



FEASIBILITY STUDY

# DRAFT Berlin Subdivision Rail Corridor Study

Portland to Auburn, Maine



**MaineDOT**

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# 1

## Introduction and Summary

The Maine Department of Transportation retained VHB to study potential uses of the state-owned Berlin Subdivision rail corridor from Portland's Old Port to the Auburn/New Gloucester line. The work effort included analysis of the environmental impacts and potential economic benefits of either the introduction of a trail along the state-owned, inactive rail corridor (to either temporarily replace the railroad tracks or to run alongside them) or preserving the existing rail corridor for possible restoration of rail service in the future. This report summarizes the findings of the 9-month long study.

### 1.1 Purpose of the Study

The purpose of this report is to summarize the analysis of potential uses along the Berlin Subdivision rail line from Portland's Ocean Gateway to the Auburn/New Gloucester line, the 26.5-mile-long, state-owned corridor running through parts of Portland, Falmouth, Cumberland, Yarmouth, North Yarmouth, Pownal and New Gloucester. The intent is to inform the recommendation of the Rail Use Advisory Council (RUAC), as established by Maine's Legislative Document (LD) 1133. The RUAC's recommendation will be addressed to the MaineDOT Commissioner for final assessment and decision. Throughout the process, the consultant team—led by VHB, with assistance from economists RKG Associates—evaluated three potential uses for the corridor with sub-options for the first alternative. The potential alternatives include:

- › **Maintain and Preserve Existing Rail Corridor** – provides for possible restoration of rail service in the future with potential rehabilitation of the existing railroad infrastructure to support reestablishment of rail operations. Operations may include:
  - Continuation of MaineDOT's current patrol and maintenance activities along the existing track corridor to ensure the existing rails remains intact and viable for possible reestablishment of rail service in the future.

- Reestablishment of freight rail service, including performance of State of Good Repair and Deferred Maintenance projects, targeted to accommodate delivery of materials and goods to commercial and industrial customers.
  - Implementation of a passenger rail service, including capital infrastructure improvements needed to attain higher operating speeds and support a level and frequency of service that would meet ridership demands
- › **Interim Trail until Rail (TUR)** – interim multi-use trail using the existing rail bed. This alternative includes removal of the existing tracks and ties and developing a multi-use trail on the former track bed. The trail surface may be gravel/stone dust or paved. The corridor will require minor modifications to support trail user loads and provide a uniform surface appropriate for the trail as well as a railing system where needed to safely accommodate bicyclists and pedestrians.
- › **Rail with Trail (RWT)** – multi-use trail running adjacent to the existing rail bed. This alternative maintains the existing tracks and ties in current condition and establishes an adjacent and parallel multi-use trail with either a gravel/stone dust or paved surface. Grade differences in certain areas of the corridor will require retaining walls to support a new trail. Since this option assumes the rail will be in service, or someday return to service, the near edge of the trail (not including shoulder) shall be a minimum of 15 feet from the nearest rail, in accordance with MaineDOT standards for development of a RWT. However, this setback may be reduced to 10.5 feet, with MaineDOT approval if a fence meeting MaineDOT standards is installed at the edge of the trail shoulder between the trail and the closest rail. A RWT configuration adjacent to passenger trains—typically moving much faster than freight trains—can be an uncomfortable experience for trail users when a minimum of 15 feet is not provided.

For this high-level analysis, GIS-based maps were reviewed and analyzed, and online information was gathered (e.g., Google Earth). The study team was familiar with the corridor from previous studies performed for MaineDOT. Several study team members joined MaineDOT and RUAC members for a one-day review of the rail corridor via hi-rail vehicle. Detailed site inspection visits and topographic survey

#### Members of the Berlin Subdivision Rail Use Advisory Council (RUAC)

- Chair Bill Shane (Cumberland Town Manager)
- Angela King (Bicycle Coalition of Maine Advocacy Director)
- Becky Taylor-Chase (Town Administrator, Pownal)
- Brian Harris (Maine Yacht Center)
- Charles Hunter (Assis. VP for Genesee & Wyoming)
- Chris Chop (GPCOG Transportation Director)
- Diane Barnes (North Yarmouth Town Manager)
- Dick Woodbury (Casco Bay Trail Alliance)
- Hope Cahan (Falmouth Town Councilor)
- Jeremiah Bartlett (Portland Transportation Engineer)
- Jonathan LaBonte (Transportation Analyst for Auburn Town Manager)
- Natalie Thomsen, Town Planner, New Gloucester
- Nate Wildes (Live and Work in Maine)
- Scott LaFlamme (Yarmouth Economic Development Dir.)
- Tony Donovan (Maine Rail Transit Coalition)

#### MaineDOT Staff Support

- Director of Freight and Passenger Services, Nate Moulton
- Project Manager Nate Howard, Director, Rail Program

were not performed as part of this study.

Monthly or bi-monthly meetings were held with the RUAC. These meetings were critical to help the study team understand the key issues along the corridor. In December, one public meeting is to be held in Cumberland to allow members of the public to bring forth ideas or to express any concerns. Any future planning and design work along the corridor will require additional research, topographical survey, environmental review, site investigations, and more extensive outreach to abutters and nearby residents and businesses.

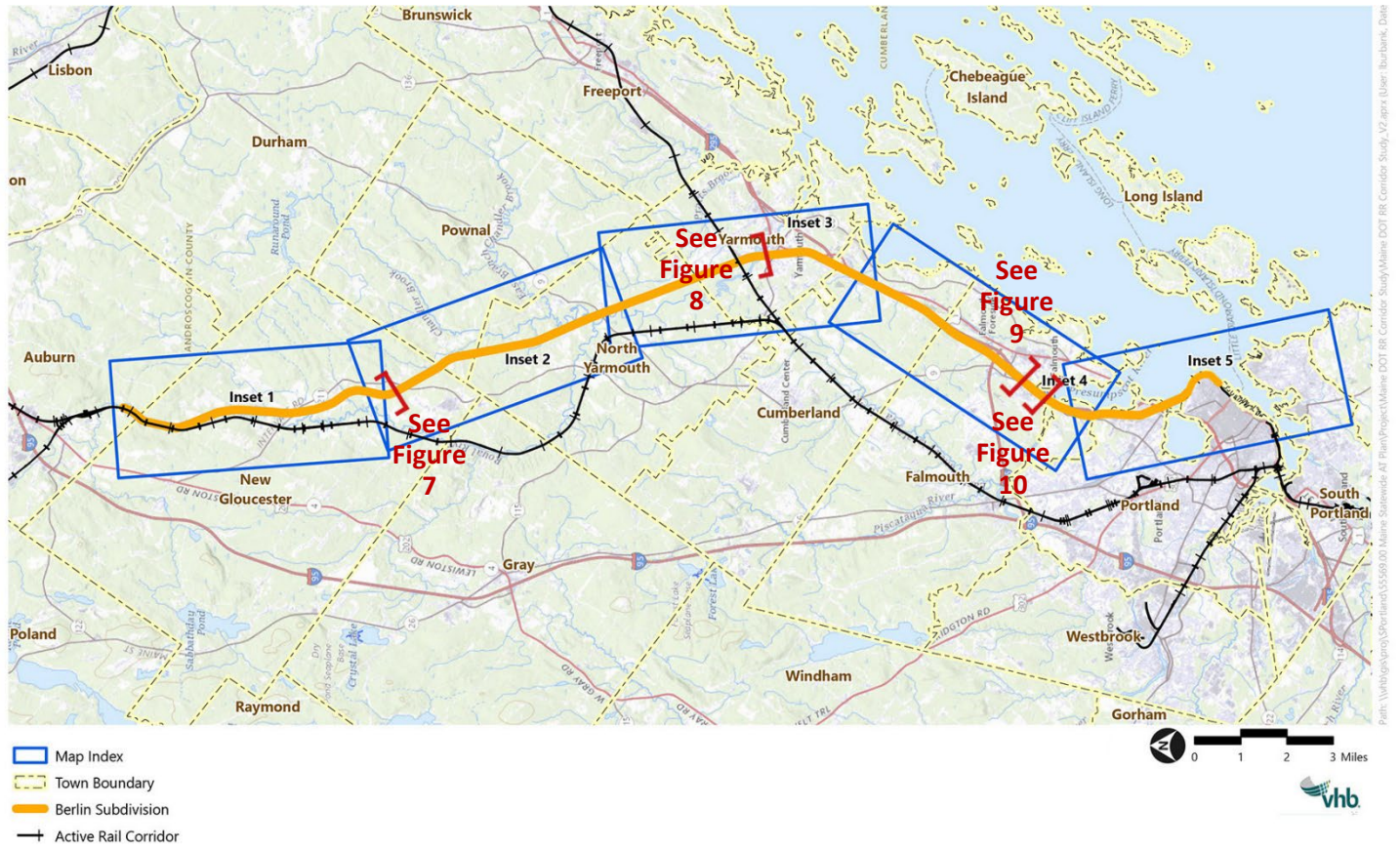
## 1.2 Study Area

The Berlin Subdivision Rail Corridor runs along a 96-126-foot-wide, state-owned corridor through eight towns, including Portland, Falmouth, Cumberland, Yarmouth, North Yarmouth, Pownal, New Gloucester, and Auburn. Termini of the state-owned portion of the corridor includes Ocean Gateway in Portland at the south end and the Auburn/New Gloucester line<sup>1</sup> at the north end. This features forty-seven (47) at-grade rail crossings (including public, private, and farm), eleven (11) of which are signalized. The corridor overlaps directly with several large environmentally-sensitive resource areas, including 100-year floodplain, National Wetlands Inventory (NWI) wetlands, conservation lands, and habitat for endangered or threatened species or species of concern. As depicted in the Existing Conditions Maps and Sections provided in the following pages, where the corridor does not directly overlap with existing resources areas, it runs parallel in numerous places.

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<sup>1</sup> Approximately one mile south of Danville Junction and six miles south of Downtown Auburn

Figure 1: Study Area Overview Map



See subsequent pages for individual inset maps (Figures 2-6) and cross section views (Figures 7-10)



Figure 2: Berlin Subdivision Corridor Inset 1, Auburn-New Gloucester

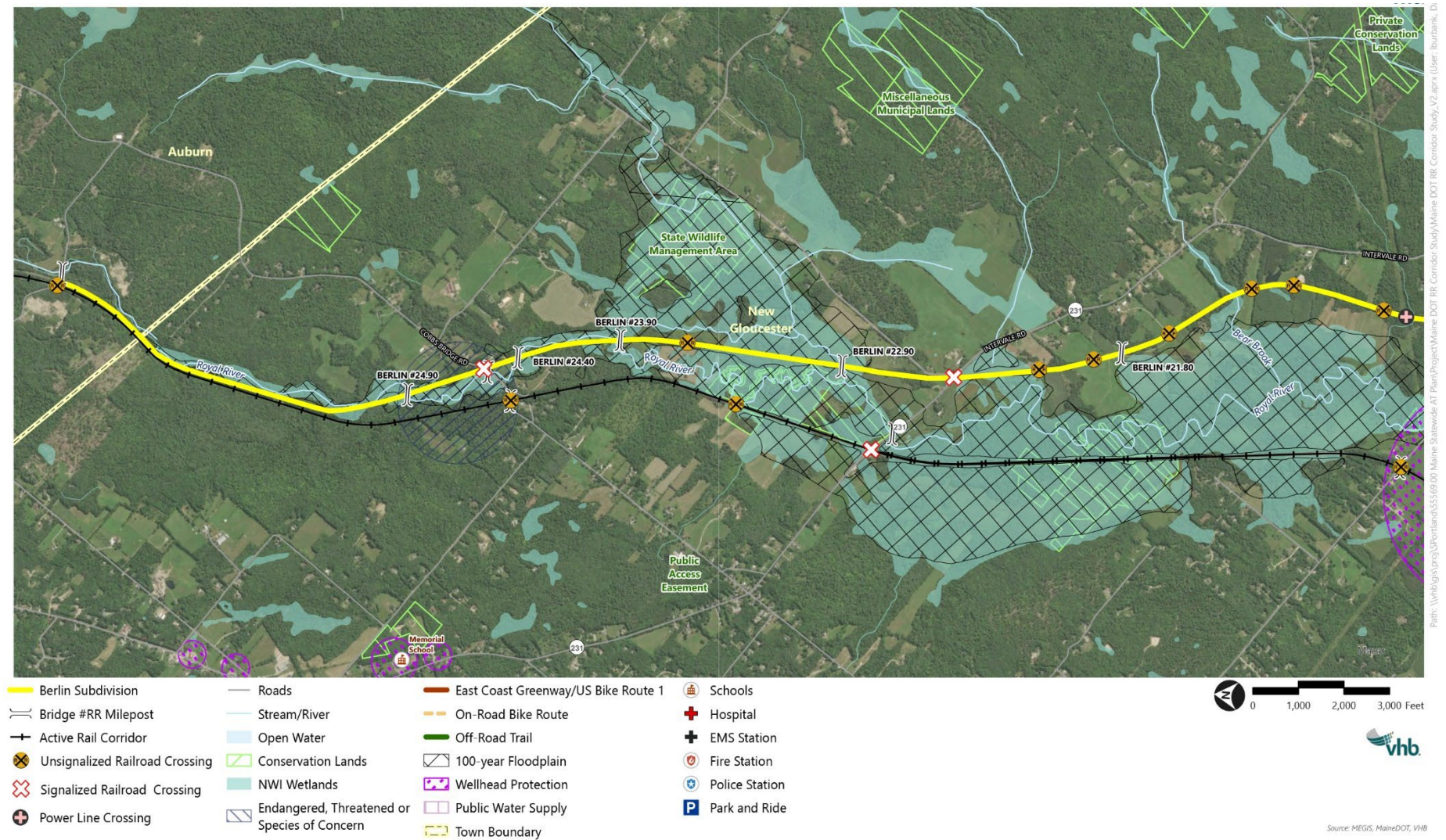




Figure 3: Berlin Subdivision Corridor Inset 2, New Gloucester-Pownal-North Yarmouth

