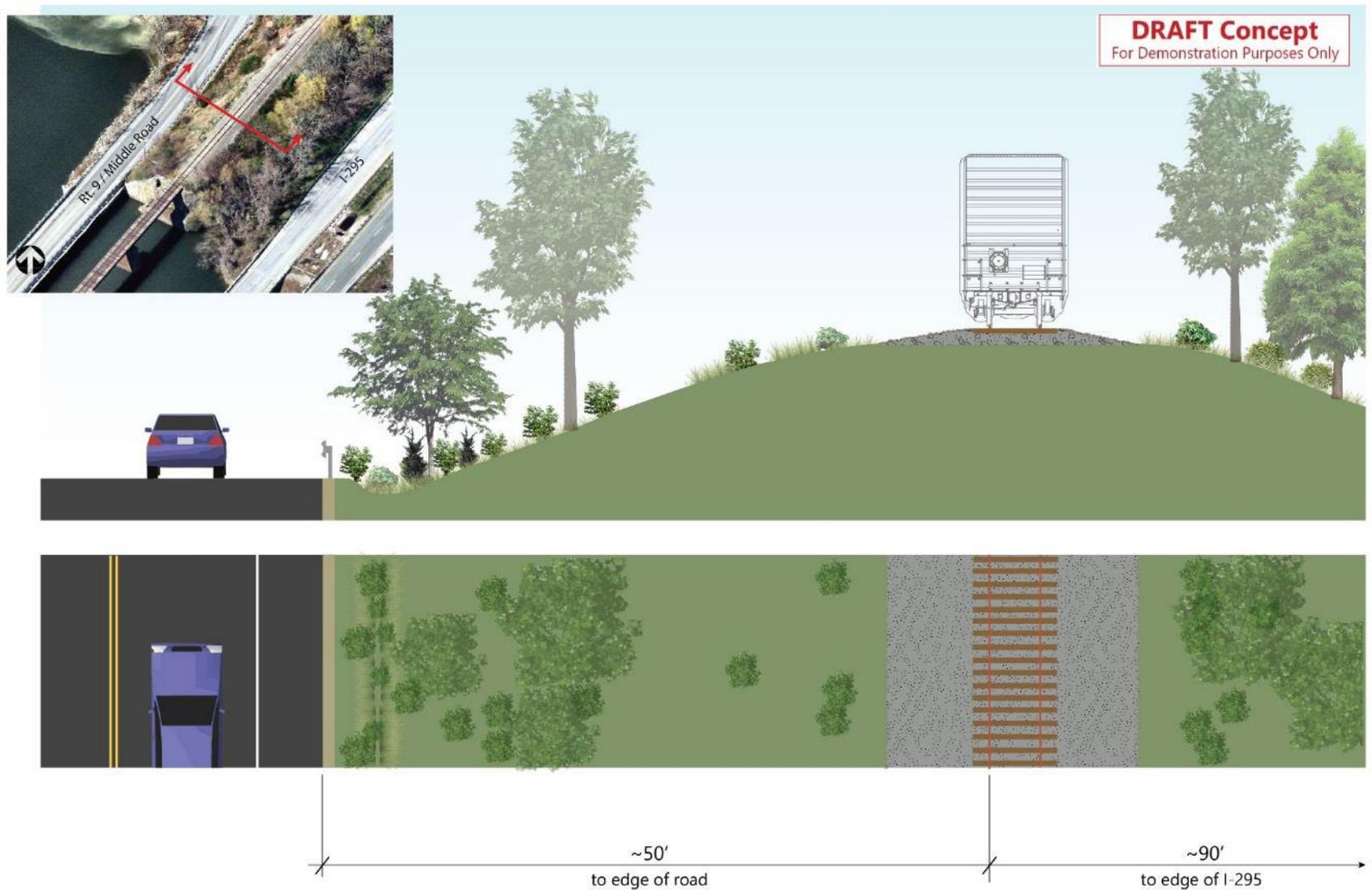
A Falmouth near Middle Road, N of Presumpscot River



04:49 GoPro video screen shot from June 23, 2022 Hi-Rail Tour of the Corridor

A Falmouth near Middle Road, N of Presumpscot River

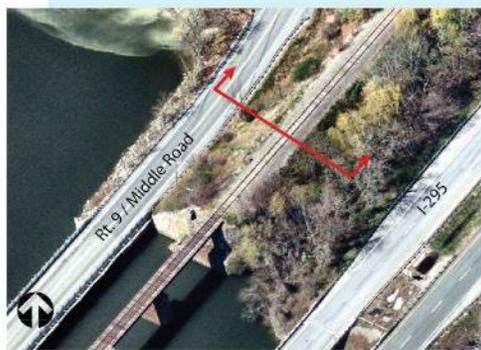
Option 1A: Restoration of Rail Service



* - Corridor ROW varies but is typically 99' in width in most segments

A Falmouth near Middle Road, N of Presumpscot River

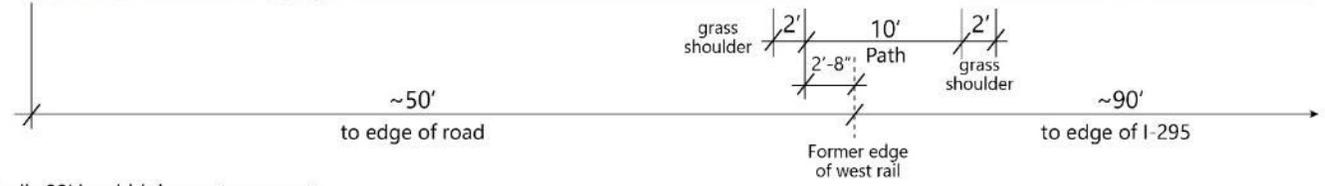
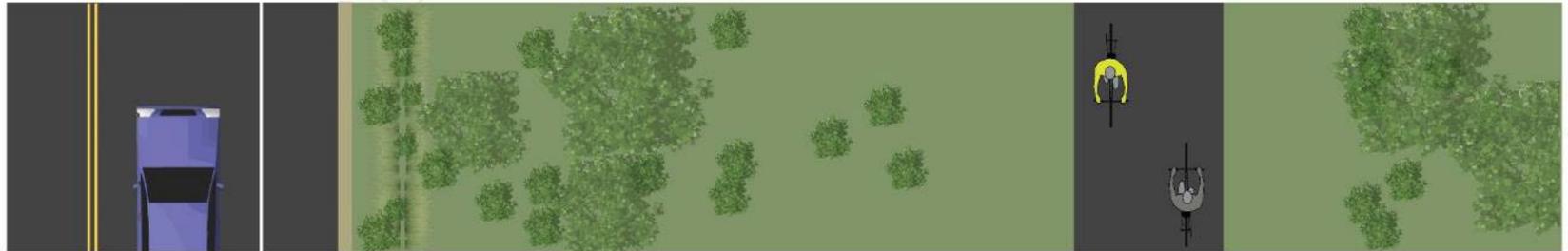
Option 2: Trail Until Rail



DRAFT Concept
For Demonstration Purposes Only



Down East Sunrise Trail, Sullivan



* - Corridor ROW varies but is typically 99' in width in most segments

A Falmouth near Middle Road, N of Presumpscot River

Option 3a: Rail with Trail



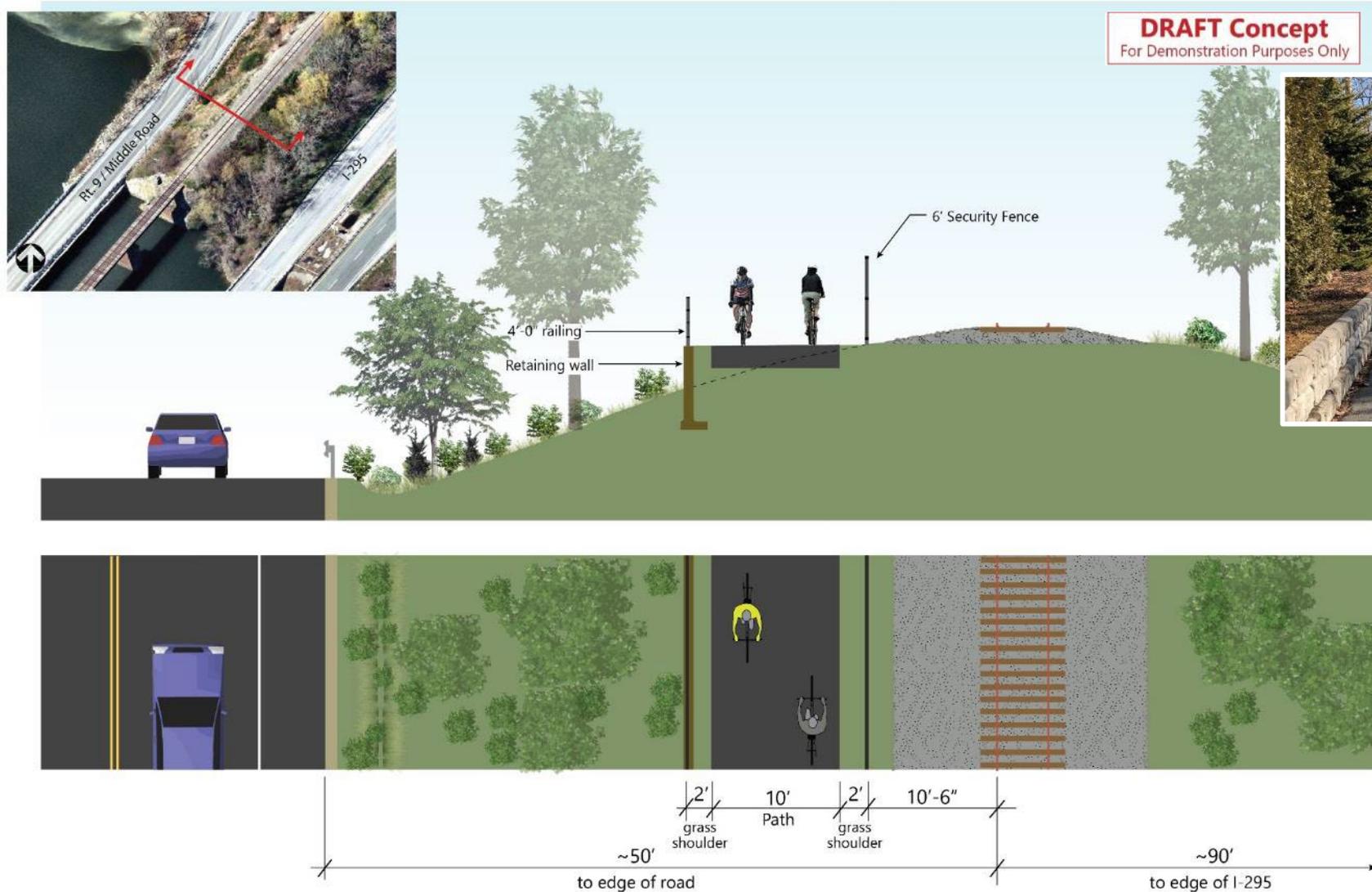
WOW Trail, Laconia NH

Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

* - Corridor ROW varies but is typically 99' in width in most segments

A Falmouth near Middle Road, N of Presumpscot River

Option 3b: Rail with Trail (10'-6" offset)



Ellsworth Trail

Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

* - Corridor ROW varies but is typically 99' in width in most segments

B Falmouth near Middle Road, between Merrill and Cole

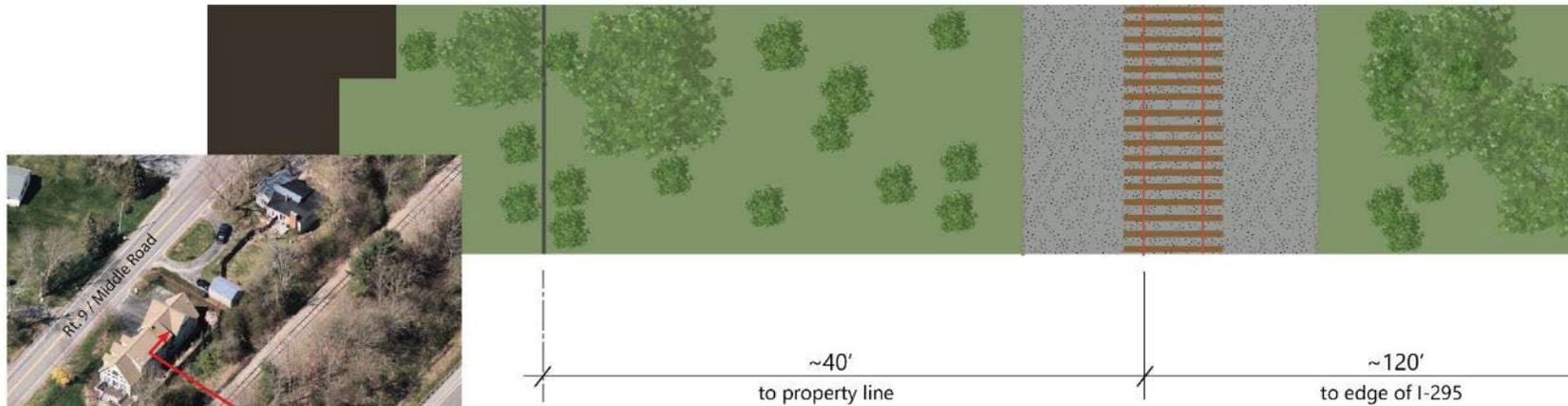


06:07 GoPro video screen shot from June 23, 2022 Hi-Rail Tour of the Corridor

B

Falmouth near Middle Road, between Merrill and Cole

Option 1A: Restoration of Rail Service



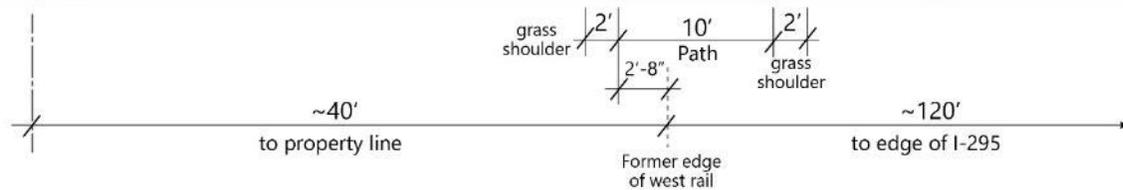
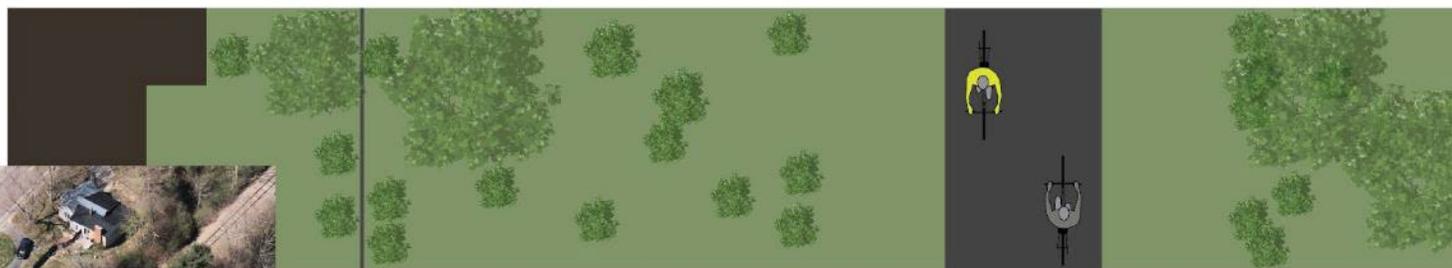
* - Corridor ROW varies but is typically 99' in width in most segments