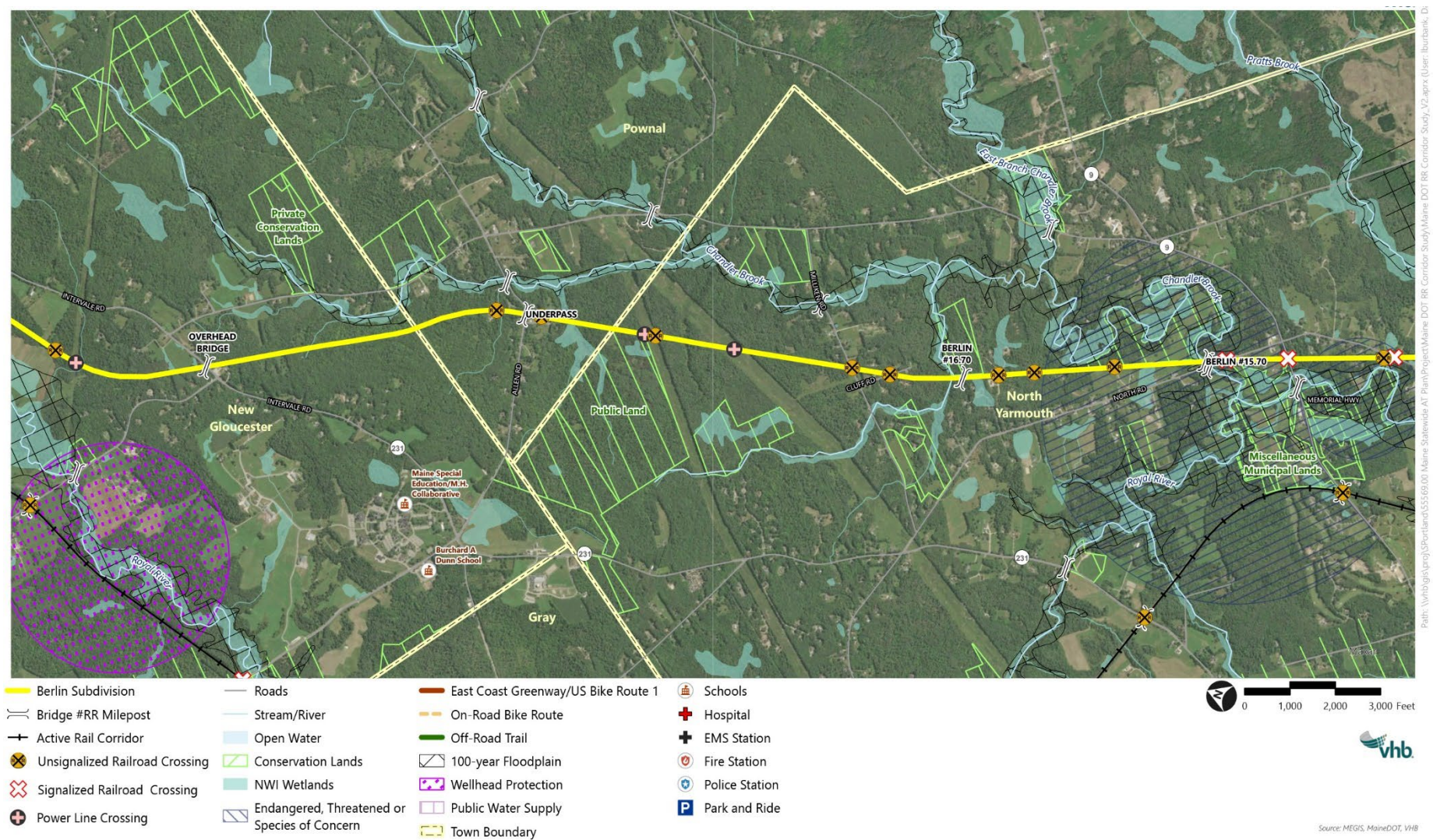




Figure 4: Berlin Subdivision Corridor Inset 3, North Yarmouth-Yarmouth-Cumberland

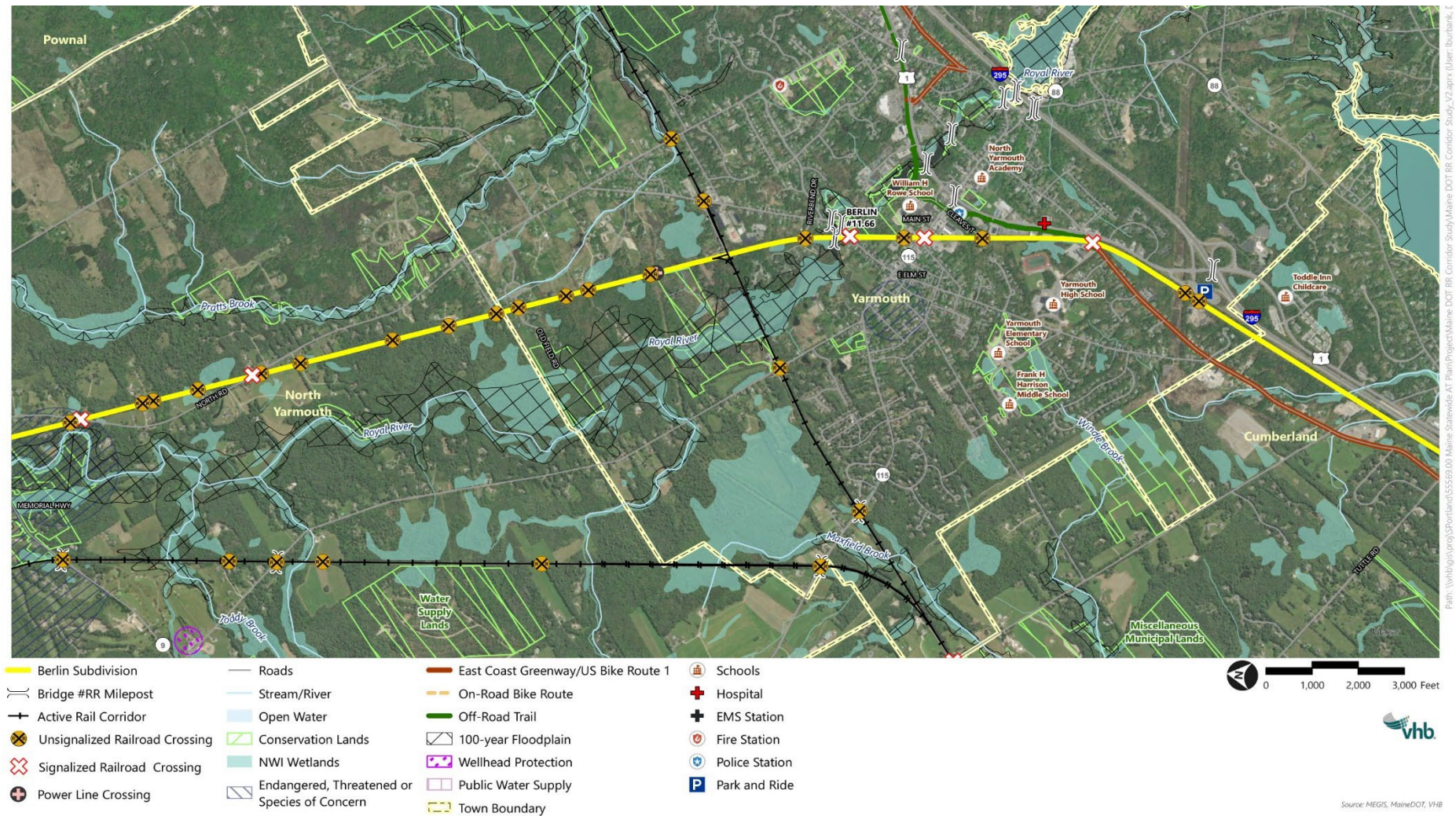




Figure 5: Berlin Subdivision Corridor Inset 4, Cumberland-Falmouth

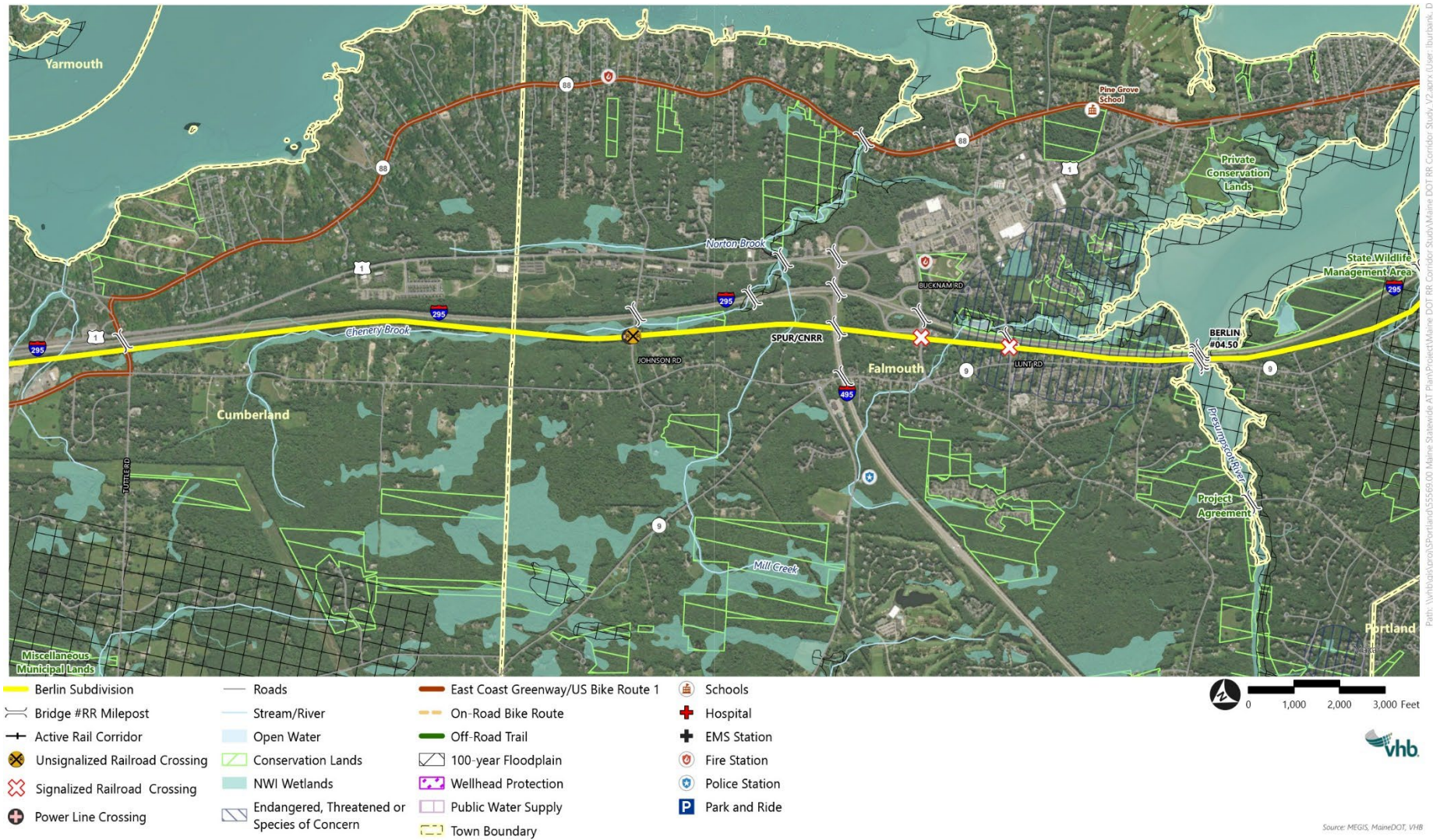




Figure 6: Berlin Subdivision Corridor Inset 5, Falmouth-Portland





## EXISTING CONDITION CROSS SECTIONS

Figure 7: Just north of Rt. 231/Intervale Road, New Gloucester

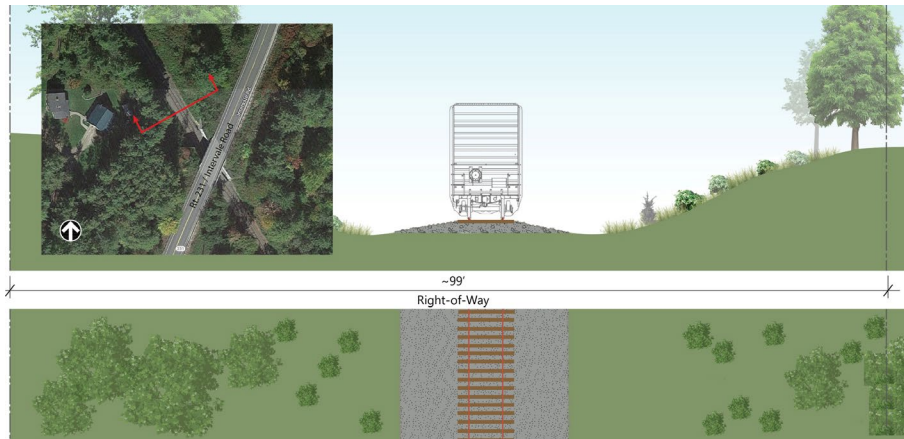


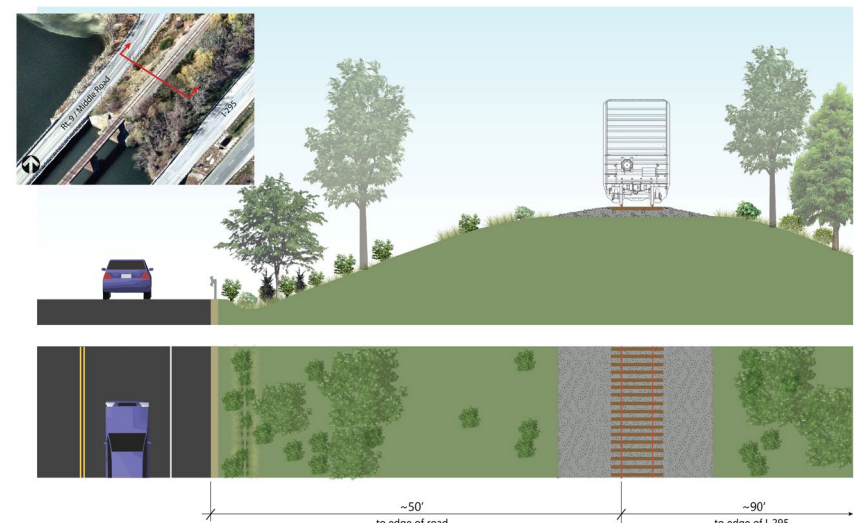
Figure 8: Just south of Elm Street crossing, Yarmouth



Figure 9: Adjacent to and parallel with Rt. 9/Middle Rd., Falmouth



Figure 10: Adjacent to Rt. 9/Middle Rd., Falmouth (just north of bridge)



## Assessment of Study Area Environmental Challenges

As part of the feasibility study, VHB conducted a desktop-level GIS analysis to identify any potential impacts to adjacent natural resources. Desktop data sources included: US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapping; Inland Waterfowl and Wading Bird Habitat (IWWH), Tidal Waterfowl and Wading Bird Habitat (TWWH), Endangered, Threatened and Concerned Wildlife Habitat, and Significant Vernal Pools as mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) Beginning with Habitat web-based map viewer; and FEMA Flood Zone Layers (MEGIS & FEMA). Desktop-level GIS analyses are limited in nature due to the availability and quality of publicly available natural resource data and should not be used for permitting purposes. However, these data are a great tool that can be used to approximate resource areas and abundance, estimate potential impacts, and inform the evaluation of the feasibility of alternatives.

In the next chapter, the environmental analysis of the multiple alternatives for the Berlin Subdivision Rail Corridor is summarized, including the restoration of rail service, establishment of interim trail use, and permitting requirements related to wetlands and sensitive habitats.

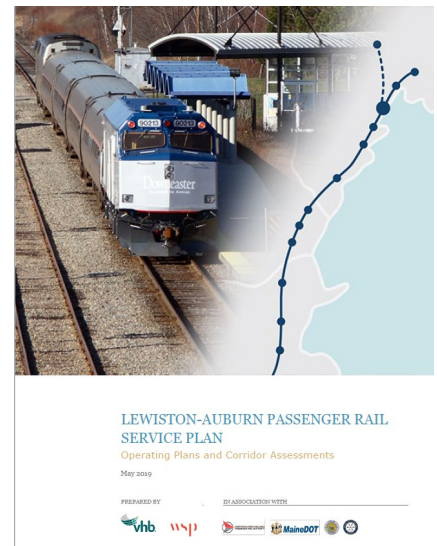
## 1.3 Previous Planning Reports and Studies

Two previous studies were referenced in this Berlin Subdivision Rail Corridor Study, including:

### Lewiston-Auburn Passenger Rail Service Plan: Operating Plans and Corridors Assessments (2019, VHB with subconsultant WSP)

The 2019 VHB & WSP Lewiston-Auburn Passenger Rail Service Plan examined potential establishment of passenger rail service between the downtown Lewiston and Auburn area into Portland. This study focused on answering three primary questions: if a passenger rail connection were provided between Lewiston-Auburn and Portland: 1) How many people would ride it; 2) What would it look like; and 3) How much would it cost?

Portions of the subject Berlin Subdivision were included in the multitude of route alternatives that were evaluated for consideration to support a passenger rail service between the two regions. The route alternatives also considered portions of the Pan Am Railways (PAR) Freight Main Line (FML), recently acquired by CSX. The 2019 report documents the identification of the alignment alternatives considered, selection of Preferred Alignments for additional consideration and analysis during the Study, an evaluation of the modes and vehicle technologies that were considered to support a future passenger service, an assessment of the existing rail infrastructure and identification of improvements that would be needed to support implementation (including key





challenges and constraints), as well as capital costs and operation and maintenance costs. This information was used to evaluate and compare each of the Preferred Alternatives.

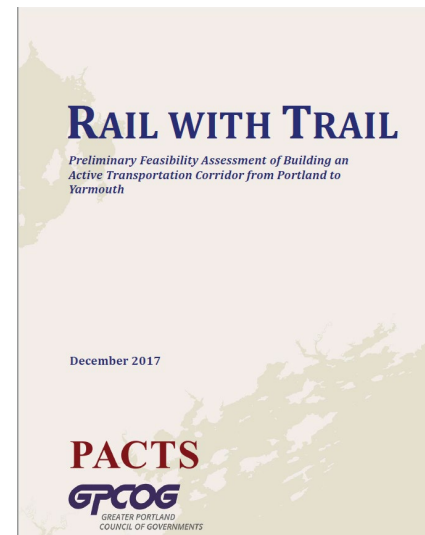
All of the Preferred Alternatives utilized the existing FML from the downtown Lewiston/Auburn area to Danville Junction. The Preferred Alternatives also considered alternative destinations within Portland, including the Portland Transportation Center (located on the PAR FML, presently utilized by the Amtrak Downeaster service) as well as a new terminal station located at Ocean Gateway, along the Portland Waterfront. The route to Ocean Gateway utilized the entirety of the State-owned portion of the Berlin Subdivision, while the northern section between Danville Junction and Yarmouth Junction was also used for consideration to provide connection to Portland Transportation Center.

### **Rail with Trail: Preliminary Feasibility Assessment of Building an Active Transportation Corridor from Portland to Yarmouth (2017, Greater Portland Council of Governments)**

The 2017 Greater Portland Council of Governments (GPCOG) Rail-with-Trail Study Area included a ten-mile stretch of rail running north from Portland, through Falmouth and Cumberland, to Yarmouth. The rail right-of-way (ROW) is approximately 99 feet wide in most places – 55 feet to the west and 44 feet to the east of the center of the existing tracks. The railroad follows the St. Lawrence and Atlantic railway and parallels the I-295 highway for most of the length of the ten-mile corridor.

Rail use within the designated Study Area is currently discontinued, although the physical tracks remain. Were rail use to resume, it would be limited to 25 miles per hour for freight service. This rail line has been used to transport freight in the past, most recently ferrying raw materials to the Portland baked bean factory, B&M. Freight service concluded in 2015 and no rail service has run on the line since. The Portland Yacht Center currently leases a portion of the track between their facility at Mile Post 1.8 to Mile Post 2.45 (approximately located behind the Eldredge Hardware building, north of the private roadway crossing). The Yacht Center uses the tracks to bring large boats and equipment into and out of their facility that otherwise would not be feasible through use of their driveway entrance.

The tracks in the Study Area run through four municipalities and cross five bridges, six large culverts, and nine roads. There are physical and environmental constraints to adding a multi-use trail next to the existing rail ROW. Physical constraints include crossing the Presumpscot River, going under the Falmouth Spur, and areas where the ground slopes steeply away from the railbed. Construction requirements appear to be more amendable on the west side of the existing tracks. MaineDOT has minimum standards for the development of a trail next to a rail, including a required set-back of 15 feet from the rail. DOT can grant exceptions, but will not compromise safety, efficient rail line operations, or maintenance. Currently, no multi-use trail exists in any portion of the rail property and walking or biking on the rail ROW is prohibited.



## 1.4 Summary of Findings

The consultant team developed conceptual cost estimates for the three corridor alternatives described earlier, running from Ocean Gateway to the Auburn/New Gloucester line including:

- › **1: Restore Rail Service on Existing Corridor** – including freight rail operations (along Class 1-2 track) and Passenger rail service (along Class 3 track)
- › **2: Interim Trail until Rail (TUR)** – remove existing track, construct trail on existing rail bed (either gravel/stone dust or paved)
- › **3: Rail with Trail (RWT)** – construct trail adjacent to the existing tracks and within the current state-owned ROW (either gravel/stone dust or paved)

**Table 1: Conceptual Cost Estimate Summary**

Alternative	Segment	Cost Estimate
0: Maintain/Preserve Existing Corridor		
Narrow Gauge RR Operations	1: MP 0.0 to 1.3	No additional cost beyond current maintenance
MaineDOT Patrol & Repairs	2: MP 1.3 to 26.5	
1: Restore Rail Service on Existing Corridor		
1A: Freight Rail Service (Class 1-2)	1: MP 0.0 to 1.7	NA
	2: MP 1.7 to 26.5	\$13,400,000 - \$31,000,000
1A TOTAL		\$13,400,000 - \$31,000,000
1B: Passenger Rail Service (Class 3)	1: MP 0.0 to 1.7	\$60,000,000
	2: MP 1.7 to 26.5	\$214,000,000
1B TOTAL		\$274,000,000
2: Interim Trail Until Rail (TUR)		
2A: Gravel/Stone Dust Trail	1: MP 0.0 to 1.7	\$19,100,000
	2: MP 1.7 to 26.5	\$28,400,000
2A TOTAL		\$47,500,000
2B: Paved Trail	1: MP 0.0 to 1.7	\$19,200,000
	2: MP 1.7 to 26.5	\$35,800,000
2B TOTAL		\$55,000,000
3: Rail with Trail (RWT)		
3A: Gravel/Stone Dust Trail	1: MP 0.0 to 1.7	\$19,300,000
	2: MP 1.7 to 26.5	\$70,700,000
3A TOTAL		\$90,000,000
3B: Paved Trail	1: MP 0.0 to 1.7	\$19,300,000
	2: MP 1.7 to 26.5	\$75,000,000
3B TOTAL		\$94,300,000

(See the next chapter for the assumptions used when determining estimated costs.)

Once the Berlin Subdivision RUAC selects the preferred option to recommend to the Commissioner, further study and analysis beyond the level of detail within this study will be required to determine:

- › more detailed cost estimates
- › level of interest in taking advantage of potential freight rail service from local businesses and/or regional industries
- › opportunities to establish a Foreign Trade Zone (FTZ) either on or adjacent to the corridor
- › potential operators for passenger rail service
- › (Optional) More-detailed economic, environmental, and transportation impacts and benefits (see below for high level baseline of economic impacts)

This study included an economic impact analysis of the various options for the state-owned rail corridor. While more detail can be found in both Chapter 4 and the Appendix, the key take-aways include:

- › Based on IMPLAN modeling, the direct investments in any of the scenarios will have ripple effect through the regional and state economy (though varying with each alternative)
- › Related to the preservation of the corridor with restoration of rail service
  - Development potential exists at future passenger rail stations (specific sites TBD), especially for housing and mixed-use buildings (leading to economic benefits for the communities along the corridor)
  - Either freight or passenger rail service will induce increased employment and economic activity
  - Passenger rail service will provide a commuting alternative between Lewiston/Auburn and Portland and could lead to reduction of motor vehicle traffic, emissions, and transportation costs (though a more robust transportation study is needed to understand the level of impact)
- › Related to conversion of the corridor for interim trail use (either TUR or RWT configuration)
  - A strong baseline of potential trail users exists along the corridor based on socio-economic metrics, area population density, and demand for walking and bicycling facilities
  - Potential for increased consumer activity by trail users could lead to \$3.5m to \$5.3m in annual spending, depending on level of activity by snowmobilers
  - Offering expanded recreational facilities, an interim trail will encourage more active lifestyles and lead to reduced health care costs
  - Presence of either a TUR or a RWT has potential to show a positive fiscal impact on residential property values along the corridor



# 2

## Evaluation of Corridor for Rail Use

This Section documents evaluation of the State of Maine owned portion of the Berlin Subdivision corridor for potential future rail use, including an assessment of the existing conditions along the corridor as well as development of conceptual capital improvement programs that could be completed to support either reestablishment of freight rail service at varying levels or the implementation of a new passenger rail service on the line.