B Falmouth near Middle Road, between Merrill and Cole

Option 2: Trail Until Rail



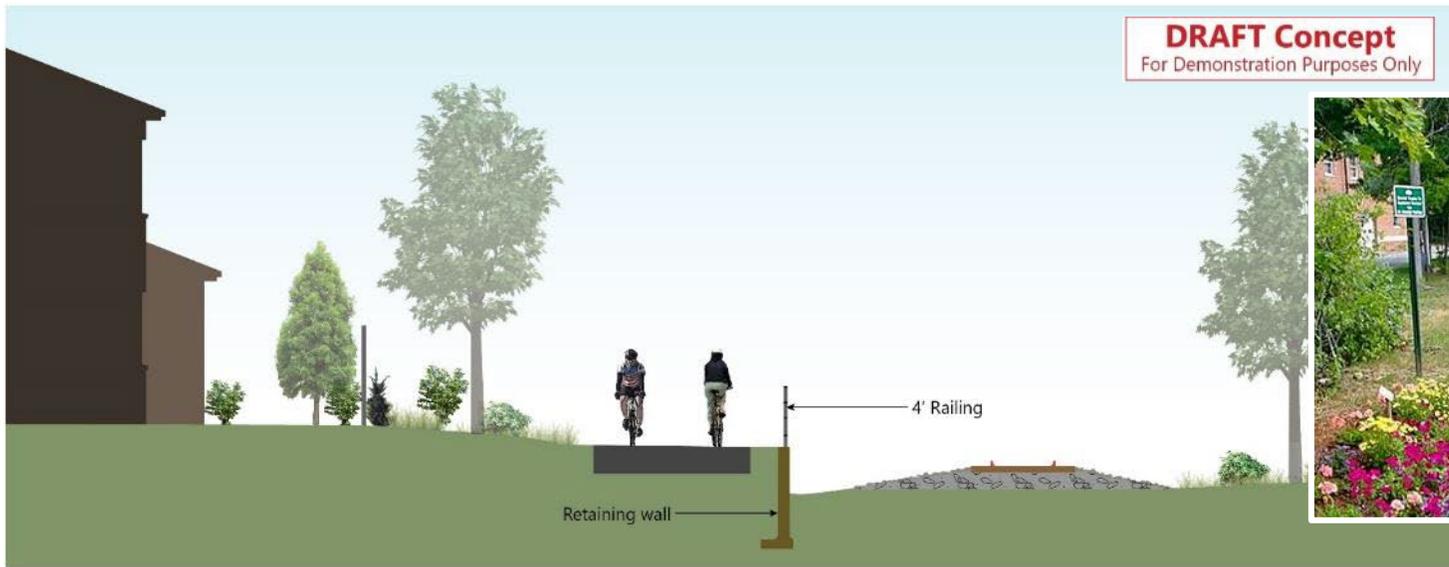
Down East Sunrise Trail, Sullivan



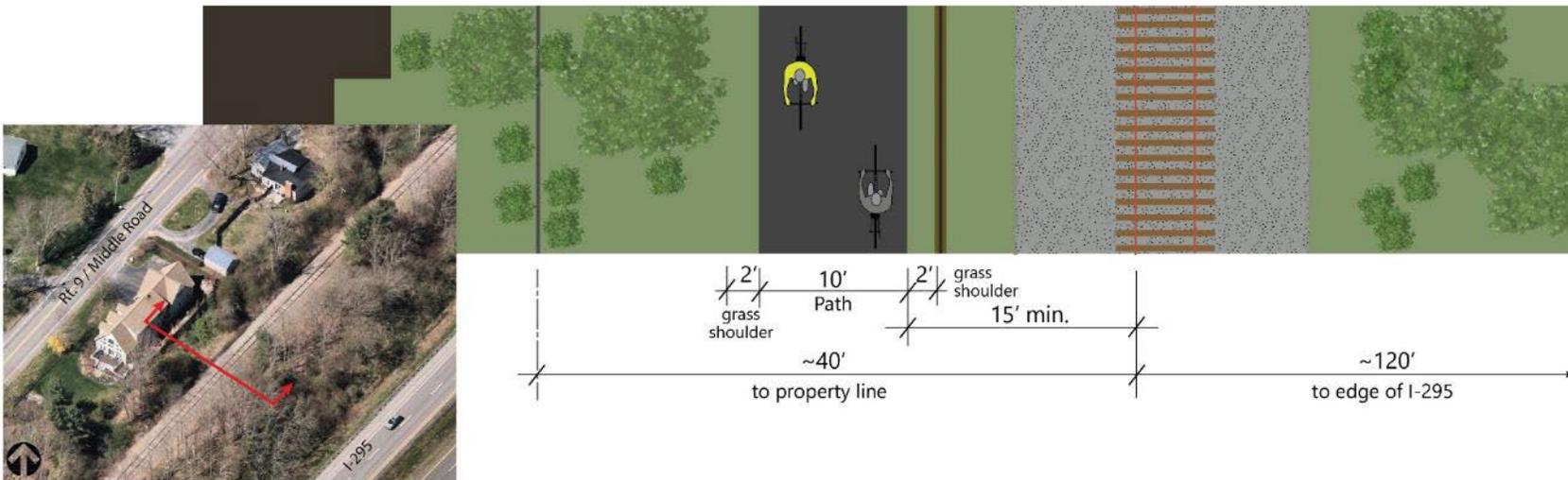
* - Corridor ROW varies but is typically 99' in width in most segments

B Falmouth near Middle Road, between Merrill and Cole

Option 3a: Rail with Trail



WOW Trail, Laconia NH



Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

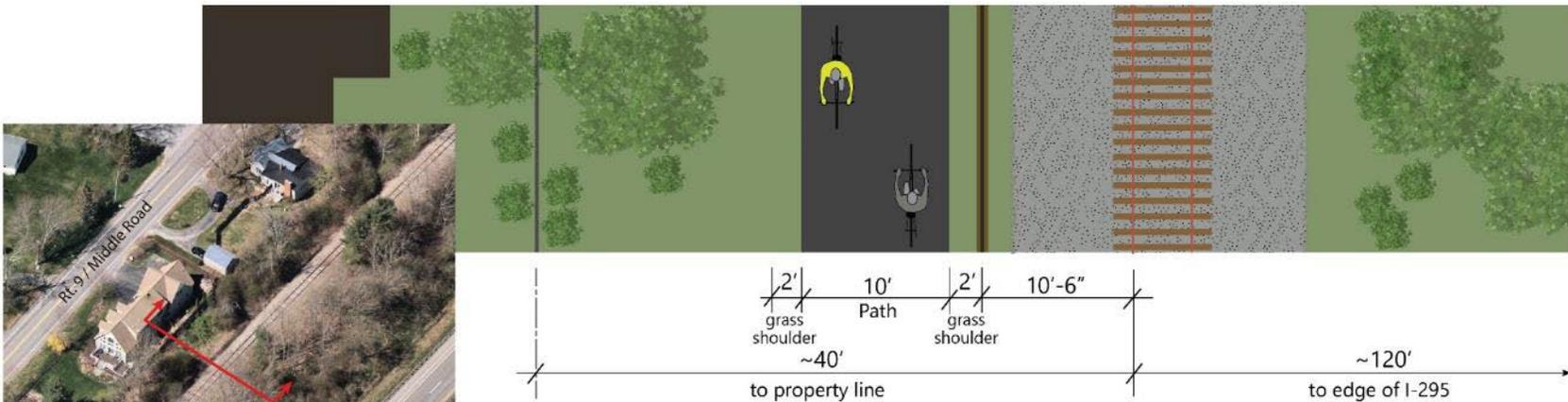
* - Corridor ROW varies but is typically 99' in width in most segments

B Falmouth near Middle Road, between Merrill and Cole

Option 3b: Rail with Trail (10'-6" offset)



Ellsworth Trail



Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

* - Corridor ROW varies but is typically 99' in width in most segments

Yarmouth near Elm Street



40:12 GoPro video screen shot from June 23, 2022 Hi-Rail Tour of the Corridor



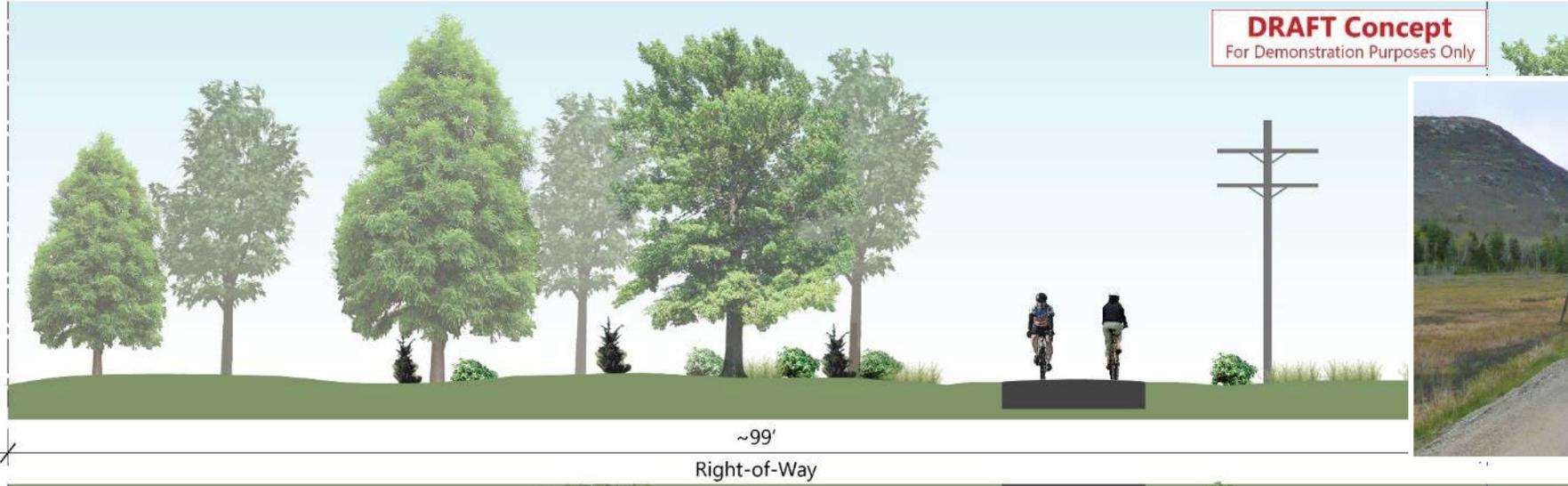
Yarmouth near Elm Street

Option 1A: Restoration of Rail Service

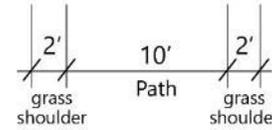
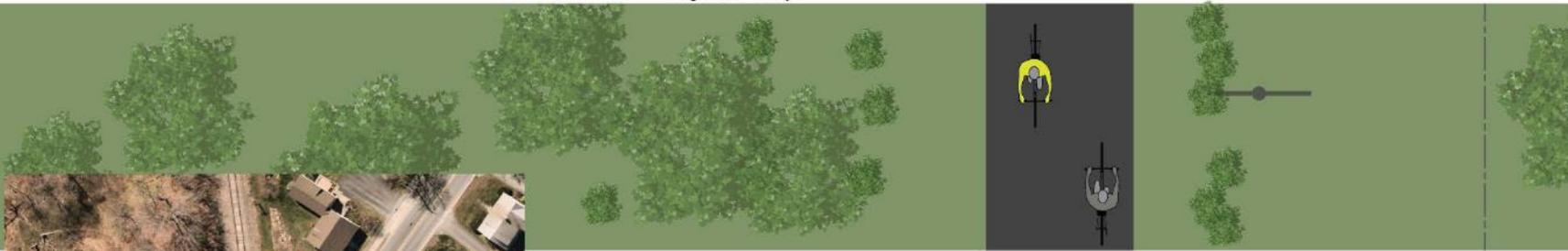


C Yarmouth near Elm Street

Option 2: Trail Until Rail



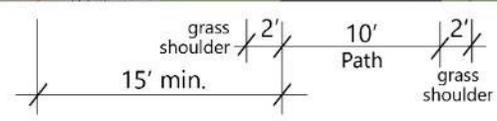
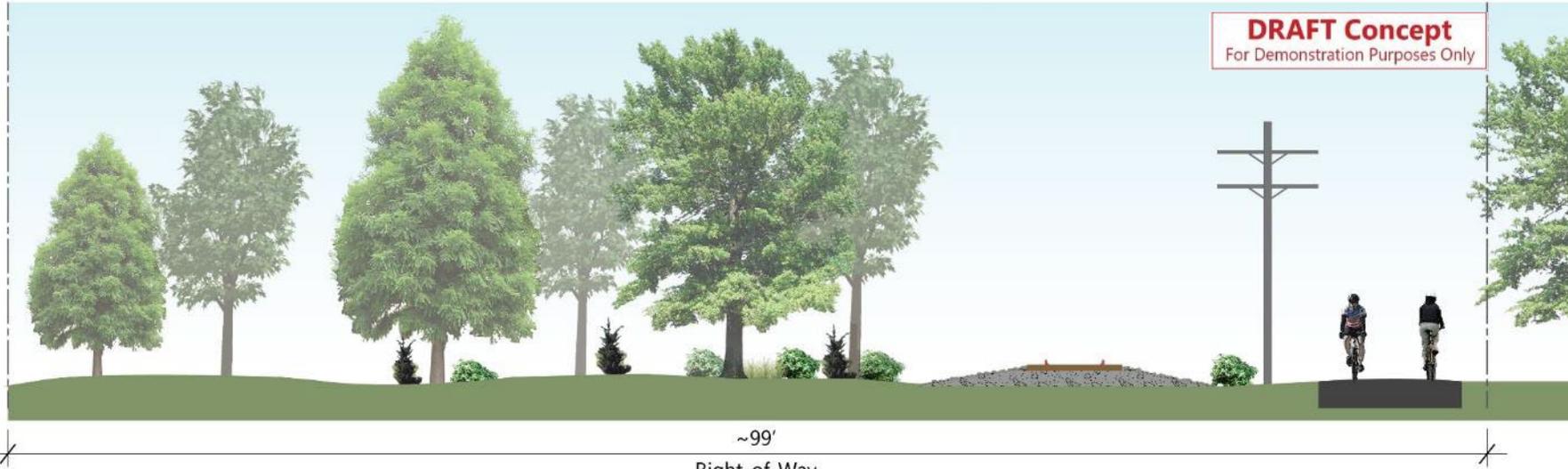
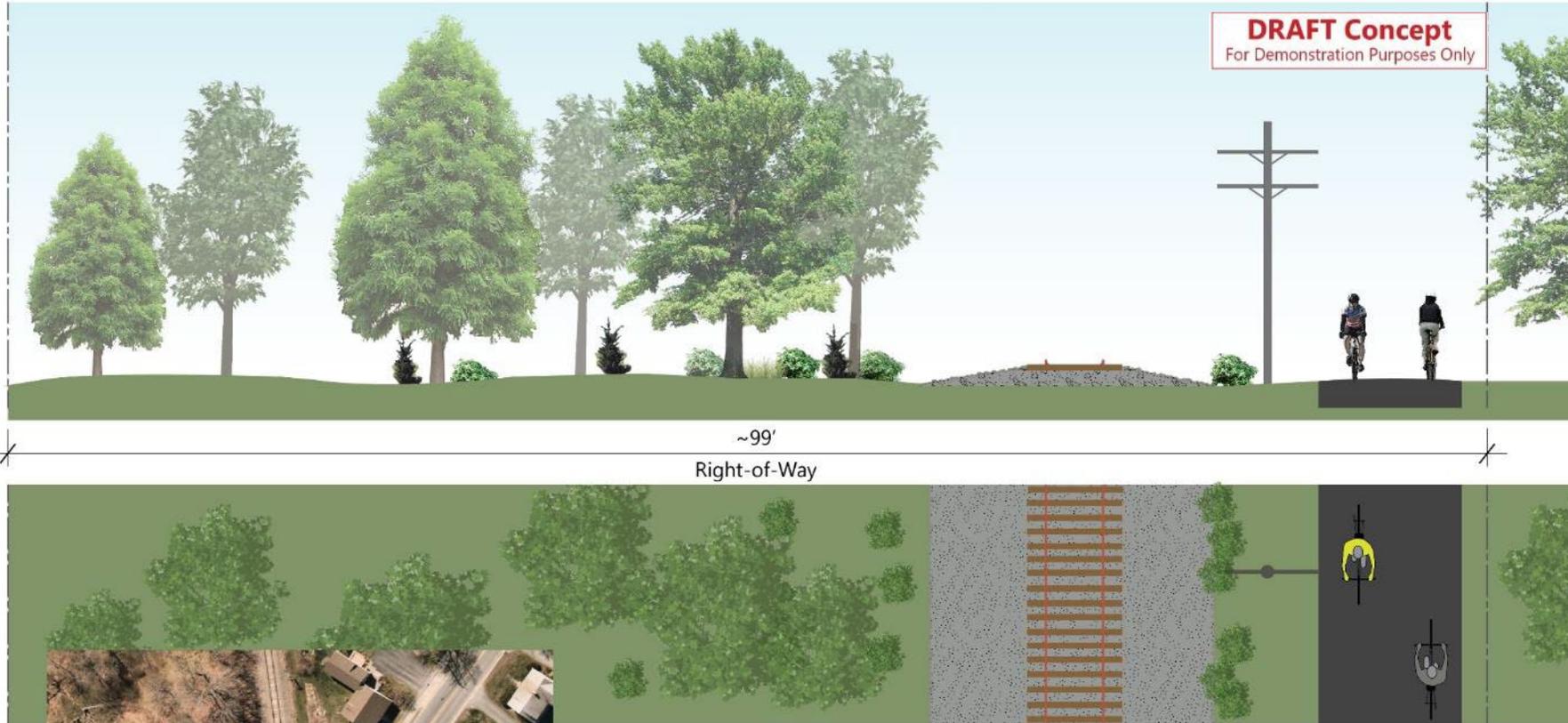
Down East Sunrise Trail, Sullivan