### 2.1 Maintain Corridor (Current Baseline Conditions)

The St. Lawrence and Atlantic Railroad (SLR) operates over 235 miles of contiguous main line track between Auburn and Ste. Rosalie, Quebec and has rights to operate along the Berlin Subdivision between Portland and Auburn. SLR provides freight service to warehouse distribution, intermodal, and bulk transloading facilities in Maine and provides a key transportation link through Lewiston, Auburn, Mechanic Falls, and South Paris, Maine. SLR's primary commodities include the three key forest products of lumber, pulp, and paper, as well as chemicals, plastics, fuels, and agricultural products.

The portion of the Berlin Subdivision located within the State of Maine is slightly more than 85 miles long, of which approximately 25.7 miles between Danville Junction and Portland is situated on right-of-way owned by the State of Maine and is the subject of this RUAC Study. The State-owned portion of the Berlin Subdivision was previously owned and operated by SLR and is currently out of service. The subject corridor is rendered inaccessible through the installation of a barricade and removal of a short section of rail, demarking the northernmost point of State ownership and preventing trains operating at Danville Junction from entering the State-owned ROW. Much of the track and rail infrastructure on the State-owned section remains in-tact between Danville Junction and the Portland Yacht Center (approx. Mile Post 1.8), while automatic highway crossing warning (AHCW) devices located at roadway at-grade crossings have been disabled and track switch components have been removed from the now out-of-service sidings and spurs previously used to serve customers.

The State-owned corridor starts at Mile Post 0.0 in Portland and runs just past the Auburn/New Gloucester line at Mile Post 26.5, passing through Portland's East Deering neighborhood, Falmouth,

Cumberland, Yarmouth, North Yarmouth, Pownal and New Gloucester. The existing southern end of main line track is located at the Portland Yacht Center, near Mile Post 1.7, at an access road between the Yacht Center and Sherwood Street to the northwest. Historically, the Berlin Subdivision continued south, over Back Cove and into the Portland Waterfront area, ending near the existing Ocean Gateway Pier.

In 1984, the rail swing bridge and trestle at Back Cove in Portland was significantly damaged by fire. The bridge was subsequently placed out of service along with approximately 1.5 miles of track located in the Eastern Promenade. The tracks south of Back Cove are currently used by the Maine Narrow Gauge Railroad and Museum for scenic excursion trips through the Eastern Promenade park and recreation area. There is also a multi-use paved recreational path between the tracks and the Atlantic Ocean.

In 2007 and 2010, MaineDOT acquired portions of the railroad line from SLR. In late 2015, SLR stopped providing service to B&M Baked Beans factory at Mile Post 1.7 in Portland, the only customer south of Danville Junction at the time. The SLR freight service between Auburn and Portland was placed in a status of discontinuance and has remained out of service to this day. MaineDOT currently inspects track conditions via hi-rail at least once per month and performs maintenance activities as needed to ensure that the rail segment remains contiguous, including brush cutting, weed spray, ditching and culvert repairs as needed. . MaineDOT has also completed replacement of the track and surface infrastructure at public grade crossings on an as-needed basis, including at Johnson Road in Falmouth within the past 5 to 7 years.

For the purposes of this RUAC study, the default baseline condition for the Berlin Subdivision corridor is assumed to simply maintain and preserve the state-owned corridor as MaineDOT currently does. It is acknowledged that there is a financial cost to MaineDOT associated with providing this service of maintaining the corridor such that the track infrastructure remains in-tact, but it can be presumed that these activities will continue to occur should neither reestablishment of rail service, construction of an interim recreational trail, or a combination thereof be initiated on this corridor.

## 2.2 Inventory of Existing Corridor

VHB had an opportunity to join MaineDOT during hi-rail inspections performed on November 28, 2019 (during the previous Lewiston-Auburn Passenger Service Rail Study) and on June 23, 2022 to evaluate the general conditions of the existing railroad infrastructure along the Berlin Subdivision. VHB also performed an assessment of the trackage behind Portland Yacht Center and south of Back Cove bridge along Eastern Promenade on June 23, 2022. Considering the relatively minimal level of railroad maintenance activities presently performed on the line (less maintenance is needed without trains operating), the track and infrastructure along the out-of-service portion of the tracks north of Portland Yacht Center was observed to be in relatively fair to good condition.

### Existing Track and Rail Infrastructure

The majority of the corridor is a single-track main line with AREMA standard-gauge jointed rail secured to wooden railroad ties, situated upon ballast stone. The existing northern end of the State-owned section sits roughly at the Auburn/New Gloucester line at Mile Post 26.5 with the southerly end of main line track located at the Portland Yacht Center, near Mile Post 1.8, at an access road between the Yacht Center and Sherwood Street to the northwest.

Portions of the track that ran through the Portland Yacht Center property (south of Mile Post 1.8) have

since been removed, though the northern portion of the Back Cove Bridge and the track situated on causeway that led to the bridge still remain. The tracks south of the Back Cove bridge are currently used by the Maine Narrow Gauge Railroad and Museum through a lease and operating agreement with MaineDOT for scenic excursion trips through the Eastern Promenade park and recreation area. The narrow gauge (i.e., the distance between the rails) is not consistent with the equipment used by modern railroads.

Several old freight sidings and spurs still exist along the ROW, but most of the switch components (or the switches in their entirety) to these tracks have been removed since there is no active service on the line. The exception being the existing railroad sidings located north of the Yarmouth Junction Diamond and the connection to the CSX Brunswick branch at Mile Post 12.2, which is still intact though portions are overgrown with trees and brush.

Generally, the quality of the existing railroad ties has slightly degraded since VHB's initial inspection of the corridor in 2019, presumably due to exposure to weather and local drainage conditions. Localized areas of embankment washouts were observed along the ROW, but not to the extent that significant erosion has compromised the integrity of the tracks or ROW.

## Signal System

The subject corridor is not equipped with a wayside railroad signal system. In lieu of an operating signal system, railroad movements were managed by timetable and permissions from the Local Train Dispatcher, where the Maximum Authorized Speed did not exceed 25 miles per hour. In Danville Yard, trains may operate on the SLR track within yard limits; however, they cannot foul the SLR track until it is determined that there are no conflicting movements. All movements must operate at Restricted Speed (no greater than 20 mph and capable of stopping within one-half the range of vision short of obstructions and/or other equipment fouling the track, misaligned switches and derails, or any signal requiring a stop). Railroad operating limits and/or methodology would need to be refined accordingly to better accommodate future passenger service based on the routing alignment that is ultimately selected as well as the nature and use of other existing freight-only yard tracks operated by SLR and CSX.

## Grade Crossings

Active AHCW Systems are installed at roadway crossings to warn drivers and pedestrians that a train is approaching the grade-crossing. Approximately half of the twenty-nine (29) publicly accessible at-grade roadway crossings on the Corridor are equipped with active AHCW devices, all of which are currently out of service (turned off). Several of the private and passive crossings are only furnished with crossbucks while others have no signage at all. Due to the relative old age of the crossing devices (some estimated to have been installed circa 1980's) and relatively recent development that has occurred in the region since the grade crossings were last improved, a Diagnostic Team Review (a joint inspection process conducted with representatives of the operating railroad, local and state officials, and railroad design engineers to review and evaluate the crossing location in the field) may be warranted should rail service ever be reestablished to ensure adequate protections are in place at each crossing location. Roadway surface conditions at the crossings varied throughout the corridor from extremely poor to excellent, as several crossing locations are either unpaved or are not equipped with flangeway protecting the rails through the roadway surface.



## Undergrade Bridges & Culverts

There are currently eight (8) ballasted deck bridges and one (1) open timber deck bridge (over Presumpscot River at Mile Post 4.5) north of the Portland Yacht Center. Condition inspection and load rating capacity analysis of bridges were outside the scope of this study. A comprehensive Culvert location list was provided by MaineDOT for the entire corridor. VHB looked for evidence of track and ROW embankment degradation during the hi-rail inspections but did not perform a detailed investigation of culvert conditions along the line.

## 2.3 Conceptual Improvement Programs for Rail Service

For the purposes of this study, VHB developed conceptual capital improvement programs to support the railroad infrastructure improvements for the envisioned service levels supporting freight or passenger rail service on the line. VHB recognizes that the extent of capital improvements that may be performed to support any of the rail service options contemplated may ultimately be dictated by the amount of funding available to support the project or the type of service that is implemented. These estimates were developed for conceptual planning services only and are generally consistent with the parameters assumed during the previous Lewiston-Auburn studies. Ultimately, the associated parameters for the capital infrastructure improvements would be further established, defined, and optimized should it be decided that any rail corridor improvement projects move forward.

Low-end and high-end program cost estimates were developed using historical data obtained from comparable railroad improvement projects completed within the State of Maine over the past ten (10) years. Additional details regarding this process are discussed in Section 2.7 of this report. VHB had the benefit of previously evaluating the corridor in conjunction with the Lewiston-Auburn Passenger Rail Study.

## 2.4 Reestablishment of Freight-Only Rail Service

VHB developed low-end and high-end conceptual estimates for infrastructure improvements envisioned for the support for reestablishment of Freight Service on the line maintained to either Class 1 or Class 2. It was assumed that freight-only tracks would remain as a single main line, primarily utilizing the existing jointed rail. At the direction of MaineDOT, it was assumed that the section of Berlin Subdivision south of Portland Yacht Center (Mile Post 1.8) would not be rehabilitated to support freight service, as this section of track has not been serviced by freight since 1984 and it is not envisioned that a future potential freight customer will be located along the Eastern Promenade or the Portland Waterfront. As such, the capital cost estimates for reestablishment of freight service are not burdened with the costs associated with rehabilitation or reconstruction of the swing/draw bridge over Back Cove, nor the reconstruction of the existing tracks along the Eastern Promenade south to Ocean Gateway (Mile Post 0.0). Additionally, the costs associated with installation of new spur tracks to serve future customers were not included in the freight-only service concepts.

For both sets of freight alternatives, it was assumed that the entirety of the existing track along the corridor would be aligned and surfaced through the addition, regulation (spreading) and tamping of ballast stone beneath the tracks. VHB also assumed that ROW expansion and/or the reconstruction of overhead bridges will not be required.

Additionally, both the low-end and high-end alternatives envision reconstruction of two new run-around tracks within the existing ROW near the southerly end of the corridor in the East Deering neighborhood of Portland. The runaround tracks would allow for temporary storage of railcars as well as provide operational flexibility for the freight service operator to allow a locomotive to change ends of a trainset.

Lastly, since detailed structural bridge inspection and load rating services were not performed, both alternatives provide an identical approximately \$800K allowance to accommodate structural work on undergrade bridges, including possible open deck tie replacement on the Presumpscot River bridge or other abutment or superstructure repairs on the eight bridges, should these needs be identified in the future.

The differences between the low-end and high-end freight only program estimates are summarized in the table below. Both programs include a varying amount of deteriorated spot tie replacement (as indicated in the table) and spot rail removal and replacement.

It should be noted that Sperry rail testing, used within the rail industry to detect track defects, has not been performed as part of the corridor evaluations to date. For the purposes of the low-end and high-end estimate, a representative proportion of the 6-miles of curved track, where rail wear is typically to occur more frequently, was assumed for replacement. Future Sperry testing could be performed and the data used to determine exactly where partial rail replacement would need to be performed when infrastructure improvements are programmed, and the results of which may alter the quantities of rail replacement assumed for these concepts.

The high-end estimate also assumed reconstruction of the freight yard tracks located north of Yarmouth Junction near Mile Post 12.2 to Mile Post 13.0. The high-end estimate also includes replacement of the existing wooden-planked decks at the eighteen (18) farm crossings (excluded from the low-end estimate) as well as a greater amount of at-grade crossing rehabilitation (the low-end assumed track and roadway surface replacement and AHCW device upgrade at a handful of select locations while the high-end assumed that upgrades would be performed at all public roadway at-grade crossings that are currently unpaved). Lastly, the high-end estimate provides a greater allowance to cover various levels of culvert work, from minor rehabilitation to complete replacement. Since the exact number and locations of culverts requiring rehab is unknown, the estimate assumes that between 5%-30% of culverts will need replacement.

Further details regarding the cost estimates generated to support conceptual programs developed during this study are attached as Appendix A of this report.

**Table 2: Components for Cost Estimating - Freight**

<b>Component</b>	<b>Class 1 or 2 Freight: MP 1.7 to MP 26.5</b>	
	<b>Freight Only – Low End</b>	<b>Freight Only – High End</b>
Tie Replacement	375 ties/mile	625 ties/mile
Rail Replacement	2 track miles	4 track miles
Freight Service Tracks	East Deering Only	East Deering & Yarmouth Junction
XING Rehabilitation	\$1.6M	15 XINGs (all unpaved)
Farm XING Decks	NONE	18 (All Existing Locations)
Culvert Rehab	5% (7 Locations)	30% (42 Locations)

## Environmental and Permitting Considerations: Freight Rail Service

As part of this study, VHB evaluated the potential environmental impacts and permitting requirements needed to reestablish freight rail service along the existing Berlin Subdivision Rail Corridor from Ocean Gateway (MP 0.0) to the Auburn/New Gloucester line (MP 26.5). Because this existing corridor is currently maintained by MaineDOT and was originally used for freight rail service, it can be assumed that no expansion of the corridor is required and therefore no new wetland impacts would be necessary with this alternative. A field delineation of wetland areas and more specific project information would be required to confirm this alternative meets this assumption.

The existing rail corridor crosses one section of mapped Open Water, two rivers – the Presumpscot River and the Royal River, and 22 streams mapped within the defined study area. The current condition and quality of the existing infrastructure associated with these water crossings has not been evaluated as part of this feasibility study. Repair or replacement of these bridges and culverts may lead to wetland or waterway impacts; however, these impacts cannot be quantified at this time through a desktop-level analysis. Additionally, any proposed work associated with improving existing culverts or bridges may require permit approvals or agency consultations to determine if these activities may be considered exempt from regulation.

## 2.5 Implementation of Passenger Rail Service

There has been extensive study of possible passenger rail service between Portland and Lewiston-Auburn (L-A) area over the years, some of which have included use of portions of and/or the entire State-Owned portion of the Berlin subdivision between Portland and Danville Junction. In May 2019,



VHB issued the Operating Plans and Corridor Assessments Report which summarized a comprehensive evaluation of what types of service could be provided to meet travel demand/patterns (including route alignment, service frequency, vehicle type, etc.), as well as the estimated costs to build and operate a passenger service.

As part of this study, MaineDOT asked VHB to provide cost estimates associated with the capital improvements. The following parameters were assumed to support the concept:

- Achieve a minimum of Class 3 Track Conditions, capable of supporting up to 60 mph passenger service (assume up to 750 ties/mile to be replaced in existing track)
- Replace all existing jointed rail with continuous welded rail (CWR) through the entire corridor.
- Construct 2<sup>nd</sup> Main Line Track where feasible to allow for operation of multiple train sets,
- Positive Train Control including Cab Signaling (federally required for any rail lines with passenger service of more than six round trips per day)
- Complete rehabilitation (new track, pavement, and modernized AHCW devices) at all public at-grade crossings
- Other than passenger station platforms, no obstructions and/or supports for overhead bridges located within 9 feet of the track centerline. Vertical clearance at existing bridges would need to be maintained to existing conditions, while any new construction would be required to provide 22'-6" above top of rail.
- Replacement of timber decks at all (18) existing farm crossings
- Replacement of all ballasted deck undergrade bridges in proposed double-track territory and replacement of all ties on Presumpscot River Bridge
- Repair or replacement work at 30% of the culvert locations

To maintain consistency with previous studies, including the 2019 Lewiston-Auburn Passenger Rail, it was assumed that traditional Commuter Rail would be the preferred mode for the passenger service for purposes of the estimate. Because this study is an evaluation of what is necessary to improve the existing state-owned infrastructure in the corridor, the additional costs for passenger station construction and any improvements beyond the boundary of state ownership at Danville Junction, including any improvements required on the CSX-owned portion required to access the downtown Lewiston/Auburn areas, were not included in this RUAC study.

Unlike the assumptions made to support the freight rail concepts, should this corridor be utilized for passenger rail, there would likely be demand for service to the Portland waterfront area. Therefore, the cost associated with rehabilitation or reconstruction of the swing/draw bridge over Back Cove and the reconstruction of the existing tracks along the Eastern Promenade south to Ocean Gateway (Mile Post 0.0) were included in the estimate for the conceptual program to support a passenger rail service on the line.

## Environmental and Permitting Considerations: Passenger Rail

VHB also evaluated the potential environmental impacts and permitting requirements needed to establish passenger rail service along the corridor. Redeveloping the rail for passenger service would require expansion of the rail embankment and construction of new sections of siding that would allow for the passage of two trains at once, as such, this alternative would require disturbance of adjacent wetlands, unlike the Freight Only alternative. These sections would be required along certain portions

of track where new siding is necessary. The construction of new siding would involve an estimated 10-foot expansion of the existing corridor width to the north and west of the existing rail embankment. A corridor expansion of this size would have impact in multiple locations and would result in approximately 9,000 feet of linear impact and approximately two (2) acres of impact to wetlands.

Additional wetlands impacts are anticipated where existing bridges will be replaced to accommodate double track sections. The extent and nature of these impacts cannot be readily determined, as bridge replacement design parameters need to be advanced to a suitable level of design.

Impacted wetland types would consist of freshwater forested, scrub shrub, emergent, riverine, and floodplain wetlands, as well as estuarine and intertidal wetlands. As NWI wetland mapping historically underrepresents wetlands, a field delineation for wetlands, waterways and vernal pools would be necessary to properly quantify the actual level of potential impacts associated with this alternative.

## 2.6 Summary of Conceptual Cost Estimates

As documented above, conceptual cost estimates considered the costs associated with reestablishment of freight service (low-end and high-end) and implementation of passenger service on the State-owned portion of the Berlin Subdivision from Portland's Ocean Gateway (MP 0.0) to the Auburn/New Gloucester line (MP 26.5). Conceptual program cost estimates were developed as part of the Lewiston-Auburn study using historical data obtained from comparable railroad improvement projects completed within the State of Maine over the past ten (10) years.

Unit costs of infrastructure improvements developed during the Lewiston-Auburn study were adjusted from 2108 dollars to 1<sup>st</sup> quarter 2022 dollars using heavy construction inflation factors derived by R. S. Means (x1.277 inflation factor).

The freight only option includes a bare-minimum low-end estimate to bring the corridor up to Class 1 railroad service, and a high-end estimate that provides an improved standard of Class 2 freight rail service. This includes the corridor from Mile Post 1.7 to Mile Post 26.5. As documented in the above Sections, both Freight-only options exclude replacement of the Back Cove bridge and trackage into Portland's waterfront. These costs were included in the Passenger Rail service Option.

**Table 3: Potential Restoration of Rail Service Cost Estimates**

Total Estimated Costs for Conceptual Infrastructure Program Improvements		
Freight Rail, Class 2, MP 1.7 to 26.5 (East Deering to the Auburn/New Gloucester line)	Low End Cost	<b>\$13,400,00</b>
	High End Cost	<b>\$31,000,000</b>
Passenger Rail, Class 3, MP 0.0 to 26.5 (Ocean Gateway to the Auburn/New Gloucester line)	MP 0.0 to MP 1.7 (includes new Back Cove Bridge)	\$60,000,000
	MP 1.7 to 26.5	\$214,000,000
	<b>TOTAL (MP 0.0. to 26.5)</b>	<b>\$274,000,000</b>



# 3

## Evaluation of Corridor for Trail Use

Recognizing public support for using inactive rail corridors for human-powered transportation and recreation, the study team considered opportunities to incorporate interim and permanent trail alternatives along the Berlin Subdivision corridor. To develop cost estimates for interim trail use, the team took into account both the replacement of the current rail infrastructure for a trail, and the engineering requirements to develop a trail adjacent to the existing rail line.

### 3.1 Introduction

To understand the costs associated with the future development of a trail (aka shared use path) along the rail corridor, the team looked at two options:

- **Interim Trail until Rail (TUR)** – remove existing track and construct multi-use trail on existing rail bed (either gravel/stone dust or paved)
- **Rail with Trail (RWT)** – construct permanent multi-use trail running adjacent to the existing tracks and within the current state-owned ROW (either gravel/stone dust or paved)

The TUR and/or RWT options, depending on context, could be restricted to either non-motorized use only (with most e-bikes permitted), or allow motorized uses such as snowmobiles and possibly ATVs. In any of the scenarios, the potential for future rail service must be maintained by State Statute. Therefore, any interim trail could potentially be removed in the future to make way for rail service. State law via the State Railroad Preservation Act<sup>2</sup> (RPA) provides MaineDOT the right of first refusal to purchase a rail corridor if rail service has ceased or is proposed for abandonment. While any purchase by MaineDOT under the RPA is intended for rail transportation, through the RUAC process, interim trail use is permissible.

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<sup>2</sup> For more information, see: <https://legislature.maine.gov/legis/statutes/23/title23ch615sec0.html>

## 3.2 Methodology and Assumptions

The conceptual project cost estimates for the TUR and RWT alternatives were developed using construction costs from recent, similar trail projects. For each alternative, costs were determined for the trail construction, grade crossing upgrades and bridge improvements. Costs were estimated for both stone dust/gravel and paved wearing surfaces for both TUR and RWT configurations. Each alternative includes 30% construction contingency, 10% design engineering and 15% construction administration and engineering. Potential additional costs for right of way impacts or environmental permitting were not included.

Because trail crossing improvements are required at all public grade crossings, for the purposes of this high-level study, the typical treatment at each crossing is based primarily on the speed of the roadway crossing the trail. In future phases of this project, the assignment of which approach has the right-of-way priority and other crossing improvement recommendations should be designed for site-specific traffic volumes, anticipated path volumes and roadway geometrics at each crossing. The assumed safety improvements at each crossing include:

- › At roadways with speed limits of 30 MPH or lower, the typical treatment includes a marked crosswalk and trail crossing warning sign assemblies on the roadway and roadway crossing warning signs on the trail.
- › At roadways with speed limits of 35 MPH or 40 MPH, the typical treatment includes a marked crosswalk, and trail crossing warning sign assemblies on the roadway, roadway crossing warning signs on the trail and rectangular rapid flashing beacons (RRFB) on the roadway approaches.
- › In accordance with MaineDOT policy, a marked crosswalk is not permitted on roadways with a speed limit of 45 MPH or greater unless the crossing is signalized. At roadways with speed limits of 45 MPH or greater, the typical treatment includes trail crossing warning sign assemblies at the crossing, advanced trail crossing warning sign assemblies and pavement markings (i.e. TRAIL XING) on the roadway approaches, advance roadway crossing warning signs and markings on the trail approaches and a STOP condition on the trail approaches.

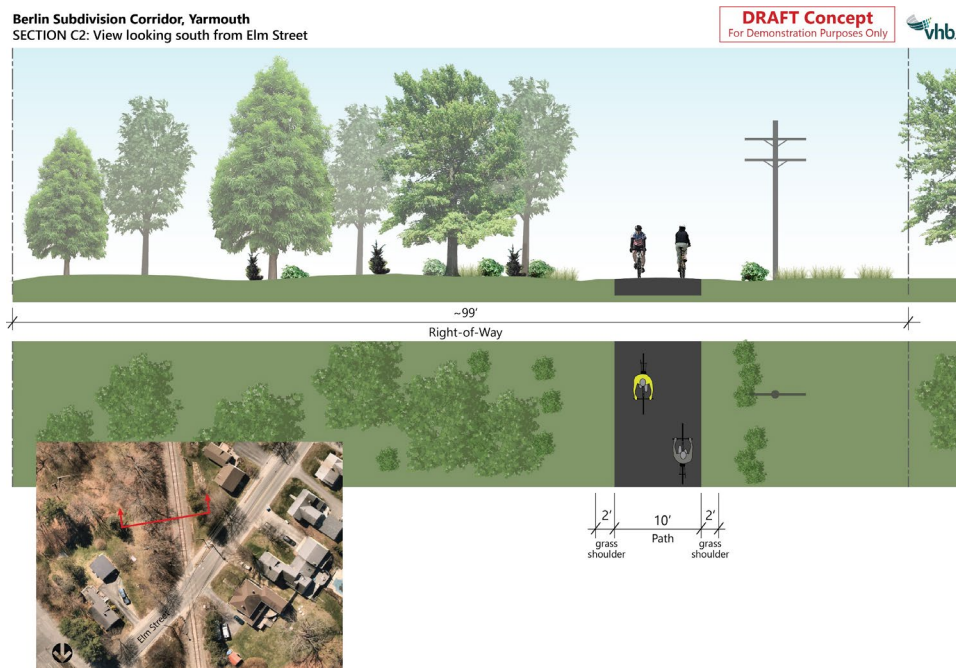


## Interim Trail-until-Rail (TUR) Design Assumptions

- › Replacement of existing rail line with interim trail use (see photo at right and graphic below).
- › Estimated costs for the trail construction include removal of the existing track, surfacing and regrading of the existing ballast, and placement of either stone dust/gravel or pavement.
- › Estimated costs for the undergrade bridge improvements generally include construction of a new timber wearing surface and timber bridge rails.
- › The trail will utilize the same alignment as the removed track and therefore modifications to the existing overhead bridges are not anticipated.
- › Estimated costs do not include any potential parking facilities, information kiosks, or other elements associated with formal trailheads.