Yarmouth near Elm Street

Option 3a: Rail with Trail

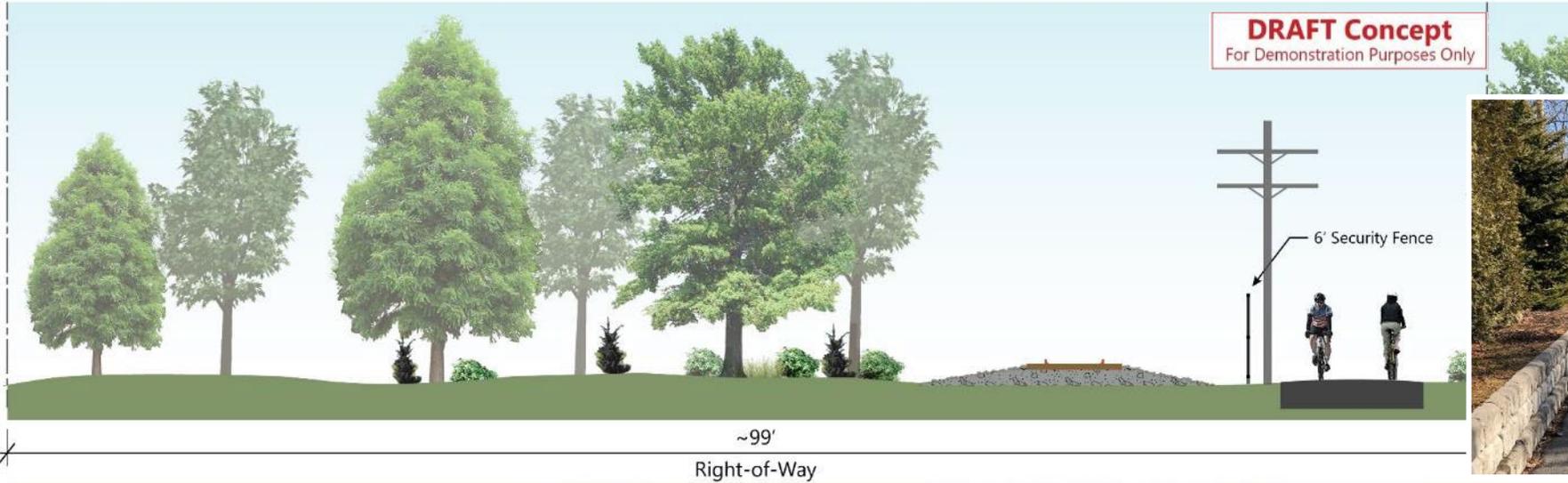


Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

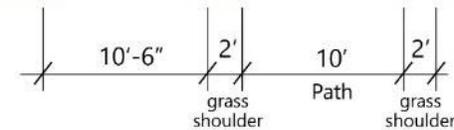
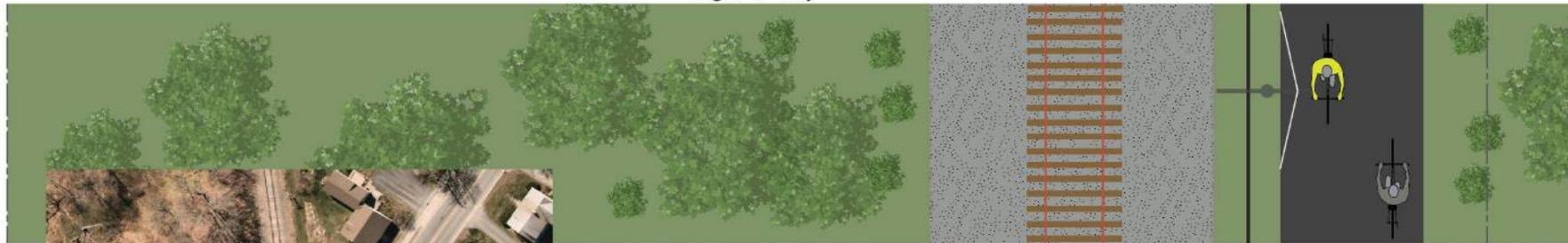


Yarmouth near Elm Street

Option 3b: Rail with Trail (10'-6" offset)



Ellsworth Trail



Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

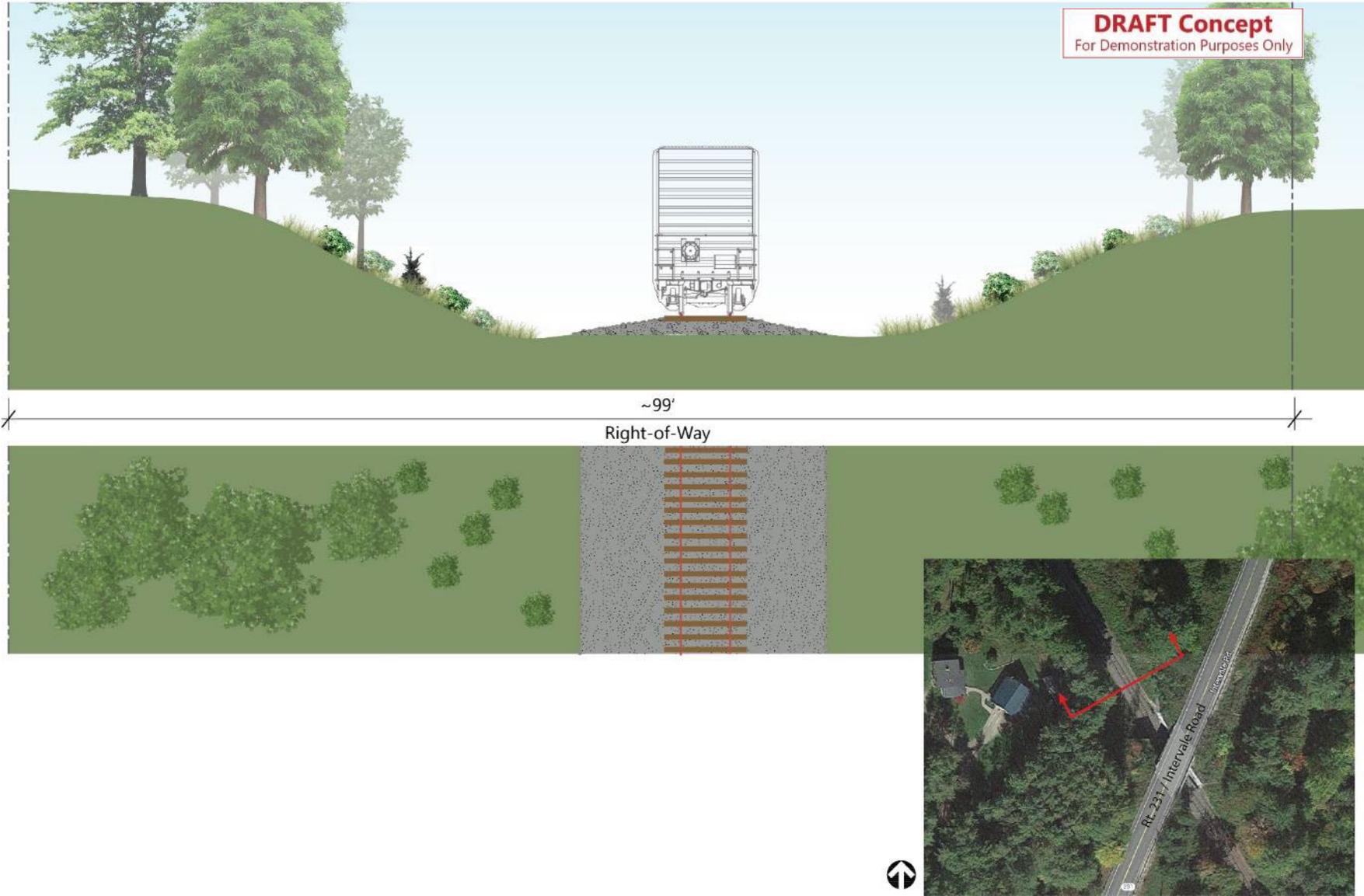
D New Gloucester near Rt. 231/Intervale Rd overpass