*Example Trail-until-Rail configuration (Down East Sunrise Trail)*

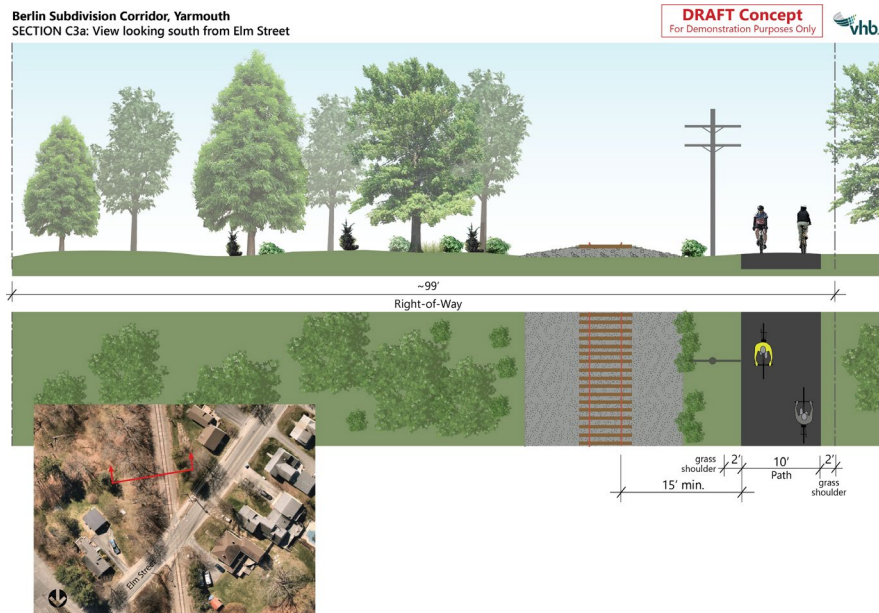


## Rail-with-Trail (RWT) Design Assumptions

- › Construction of a permanent trail adjacent to the existing rail line incorporating a minimum 15' offset<sup>3</sup> from edge of trail to centerline of the tracks, consistent with MaineDOT guidelines (see photo at right and graphic below).
- › Estimated costs for the trail construction include assumptions for 1) areas with no significant cut or fill, 2) areas with a modest amount of cut or fill, and 3) areas of significant cut or fill sections that may require retaining walls. For each section, costs include preparation of the subbase and placement of either stone dust/gravel or asphalt pavement.
- › Retaining walls and other engineered elements will allow future rail-with-trail design to stay within the state-owned railroad ROW.<sup>4</sup>
- › Estimated costs for undergrade bridge (i.e., bridge that carries the rail tracks) improvements generally include construction of new adjacent superstructures that carry the new trail. Based on the configuration of the existing bridges, the new superstructures can be supported by existing structure or supported on new substructure.<sup>5</sup>
- › Estimated costs for overhead bridges (i.e., bridges that carry roadways over the rail tracks) include constructing a new bridge that is wide enough to allow rail and trail where the existing bridge clearance is insufficient.
- › Although not included in the cost estimate, a more-detailed feasibility study could assess opportunities for the trail to run off-corridor and use nearby, parallel roadways to accommodate



*Example Rail-with-Trail configuration (with MaineDOT-approved 10'-6" offset and fence) in Ellsworth*



<sup>3</sup> Represents MaineDOT's standard recommended offset from existing rail lines. In constrained conditions, a reduced 10'-6" offset is permitted with the provision of a security fence. Any subsequent feasibility study and/or design project would need to determine if the reduced offset would be appropriate. This may have an impact on the anticipated cost estimate.

<sup>4</sup> Any survey or verification of railroad ROW is not included within the Scope of Work. This assumption should be confirmed in subsequent design phases of a future project.

<sup>5</sup> In this context, "superstructure" refers to structural members of the bridge that sit above the supports, e.g., girders and trusses, and "substructure" refers to the piers and abutments that hold up the superstructure.

pedestrians and bicyclists. This could be a significant cost savings in discrete locations such as at overhead bridges without sufficient clearance for rail-with-trail. Note: evaluation of off-corridor alternatives was beyond the scope of this study.

- › Estimated costs also do not include any potential parking facilities, information kiosks, or other elements associated with formal trailheads.

### 3.3 Berlin Subdivision Corridor Cost Estimates

The cost estimates below include a stone dust/gravel surface and an asphalt paved surface options for both the interim TUR and permanent RWT alternatives. In all cases, the various options run from MP 0.0 at Ocean Gateway in Portland to MP 26.5, just north of the Auburn/New Gloucester line. Similar to the estimates for restoration of freight and/or passenger rail service, no cost estimates are included north of the state-owned segment, i.e., from the Auburn/New Gloucester line to Downtown Lewiston-Auburn. The state-owned segment is broken into two parts to distinguish the portion of the corridor that includes the challenge of replacing the swing bridge over the Back Cove. Because a trail already exists along the rail line in the Eastern Promenade park, the new bridge accounts for nearly all of the MP 0.0 to 1.7 cost estimate.

**Table 4: Potential Interim Trail Use Cost Estimates**

<b>Berlin Subdivision Corridor Trail Alternatives</b>	<b>MP 0.0 to 1.7</b>	<b>MP 1.7 to 26.5</b>	<b>TOTAL Cost</b>
Interim TUR with Stone Dust/Gravel Wearing Surface	\$19,100,000	\$28,400,000	\$47,500,000
Interim TUR with Asphalt Wearing Surface	\$19,200,000	\$35,800,000	\$55,000,000
RWT with Stone Dust/Gravel Wearing Surface	\$19,300,000	\$70,700,000	\$90,000,000
RWT with Asphalt Wearing Surface	\$19,300,000	\$75,000,000	\$94,300,000

### 3.4 Potential Trail Use Estimates

The Potential Use Estimates task includes extraction and review of data from shared use paths and rail trails in similar contexts to the Berlin Subdivision corridor. The resulting data has been refined to calculate both high and low usage estimates for interim trail usage in the corridor during “peak month” of pedestrian and bicycle use (i.e., 30-day period in summer or early fall).



## Methodology

VHB used existing data to establish the respective context, identifying the precedent trails' location, population, development patterns, mileage, and nearby destinations. Existing trail usage data includes non-motorized trail-user counts recorded before and during the first two years of the COVID-19 pandemic, during which time there were spikes in trail usage nationwide. Existing trails selected for this task include shared-use paths, rail-to-trail, and rail-with-trail examples.

Case study pedestrian and bicycle usage counts from three existing trails in Maine included:

- › Maine's Kennebec River Rail Trail
- › Maine's Eastern Trail in Scarborough
- › Maine's Mountain Division Line (both the Fryeburg segment and the Windham segment)

Because available count data was collected during different months and for different durations (10-day counts, two-week counts, etc.), a thirty-day period called the "Peak Month" was extrapolated for each trail. The goal is to have Peak Month trail use for each trail that could be used as an "apples to apples" comparison between the seven case studies.

## Trail Use Estimates

The three trails described above were selected as case study corridors based on three key trail characteristics that correlate with use by pedestrians and bicyclists:

- › corridor length, in miles
- › population of towns along the trail corridor
- › number of destinations (state parks and beaches, other multi-use trails, and town/village centers) within ½ mile of the corridor center line.

Averages for each of the three key characteristics were calculated and compared with current conditions along the Berlin Subdivision corridor. A multiplier was calculated after comparing data from the average of the three case study trails with the available data for the Berlin Subdivision. Finally, a 10% add-on was included with each corridor to account for mid-term growth in trail use based on modest population increase and increased demand for trail use that arose during the COVID-19 pandemic that is expected to continue.

Per the estimated Peak Month trail trips above, the planning team calculated Annual Trips, based on a multiplier for all 12 months relative to the Peak Month. The multiplier was estimated based on typical monthly temperature and precipitation levels, length of daylight hours, and seasonal recreational patterns. Therefore, relative to the Peak Months of June through September, the proportion of estimated trips for the other 8 months of the year include:

- › 75% of peak in October and May
- › 40% of peak in March, April, and November
- › 25% of peak December through February (walking, bicycling, cross-country skiing, and snowshoeing).

The Peak Month, therefore, represents 13.3% of the annual total (i.e., the Peak Month is multiplied by 7.5 to arrive at the annual estimate). The low-use and high-use range in the tables below reflect a 20% margin of error on the resulting estimate.

**Table 5: Estimated Trips for the Berlin Subdivision Corridor**

SATP corridor	Low use estimate	High use estimate
Berlin Subdivision Peak Month Use	17,300	26,000
Berlin Subdivision Annual Use	129,750	195,000

## 3.5 Environmental and Permitting Considerations

### Interim TUR

The TUR option is designed to be built over the existing rail embankment. As a result, construction of the multi-use trail is assumed to occur only within the existing rail bed and road crossings and no expansion of the rail corridor would be necessary. The existing railbed is considered upland for the purpose of this desktop review; therefore, it is assumed there would be no wetland impacts associated with this option. More detailed project information and field delineation of wetlands would be required to confirm this assumption. The existing rail corridor crosses one section of mapped Open Water, two rivers – the Presumpscot River and the Royal River, as well as 22 streams mapped within the defined study area. Sizing, condition and quality of the existing infrastructure associated with water crossings has not been considered in this feasibility study. Repair or replacement of these crossings may lead to wetland impacts which cannot be quantified at this time through a desktop analysis. Additionally, any proposed work associated with improving existing culverts or crossings may require permit approvals or agency consultations to determine if these activities may be considered exempt from regulation.

### RWT (potential future freight rail service)

A RWT alternative with potential restoration of freight rail service would require expansion of the corridor and therefore a significant amount of wetlands and waterways impact would be anticipated. For this alternative, the proposed permanent corridor expansion would remain within the State of Maine’s current ROW and be approximately 25 feet in width on the west and north sides of the existing railbed. This proposed width includes construction of the multi-use path, as well as the fill and grade changes necessary to expand the rail embankment. A corridor expansion of this size would result in roughly 14,000 linear feet of disturbance to wetlands adjacent to the existing railbed and an estimated eight (8) acres of wetland impacts.

### RWT (potential future passenger rail service)

A RWT alternative with potential restoration of passenger rail service would require both the construction of new track siding through certain rail sections for the conversion to passenger rail, as well as the expansion of the corridor for the construction of the multi-use trail. As a result, this alternative would be anticipated to result in the most significant wetland impacts of all the options. For this alternative, the corridor expansion width would be an estimated 25 feet in areas where new

siding for the passenger rail is not required and 35 feet in sections where new siding is required. The proposed expansion areas would accommodate construction of new siding and the multi-use path, as well as the fill and grade changes necessary to expand the rail embankment. This alternative would result in an estimated 14,000 linear feet and approximately ten (10) acres of wetland impact.

## Wetlands of Special Significance and Sensitive Habitats

All alternatives which involve expansion of the rail corridor or in-water work could involve impacts to State of Maine Natural Resource Protection Act (NRPA) designated Wetlands of Special Significance (WOSS). Confirmation of the presence of WOSS wetlands and impacts would be based on field data collection conducted as part of any future study or permitting effort.

The expansion of the corridor necessitated by the RWT alternatives would potentially impact a state-mapped Significant Vernal Pool (SVP) that is located along the project's extent. A field survey by a qualified biologist would be necessary to confirm the presence/absence of vernal pools and the extent of any additional SVPs.

The existing corridor passes through other mapped sensitive habitats, including two (2) state listed endangered species polygons (Least Bittern and "Rare Animal"), one (1) Inland Wading and Waterfowl Habitat, four (4) Tidal Wading and Waterfowl Habitats, one (1) Maine Natural Areas Program (MNAP) Species of Special Concern area, and two (2) Maine Department of Inland Fish and Wildlife (MDIFW) Species of Special Concern areas. In order to determine the specific listed Species of Special Concern, consultation with IFW and MNAP would be required. Section 9 of the Endangered Species Act (ESA) prohibits the taking (e.g., harm or harassment) of an ESA-listed species. Further, Part 1.1.5 and Appendix D of the 2022 CGP requires determination of eligibility regarding protection of threatened and endangered species, as well as designated critical habitat. Potential impacts to state- and federally-listed endangered species would be assessed through consultation with MDIFW and USFWS and field surveys as needed and to determine potential permitting implications, such as construction timing or disturbance limitations. Although similar protections are not generally required for Species of Special Concern and associated habitat, their presence should be noted during future evaluations for all alternatives.

## Permitting Requirements

The need for federal, state, and/or local permits and approvals depends on numerous factors, such as final location of facilities and project layout, land ownership, equipment used, construction methodology, and presence and proximity of protected natural resources. For all alternatives, consultation with regulatory agencies throughout the planning and development process, along with disclosures of anticipated impacts will assist with identifying the required permits, approvals, and authorizations that may be necessary as project details are advanced and finalized.

Neither the potential restoration of freight rail service or the interim TUR alternatives would require expansion of the existing rail corridor. That would therefore result in minimal environmental impacts and correspondingly less permitting effort compared with potential restoration of passenger rail service or RWT alternatives which would require significant expansion of the existing rail corridor.



However, due to (1) the prevalence of wetlands and streams along the existing corridor and (2) the potential need for improvements to existing wetland and waterway crossings associated with all alternatives, some degree of wetland and waterway impacts that require permit applications and/or agency consultations may be expected for all alternatives.

All alternatives that directly impact (i.e., fill) wetlands or waterbodies would require NRPA and U.S. Army Corps of Engineers (Corps) authorizations. The amount and type of resources impacts would determine the level of NRPA (i.e., Tier level permit or Permit-By Rule) and Corps permitting (i.e., Self-Verification Notification Form, Pre-Construction Notification or Individual Permit) that would be required. Notification to and consultation with the Maine Historic Preservation Commission (MHPC) would be required for NRPA and Corps permits. In addition, Corps approval would require compliance with the ESA and Section 106 of the National Historic Preservation Act (NHPA). Alternatives that require tree-clearing would require a USFWS Northern Long-Eared Bat 4 (d) consultation as part of Corps review. Any option that disturbs over an acre of soil would require Maine Construction General Permit (MCGP) approval and options that create over an acre of new impervious area would be subject to the requirements of Chapter 500, the Maine Stormwater Law. It should be noted that due to the significant amount of wetland impacts that would be anticipated for alternatives that expand the rail corridor, a substantial degree of agency coordination, along with extensive wetland mitigation and compensation, would be required.

A State of Maine Site Location of Development (Site Law) Permit would be triggered by any alternative that occupies more than 20 acres; includes 3 or more acres to be graded, stripped, and not revegetated; or if the project site has an existing Site Law permit requiring amendment.

Finally, some level of municipal coordination and local permitting may be required for all alternatives that impact natural resources and public amenities and to ensure compliance with applicable local land use ordinances, Shoreland Zoning, and other local zoning regulations.

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# 4

## Economic Benefits

This chapter presents a summary assessment of the economic benefits and impacts of an interim trail and/or maintaining and preserving the existing rail corridor for possible restoration of rail services along the 26.5-mile Berlin Subdivision Rail Corridor from Ocean Gateway in Portland to the Auburn/New Gloucester line just south of Danville Junction. Both interim trail and potential rail use consider the construction-related economic impacts, ongoing maintenance costs, as well as post-construction benefits that could accrue from users. More detail can be found in RKG's Demographic & Economic Analysis report in Appendix B.

### 4.1 Introduction

The team utilized the IMPLAN econometric model to develop estimates of the direct, indirect, and induced economic impacts associated with maintaining/preserving the existing state-owned rail corridor<sup>6</sup> for possible restoration of rail use and/or interim trail use. Estimates include construction costs (i.e., the initial capital investment), ongoing annual maintenance costs (e.g., replace/repair rail ties for rail, vegetation removal, etc.), and any other resulting economic activity, for these three alternatives:

- › 1: Maintain and preserve existing rail corridor for potential restoration of:
  - Freight rail operations (along Class 1-2 track)
  - Passenger rail operations (along Class 3 track)
- › 2: Interim Trail using existing rail bed (Trail until Rail or "TUR")

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<sup>6</sup> The economic analysis was restricted to the 26.5-mile, state-owned corridor, plus a hypothetical station site at Danville Junction. This contrasts with the 2019 study discussed in Section 1.3 above which included a portion of the CSX line further north to Downtown Lewiston-Auburn

- TUR with gravel/stone dust surface
- TUR with paved surface
- › 3: Permanent Trail adjacent to existing rail bed (Rail with Trail or “RWT”)
  - RWT with gravel/stone dust surface
  - RWT with paved surface

## 4.2 Demographic Patterns along the Corridor

While nearby workers may occasionally use trails, analysis related to trail usage is usually focused on nearby residents. The 26.5-mile-long corridor includes approximately 15,000 residents within a half-mile radius of the current rail corridor. (While other studies may use a larger buffer distance from the corridor or perhaps adjacent ZIP codes, one half mile was chosen because within that distance nearly all potential trail users are typically willing to walk or bike to the corridor.) The dominant land use is residential with 3,382 single family units (though a handful of business reside at the south end of the corridor and in other discrete areas). The median household income in the corridor units is \$87,556. Approximately 46% of the population is 45 years or older with 56% over those >25 years old holding a college degree. In general, these demographics are consistent with those with a high propensity to use nearby trails though a wide variety of ages and income levels use trails.

## 4.3 Alternative 1: Potential Restoration of Rail Service

The focus of Alternative 1 is the maintenance and preservation of the current Berlin Subdivision Rail Corridor in roughly its current state. This involves the continuation of annual maintenance performed by MaineDOT since the department purchased the corridor. The annual maintenance includes road-crossing surface repairs, clearance of encroaching vegetation, preventative maintenance at culverts, removal of graffiti or other vandalism, and occasional replacement of damaged/broken rail ties. While continuation of this *de facto* “no build” scenario is an alternative, the economic analysis focused on the costs, impacts, and benefits of the restoration of rail use along the corridor, as either freight operations or passenger service. With either option, the general benefits accrued would include:

- › Temporary (construction) and permanent (maintenance) job creation
- › Potential additional investments such as expanded maintenance facilities
- › Reduction of demand for heavy truck traffic to carry freight
- › Reduction in vehicle traffic and associated emissions along the Auburn/Portland corridor
- › Potential changes in the development mix and resulting land values, especially as may be associated with the potential build-out of future passenger rail stations

### Potential Freight Rail Service

Currently the corridor is used by the Portland Yacht Center to move boats from the waterfront to a storage facility in East Deering. There is no other commercial activity along the corridor. In an alternative where the rail infrastructure is upgraded and used for freight rail service, both the money used for capital upgrades and annual maintenance would be expected to have an economic impact.

- Capital Costs: the estimated \$22.2m spent on restoration of freight rail service is anticipated to



produce 281 temporary construction jobs, leading to \$15.2m in labor income, \$19.0m in “value added”<sup>7</sup> and \$42.4m in total output.

- Annual Maintenance: the estimated \$2.1m spent on annual maintenance (exclusive of operations) is anticipated to produce 18 permanent jobs, leading to \$1.4m in labor income, \$2.0m in “value added” and \$4.1m in total output.

Regarding any change in land value, it is important to note that while freight rail can be a net benefit for commercial properties along the corridor, residential proximity to active freight lines can detract from property values due to noise and safety issues.

### Potential creation of a Foreign-Trade Zone

In the freight rail alternative, additional economic benefits could be captured if the Berlin Subdivision rail corridor was established as a Foreign-Trade Zone (FTZ). Being adjacent to the City of Portland’s established FTZ, the Berlin Subdivision FTZ could bring benefits including the deferral, reduction, or elimination of certain duties, relief from some tariffs, and other benefits spelled out at the end of chapter 1 in the RKG report in Appendix B

### Potential Passenger Rail Service

In an alternative where the rail infrastructure is upgraded and used for passenger rail service, both the investment in capital upgrades and annual maintenance expenditures would be expected to have an economic impact.

- Capital Costs: the estimated \$274.0m spent on development of passenger rail service is anticipated to produce 3,474 temporary construction jobs, leading to \$187.0m in labor income, \$234.8m in “value added” and \$523.4m in total output.
- Annual Maintenance: the estimated \$2.3m spent on annual maintenance (exclusive of operations) is anticipated to produce 20 permanent jobs, leading to \$1.6m in labor income, \$2.2m in “value added” and \$4.5m in total output.

Besides money used for capital upgrades and annual maintenance for potential passenger rail service, other economic impacts are expected through passenger spending, development of stations, and increased real estate values near the station sites and along the corridor itself.

### Passenger Rail Station Locations

At potential rail station locations, the team analyzed the current population and number of housing units within a 1, 2, and 3 mile radius (or a 15-minute walkshed, where appropriate), and determined the median value of homes, along with median household and per capita income level. Figures for these categories included the years 2010 and the 2021 current baseline along with projections for the year 2026. The number of businesses within a 1, 2, and 3 mile radius (or the walkshed) were tallied as well (for the retail, office, services, and manufacturing sectors).

Three rail station or platform locations were selected along the 26.5-mile corridor with a fourth station placed at a logical location just north of the state-owned corridor. All station locations were general in nature and do not represent specific passenger rail station sites on individual parcels. The four

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<sup>7</sup> “Value added” refers to the concept of a dollar spent re-circulates throughout the economy, or the “ripple effect”

locations included:

- › Danville Junction in Auburn (roughly a mile north of the terminus of the state-owned rail corridor, requiring coordination with CSX, the owner of the adjacent rail line to Lewiston)
- › Pineland in North Pownal
- › Yarmouth Junction, as close as possible to the junction with the main line to create a transfer point with Amtrak service to Brunswick and south to Boston
- › Ocean Gateway in Portland, near the cruise ship terminal

As shown in more detail in RKG's report in Appendix B, fiscal and economic impacts were analyzed for each of the four general station sites to determine future development potential (retail and residential), estimated household retail spending, new employment activity, and property valuations (and associated property tax increment) for both residential and commercial properties.

### Fiscal and Economic Impact

Team member RKG developed a set of inputs, assumptions and modeling—as discussed in more detail in the full report—to estimate a variety of fiscal and economic impacts at three of the four station areas. Because the urban fabric around Portland's Ocean Gateway is—for all intents and purposes, relative to the other three locations—built out, the incremental changes were anticipated to be minimal. Therefore, it is not included in the table below.

**Table 6: Summary Fiscal and Economic Impact of Passenger Rail Service**

Summary Comparison of Potential Benefits - by Station Study Area	Auburn		Pineland East		Yarmouth Junction	
	Low	High	Low	High	Low	High
<b>New Housing (1)</b>	<b>37</b>	<b>58</b>	<b>17</b>	<b>26</b>	<b>85</b>	<b>172</b>
Owner Units	26	43	13	22	60	135
Renter Units	11	15	4	4	25	37
<b>Change in HH Spending in \$1,000's</b>	<b>\$898.7</b>	<b>\$1,427.0</b>	<b>\$538.4</b>	<b>\$871.9</b>	<b>\$3,425.9</b>	<b>\$5,416.1</b>
<b>Development Potential</b>	<b>4,559</b>		<b>5,073</b>		<b>15,682</b>	
Retail SF	666		4,580		11,342	
Non-Retail SF (2)	3,894		493		4,340	
<b>Potential Employment (3)</b>	<b>62</b>		<b>8</b>		<b>74</b>	
<b>Potential Spending</b>	<b>\$99,674</b>		<b>\$12,886</b>		<b>\$118,794</b>	
<b>Potential Fiscal Impacts (FY22)</b>	<b>Low</b>	<b>High</b>	<b>Low</b>	<b>High</b>	<b>Low</b>	<b>High</b>
Owner Value (4)	\$5,328.67	\$8,812.80	\$3,830.67	\$6,482.67	\$17,680.00	\$39,779.99
Renter Value (5)	\$1,447.37	\$1,973.69	\$481.72	\$481.72	\$3,010.74	\$4,455.90
<b>Total Residential Value \$1,000's</b>	<b>\$6,776.04</b>	<b>\$10,786.49</b>	<b>\$4,312.38</b>	<b>\$6,964.38</b>	<b>\$20,690.74</b>	<b>\$44,235.89</b>
Estimated Gross Property Tax	<b>\$161,405</b>	<b>\$256,934</b>	<b>\$59,511</b>	<b>\$96,109</b>	<b>\$409,677</b>	<b>\$875,871</b>
Retail Value/SF		\$150		\$150		\$150
Non-Retail Value/SF		\$225		\$225		\$225
<b>Total Non- Residential Value \$1,000's</b>	<b>\$975.87</b>	<b>\$797.95</b>	<b>\$797.95</b>	<b>\$2,677.75</b>	<b>\$2,677.75</b>	<b>\$2,677.75</b>
Estimated Gross Property Tax	<b>\$23,245</b>		<b>\$11,012</b>		<b>\$53,019</b>	

Source: RKG Economic Analysis report, Table 8 on p. 17 (see Appendix B)

### Commuting Patterns

According to the U.S. Census Bureau, roughly 55,730 workers commute from outside of Portland to job

sites in Portland. Of these, nearly 31% of the inbound commuters come from a distance greater than 24 miles. Also, 1,050 residents commute from Portland to Lewiston and 815 commute to Yarmouth. It is reasonable to assume that nearly all of these commuters use personal motor vehicles to access their jobs on a regular basis.