57:10 GoPro video screen shot from June 23, 2022 Hi-Rail Tour of the Corridor

D New Gloucester near Rt. 231/Intervale Rd overpass

Option 1A: Restoration of Rail Service

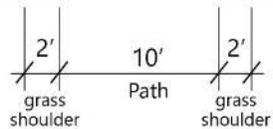
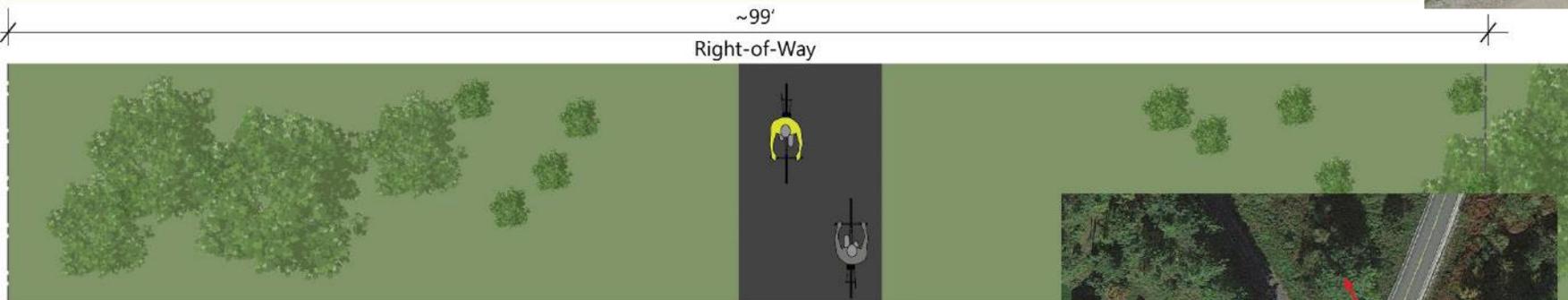


D New Gloucester near Rt. 231/Intervale Rd overpass

Option 2: Trail Until Rail

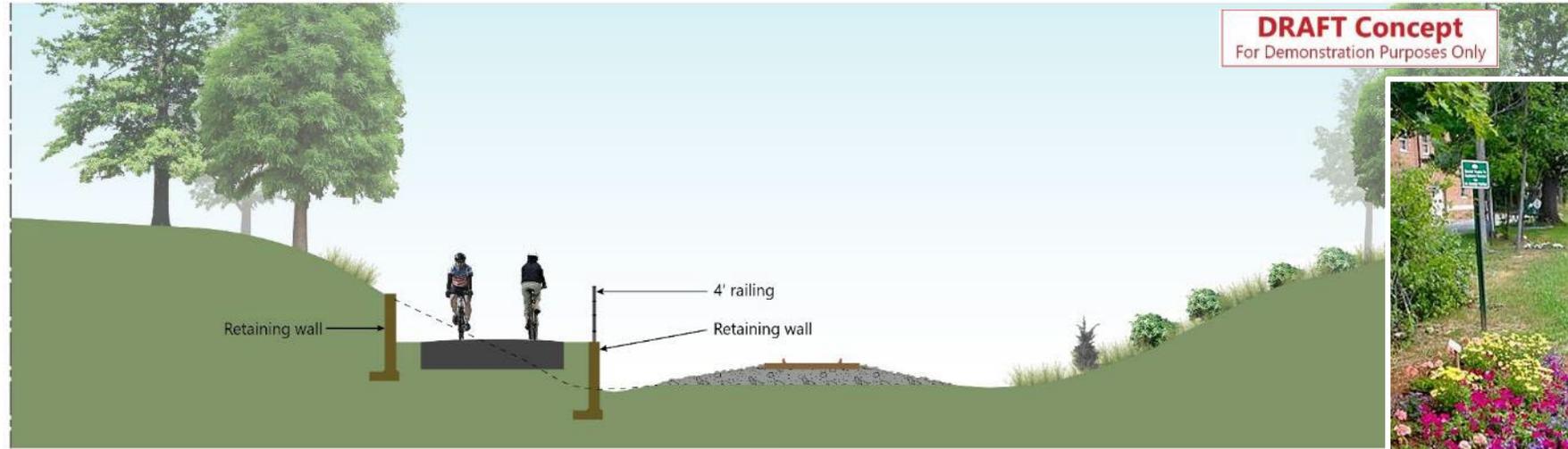


Down East Sunrise Trail, Sullivan

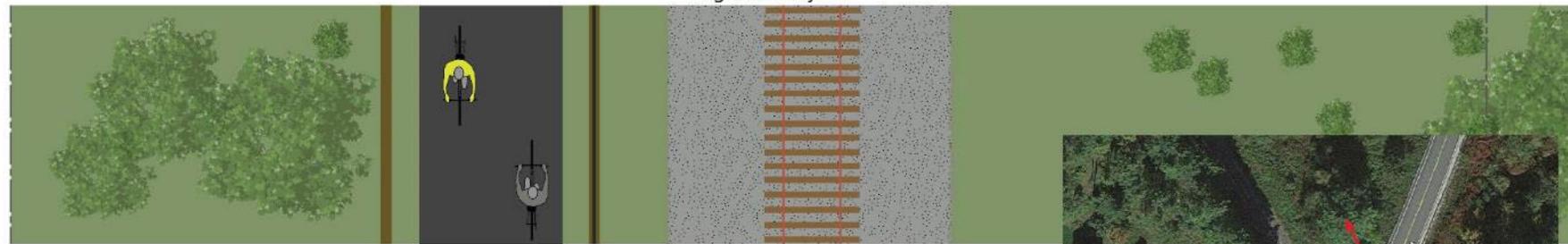


D New Gloucester near Rt. 231/Intervale Rd overpass

Option 3a: Rail with Trail



WOW Trail, Laconia NH

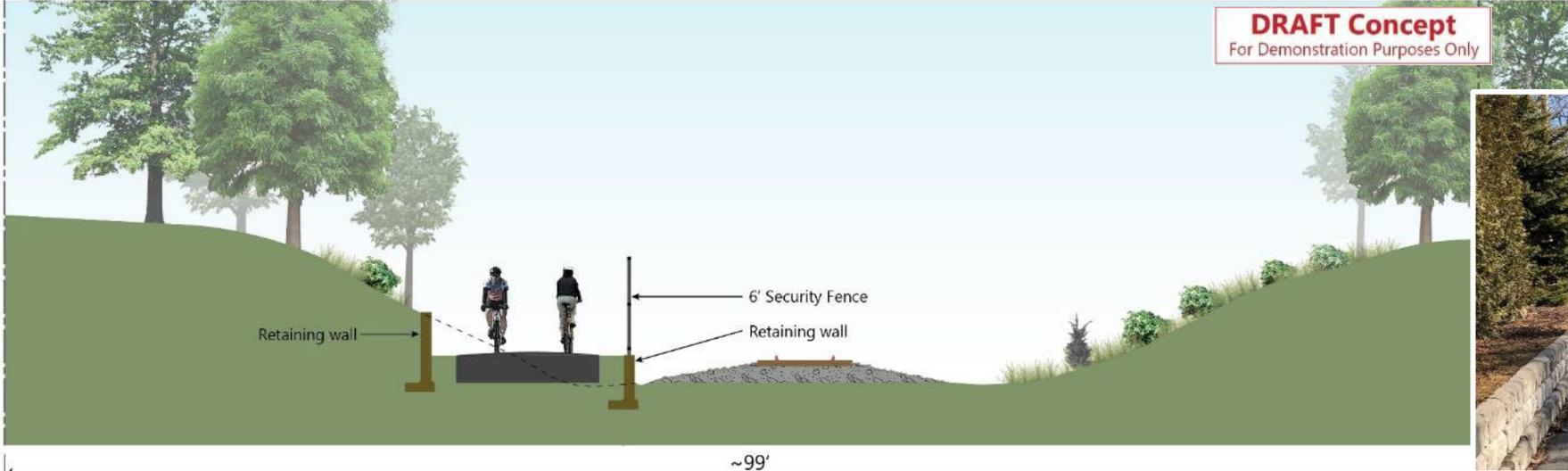


Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.

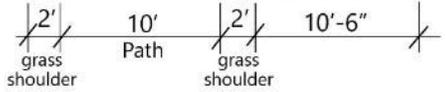
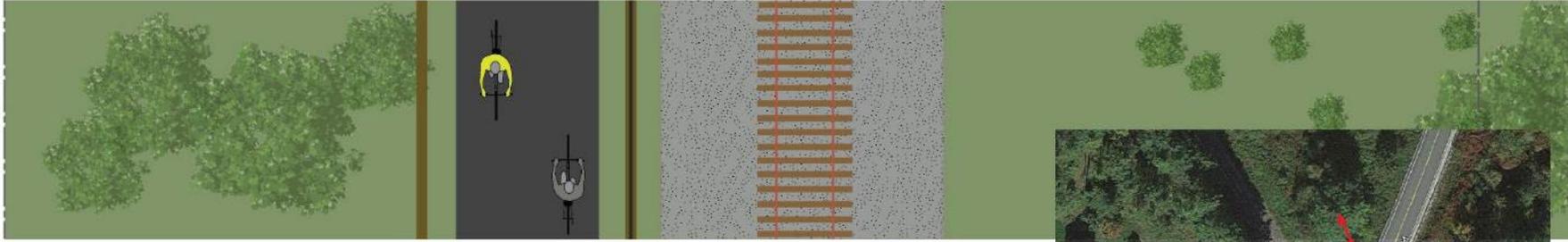


D New Gloucester near Rt. 231/Intervale Rd overpass

Option 3b: Rail with Trail (10'-6" offset)



Ellsworth Trail



Note: setback criteria shown is based on MaineDOT's Minimum Standards for Development of "Trail with Rail" memorandum, dated 01/07/2000 (edited 09/22/2014). The concept shown has not been approved by MaineDOT or any railroad operator; VHB makes no warranties pertaining to the general safety or final acceptance.



St. Lawrence & Atlantic Berlin Subdivision Rail Corridor

PRELIMINARY COST ESTIMATES



MaineDOT

Preliminary Cost Estimates

Order of Magnitude Cost Estimates*

1. Maintain existing rail corridor conditions

Restoration of Rail Service

- Option 1A: Freight Only - Class 2 Track
 - Maximum Authorized Speed (MAS) = 25 mph
- Option 1B: Passenger Service - Class 3 Track
 - MAS = 60 mph, Passenger / 40 mph, Freight

2. Trail until Rail Configuration

3. Rail with Trail Configuration

4. Ongoing Maintenance Costs

* includes 30% contingency, 10% design, and 15% construction administration



Berlin Subdivision bridge over Allen Road in Pownal

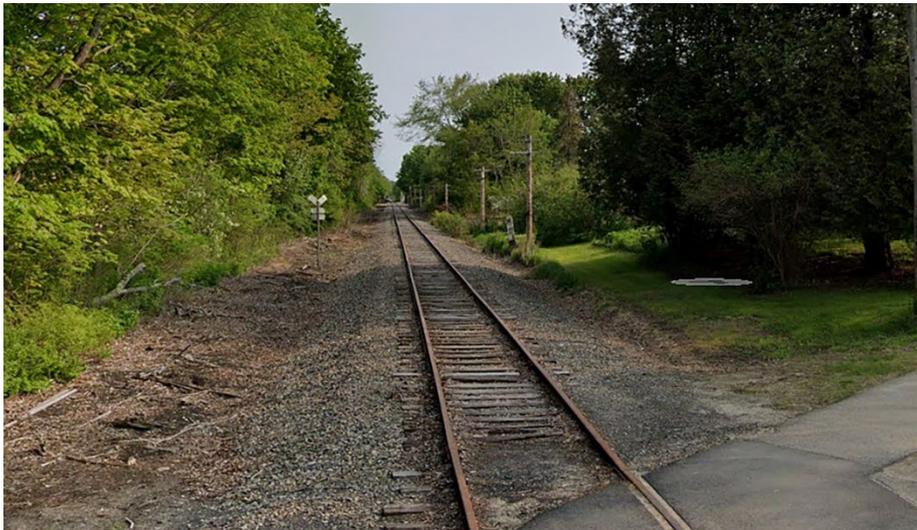
1. Maintain Existing Rail Corridor Conditions



Veranda St. overpass, Portland



Behind Hamilton Marine, Portland



E. Elm St. crossing, Yarmouth



Below Rt. 231/Intervale Rd., New Gloucester

1A. Restoration of Freight Service: MP 1.7 to MP 26

Key Components/Assumptions

- Single Mainline Track (similar to existing)
 - Maintain to Class II conditions (25 mph Freight Only)
 - No mainline signal system
- Tie Replacement (375 to 625 ties per mile)
- Rail Replacement (2 to 4 miles - locations TBD)
 - Equates to ~1/3 to 2/3 length in curved sections
- Rehab Roadway at-grade XINGS (select locations)
 - Track/Pavement Surface
 - Install/Upgrade ACHW devices
- Culvert work (minor rehab to total replacement)
- Excludes future siding install/construction costs

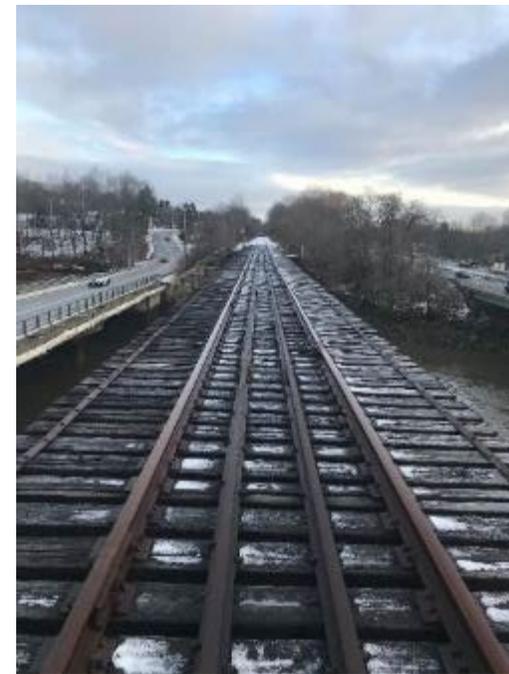


Old Field Road XING in Yarmouth

1A. Restoration of Freight Service

Cost Estimate

- 2018 Lewiston/Auburn Study
 - Adjusted Infrastructure Program for Freight Only
 - Unit Costs adjusted to 2nd Quarter 2022 using by R.S. Means inflation factors for heavy construction
 - Factor = x1.277 to adjust from 2018 to 2022 Q2 cost



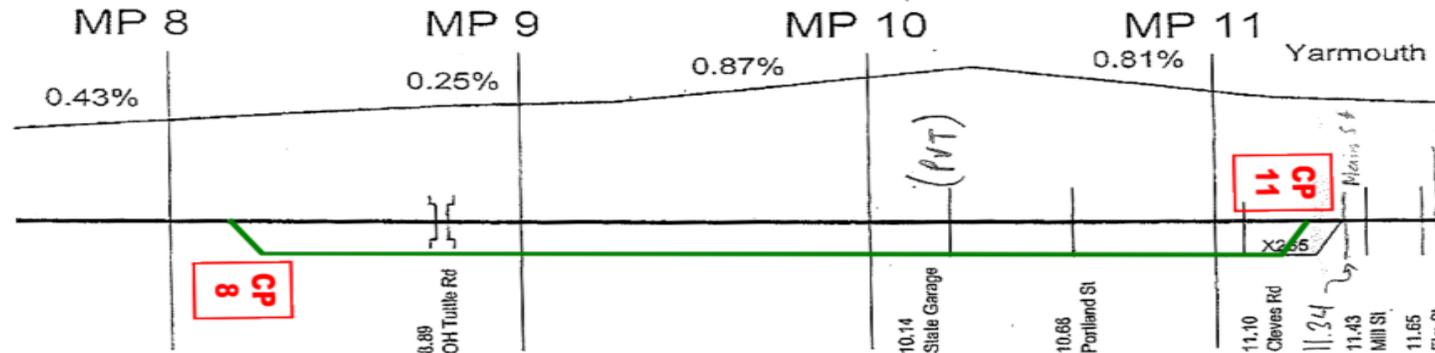
RR Bridge Deck – Presumpscot River Bridge in Falmouth

	Freight Only Service - LOW	Freight Only Service - HIGH
Segment 1 (MP 0.0 to MP 1.7)	NA	NA
Segment 2 (MP 1.7 to MP 26)	\$13,400,000	\$31,000,000
Total Cost	\$13,400,000	\$31,000,000

1B. Upgrades for Passenger Service: MP 1.7 to MP 26

Key Components/Assumptions

- Operate at Class 3 track conditions
- Double track where feasible to allow for operation of multiple train sets
- Tie Replacement (1,200 ties per mile)
- Replace existing jointed rail with CWR
- Install mainline signal system with PTC/ATC
- Rehab all public roadway at-grade XINGS
- New Track, Pavement Active ACHW Devices
- Replace Timber Decks at all private/farm XINGS
- Culvert work (minor rehab to total replacement)
 - Assume 30% (42 of 137 locations) require work
- Excludes improvements/costs for passenger station construction
- Excludes any improvements at Danville Junction (north of study area)



1B. Restoration of Rail Corridor: MP 0.0 to MP 1.7

Ocean's Gate to Maine Yacht Center

Restoration of Rail Corridor – Challenges

- Eastern Promenade
- Shoreline/Beach Access (multiple locations)
- Reconstruction of Back Cove Bridge
- Restoration of ROW through Yacht Center
 - (Track Section north of Back Cove Bridge)
- Existing Yacht Center Operations
- Passenger Service Option also includes:
 - Two-track ROW for last Mile (+/-)
 - Main Line Signal System / PTC
 - Costs for future terminal station not included



Eastern Promenade in Portland



Back Cove Bridge in Portland

1B. Passenger Service Upgrades MP 1.7 to MP 26

Cost Estimate

- 2018 Lewiston/Auburn Study
 - Train Operation and Level of Service assumptions consistent with previous study
 - Unit Costs adjusted to 2nd Quarter 2022 using by R.S. Means inflation factors for heavy construction
 - Factor = x1.277 to adjust from 2018 to 2022 Q2 cost



Berlin Subdivision Corridor in Yarmouth

	Passenger Service
Segment 1 (MP 0 to MP 1.7)	\$60,000,000
Segment 2 (MP 1.7 to MP 26)	\$214,000,000
Total Cost	\$274,000,000

2. Trail Until Rail *and* 3. Rail with Trail

Cost Estimates Include:

- Trail construction
 - Begins at MP 1.2 (Eastern Prom Trail continues south)
- Grade crossing upgrades
 - marked crosswalks
 - warning signs, and potential flashing beacons
- Bridge improvements
 - New Back Cove trail bridge

Not Included:

- Additional ROW
- Environmental mitigation costs
- Parking or other trailhead improvements (e.g., info kiosks)



2. Trail Until Rail

Cost Estimating Assumptions

- Trail construction includes:
 - Removal of existing tracks
 - Resurfacing/regrading of ballast
 - Replacement with stonedust/gravel or asphalt pavement trail surface
- Bridge improvements include:
 - New timber trail surface
 - Timber bridge railings

2. Trail Until Rail

Cost Estimating Assumptions

- Trail construction includes:
 - Removal of existing tracks
 - Resurfacing/regrading of ballast
 - Replacement with stonedust/gravel or asphalt pavement trail surface
- Bridge improvements include:
 - New timber trail surface
 - Timber bridge railings

	Gravel Path	Paved Path
Segment 1 (MP 1.2 to MP 1.7)	\$19,100,000	\$19,200,000
Segment 2 (MP 1.7 to MP 26)	\$28,400,000	\$35,800,000
Total Cost	\$47,500,000	\$55,000,000

3. Rail with Trail

Cost Estimating Assumptions

- Trail incorporates min. 15' offset from the nearest rail
- Retaining walls, etc. used to ensure design stays within state-owned ROW
- Bridge carrying the rail tracks includes new adjacent structure to carry trail
- Roadway bridges over rail corridor to be rebuilt, as needed, to accommodate rail and trail if horizontal clearance is not sufficient
- More detailed feasibility study required to look at on-road bypass of constrained areas
- Restoration of rail service NOT included

3. Rail with Trail

Cost Estimating Assumptions

- Trail incorporates min. 15' offset from the nearest rail
- Retaining walls, etc. used to ensure design stays within state-owned ROW
- Bridge carrying the rail tracks includes new adjacent structure to carry trail
- Roadway bridges over rail corridor to be rebuilt, as needed, to accommodate rail and trail if horizontal clearance is not sufficient
- More detailed feasibility study required to look at on-road bypass of constrained areas
- Restoration of rail service NOT included

	Gravel Path	Paved Path
Segment 1 (MP 1.2 to MP 1.7)	\$19,300,000	\$19,300,000
Segment 2 (MP 1.7 to MP 26)	\$70,700,000	\$75,000,000
Total Cost	\$90,000,000	\$94,300,000

4. RAIL: Ongoing Maintenance Cost Estimates

- Cost includes ongoing track/signal system inspection and cyclic maintenance
- Track maintenance generally includes:
 - Surfacing
 - Cross tie replacement
 - Grade crossing panel replacement
 - Switch maintenance
 - Brushcutting
- Signal system maintenance generally includes:
 - Correcting signal malfunctions
 - Repairs to crossing safety equipment
 - Upgrades to obsolete components



Tamper for Track Surfacing



Signal Bungalow Interior

4. RAIL: Ongoing Maintenance Cost Estimates

	Annual Cost (per Track Mile)	Annual Cost (26-mile corridor)
Freight Service	\$82,000	\$2,132,000
Passenger Service	\$90,000	\$2,340,000

NOTES:

- Costs are based on maintenance of similar services in New England
- Higher cost for passenger service is due to additional signal system requirements

4. TRAIL: Ongoing Maintenance Cost Estimates

	Annual Cost (per mile)	Annual Cost (26-mile corridor)
Gravel Path	\$3,500 - \$5,500	\$91,000 - \$143,000
Paved Path	\$3,000 - \$5,000	\$78,000 - \$130,000

NOTES:

- Maintenance costs can vary widely depending on context, trail design, and seasonal conditions
- Estimated costs are based on 2015 study by the Rail to Trails Conservancy and Pennsylvania Dept. of Conservation and Natural Resources
- MaineDOT policy for other trails across the state typically have agreements with local municipalities or non-profit entities to fund maintenance of the trail

RUAC Support Study Next Steps

- On-going assessment of existing corridor conditions
- High-level environmental assessment
- Analysis of economic benefits
 - Demographics of potential trail users
 - Economic impacts of restoration of rail service (construction jobs, economic output, use of rail compared to other freight modes)
 - Real estate impact of rail service and/or new trail
 - Tourism impacts



Rail junction in Yarmouth

St. Lawrence & Atlantic Berlin Subdivision Rail Corridor

RAIL USE ADVISORY COUNCIL MEETING

July 28, 2022



MaineDOT