Passenger rail estimates for the Lewiston/Auburn-to-Portland corridor range from 210-240 passengers per day along intercity, commuter-rail type of service based on the Lewiston-Auburn Passenger Rail Service Plan – Transit Propensity Report from August 2018. This equates to 76,650 to 87,600 passengers annually. While more detailed analysis would be required to better understand origin and destination points, these passengers between the Ocean Gateway area of Portland to Lewiston-Auburn would remove a portion of the automobile-commuter traffic between the two cities.

### **Summary of Benefits from Restoration of Rail Service**

In summary, the potential restoration of rail service along the Berlin Subdivision rail corridor could:

- › Create new jobs related to construction of improved rail infrastructure, maintenance of the rail line, and other jobs such as engineers and conductors.
- › Induce additional construction and investment in related rail infrastructure and maintenance facilities, as well as potential development that may arise from station construction; this includes fiscal and economic benefits from new residential and non-residential activity.
- › Enhance safety along the Lewiston/Auburn-to-Portland corridor due to reduced heavy truck traffic, and a potential reduction of the financial burden on public maintenance of the roadways.
- › Improve affordable mobility by low-income individuals with the additional opportunities afforded by passenger rail transit.
- › Based on potential spending (on the train, at the station, or adjacent business), rail passengers could generate \$114,000 to \$130,000 in economic activity annually

## **4.4 Alternative 2 and 3: Potential Trail Use**

As described in section 3.4 above, the number of potential trail user trips is anticipated to range from 130,000 to 195,000, whether an interim TUR or a permanent RWT configuration. These trip estimates form the basis of subsequent estimating non-local users and trip estimates, which in turn form the basis for evaluating 1) potential spending by trail users, 2) any resulting economic impact on adjacent communities, and 3) the potential health benefits. Separately, the economic analysis has also looked into the potential property value benefits.

### **Potential Spending by Users**

To determine potential spending by the 130,000 to 195,000 trail users, an estimate of how many trips are from non-local residents is needed. Based on other trail studies, it is estimated that approximately 23% of trips are non-local. This equates to roughly 30,000 to 45,000 trips from out-of-towners who are expected to spend more money within the local economy relative to a local resident who would use the trail and simply go home immediately afterwards without patronizing any nearby businesses. Some trail studies indicate that the average non-local trail user spends an average of \$118 for each daily trip



to the trail for food, lodging, and equipment. (This includes snowmobilers<sup>8</sup> who have different needs than walkers and bicyclists when visiting a trail, including gas, snowmobile maintenance, and warm-weather gear.) Using \$118 as a multiplier, spending by non-local trail users would range from \$3.5m to \$5.3m annually.

## Economic Value Added

To determine the economic value added to the statewide economy based on development of an interim trail, IMPLAN modeling software was employed. IMPLAN is used to determine the direct, indirect, and induced impacts<sup>9</sup> of spending by regular users, by construction activity, and by on-going maintenance of a particular facility such as a trail or shared use path. Using this model, the team measured the economic impact of trail user spending and how the additional dollars could impact Maine's economy (aka "value added" or the "ripple effect" to the gross state product or GSP). The results were a value added of \$3.3m to \$4.9m to the GSP, with most of that going to food and lodging expenditures.

## Potential Health Benefits

According to the federal Center for Disease Control (CDC), many adults are at health risk from limited physical activity. For Maine, the CDC estimates 24.8% of the adult population is considered "inactive" or "insufficiently active". When applied to the >45 population of roughly 7,000 people living within one half mile of the rail corridor, that equates to 1,738 persons. Per the CDC, the annual per capita health care costs of being "inactive" is \$1,704 and "insufficiently active" \$846, an average of \$1,275 annually. As a major recreational opportunity for walking, rolling, bicycling, and cross-country skiing for the region, an interim trail along the Berlin Subdivision Rail Corridor could hypothetically reduce the number of inactive and insufficiently active adults by 5% (174 total). Encouraging 174 more adults to meet recommended CDC levels of activity helps eliminate the \$1,275 of annual health care costs for each, resulting in a regional benefit of roughly \$222,000 annually.

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<sup>8</sup> If snowmobile use is ultimately prohibited along portions or the entirety of the Berlin Subdivision corridor, average daily spending would be significantly less than \$118.

<sup>9</sup> Direct impacts refer to the initial dollar investment into the economy such as user spending, the estimated construction cost, and on-going operations/maintenance. Indirect Impacts result from spending by workers building, operating, or maintaining the facility as well as business to business spending to buy equipment and supplies, rent space, pay their employees, etc. Induced Impacts refer to the impacts of spending by the employees generated by the direct and indirect impacts.

## Potential Property Value Benefits

The average home value for the 3,382 single family homes within one half mile of the rail corridor is \$347,500. While studies vary related to a home's value when close to a park space or trail, it generally is considered to improve the resale value between 5%-10%. This equates to \$17,375 to \$34,750 per home. Existing home values in each community along the rail corridor vary, ranging from a low of \$105,100/unit in Pownal to \$561,550/unit in Falmouth. Correspondingly, the potential added value upon resale of a home would range from \$5,255-\$10,510 in Pownal to \$28,077-\$56,154 in Falmouth.

**Table 7: Added Home Value due to Presence of Interim Trail**

Summary Residential Values by Town - Berlin Subdivision Rail Corridor					
Single Family Units					
Location	# of Units	Total Valuation (in millions)	Average Value per Unit	5% Value Increase	10% Value Increase
Auburn	6	\$1.12	\$186,250	\$9,313	\$18,625
Cumberland	338	\$153.73	\$454,833	\$22,742	\$45,483
Falmouth	530	\$297.62	\$561,541	\$28,077	\$56,154
New Gloucester	189	\$42.90	\$226,977	\$11,349	\$22,698
North Yarmouth	284	\$105.00	\$369,726	\$18,486	\$36,973
Portland	1,096	\$248.08	\$226,353	\$11,318	\$22,635
Pownal	45	\$4.73	\$105,098	\$5,255	\$10,510
Yarmouth	894	\$321.99	\$360,172	\$18,009	\$36,017
<b>Totals or Averages</b>	<b>3,382</b>	<b>\$1,175.17</b>	<b>\$347,479</b>	<b>\$17,374</b>	<b>\$34,748</b>

Source: Vision Government Solutions, via RKG Economic Analysis report, Table 13 on p. 25 (see Appendix B)

## Capital and Maintenance Costs

The IMPLAN model was also used to estimate the impact that both the capital funding for the interim trail and the annual maintenance costs would have on the state's economy.

**Table 8: Capital and Maintenance Cost Impacts of Interim Trail Use**

SUMMARY COMPARISONS - IMPLAN Models (total) and in rounded \$millions					Estimated
Infrastructure Costs					Initial Costs
Type of Use(s)	Employment	Labor Income	Value Added	Output	Direct
TUR - Gravel	602	\$32.42	\$40.70	\$90.73	\$47.50
TUR - Paved	697	\$37.54	\$47.12	\$105.06	\$55.00
RWT - Gravel	1,141	\$61.43	\$77.11	\$171.92	\$90.00
RWT - Paved	1,196	\$64.36	\$80.80	\$180.13	\$94.30
SUMMARY COMPARISONS - IMPLAN Models (total) and in rounded \$millions					Estimated
Annual Maintenance Costs					Annual
Type of Use(s)	Employment	Labor Income	Value Added	Output	Direct
TUR - Gravel	1	\$0.08	\$0.09	\$0.23	\$0.12
TUR - Paved	1	\$0.08	\$0.08	\$0.19	\$0.10
RWT - Gravel	1	\$0.08	\$0.11	\$0.23	\$0.12
RWT - Paved	1	\$0.08	\$0.09	\$0.19	\$0.10

Source: IMPLAN, VHB and RKG (2022)

Note - constant 2022 dollars in \$millions

Note - totals reflects combination of direct, indirect and induced



# 5

## Community Input

Public engagement was an important part of the Berlin Subdivision Rail Corridor Study process. Comments were solicited in a variety of channels between April and November 2022, including four virtual RUAC meetings, one in-person RUAC meeting, and through email comments, including direct email to MaineDOT and submissions through the MaineDOT website contact form. The public comments were reviewed, and specific opinions regarding the project were tabulated.

### 5.1 Key Findings

Nearly 600 public comments were received in a six-month period from May 2022 through October 2022. More are expected until the mid-December cut off, and from the public meeting scheduled for December 5<sup>th</sup>. VHB reviewed all comments and made a determination whether the comment was 1) supportive of trail use along the corridor, 2) supportive of the restoration of rail service along the corridor, or 3) presented either a neutral stance, or simply asked a question(s) as part of their comments to MaineDOT. To more-thoroughly understand what motivated the responders' interests in their position, a sample of approximately 38% were further analyzed with attention to stated interests and preferences supporting their opinion on the project. VHB categorized and tabulated the more nuanced reasons why people felt as they did to track any trends that could inform the RUAC recommendations and subsequently the MaineDOT Commissioner's decision related to the Berlin Subdivision corridor. While the detailed table can be found in Appendix C, the summary table of comments is below.

**Table 9: Summary Table of Community Input<sup>10</sup>**

	<b>Supports Interim Trail</b>	<b>Supports Restoration of Rail Service</b>	<b>Neutral/Other</b>
Verbal Comments	9	11	10
E-mail Comments	528	19	15
<b>Total</b>	<b>537 (91%)</b>	<b>30 (5%)</b>	<b>25 (4%)</b>

## Responses Supporting a Trail

Approximately 91% of the public comments received indicated support for a trail<sup>11</sup>. This included comments specifying desire for “rail until trail”<sup>12</sup>, and/or support for the development of the relevant segment of the Casco Bay Trail Loop. Of the comments sampled for further analysis (percentages refer to sample size for all comments, not to each category alone), reasons and concerns cited for their support of the interim trail included the following areas:

- › Traffic safety concerns (37%, inclusive of all 592 comments received)
- › Alternative transportation benefits (17%)
- › Economic benefits and an asset for community (15%)
- › Environmental concerns and benefits (13%)
- › Health benefits and/or outdoor recreation benefits (10%)
- › Social benefits and community cohesion (5%)
- › Improved livability and quality of life for nearby residents (5%)

At 37%, **traffic safety concerns** were the largest category reported throughout the sampled comments. They primarily stated a strong desire for safe separation from vehicles, stated that roads are increasingly unsafe to walk and bike on with an observed increase in aggressive driver behavior (24%). Another 6% referenced that they lacked any other safe place to walk or bike in their neighborhood. 7% of respondents felt that the trail option would be good for children, and that it would be the only safe option for children, families, and seniors to utilize for active transportation. Many of these respondents stated that they lived near the trail corridor location and had a strong desire to use such a facility on a frequent basis.

Roughly 17% of sampled comments cited **alternative transportation benefits**, primarily referencing a desire to utilize the trail for commuting, errands, and visiting friends and family. Another 2% of respondents felt the trail would benefit and complement the regional alternative transportation

<sup>10</sup> Comments received from April 2022 through October 2022 only

<sup>11</sup> It should be noted that while this shows overwhelming support for an interim trail by those who submitted written comments to MaineDOT, it may not reflect the attitude of the broader population of people living in communities along the Berlin Subdivision corridor.

<sup>12</sup> Although only two commenters specifically expressed support for both rail use and trail use (i.e., RWT), it is not clear if all others' stated support for a trail would exclude a RWT configuration as a desirable option

network by creating new links.

**Economic benefits and tourism** were another highlight of the sampled public comments, with 15% seeing the potential for general economic benefits due to the trail, 10% believing the trail will aid with tourism in the area by drawing visitors in, and 9% see it as a community amenity and asset - adding value to the community.

**Environmental concerns** comprised of a total of **13%** of sampled responses. These included the potential for the trail to encourage “green” transportation modes while reducing vehicle usage emissions (9%) and reduce traffic and congestion (4%).

**Public Health** was another top concern category, with 10% of respondents indicating the trail could provide health benefits generally, in relation to mental health, physical health, and general wellness. 14% felt that it could encourage recreation, 15% specifically highlighted the benefit of encouraging outdoor recreation and exposure to nature which they felt would be beneficial also for mental health. Another 12% specified the health benefits of encouraging more exercise, generally, with the trail.

**Social benefits** were described as improved community cohesion, neighborhood engagement, creating more opportunities for local residents to interact with one another, and accounted for 5% of the comments.

**Improved livability, desirability of community, and improved quality of life** made up 5% of the sampled comments, many of these respondents also stated they thought it would make life more enjoyable for everyone using the trail.

#### Other notes on commenters and preferences:

**Motorized Trail Use** - 7% of respondents also voiced their preference for a motorized multi use trail, specifically advocating for a motorized use option for vehicles such as snowmobiles and all-terrain vehicles, referencing examples of other trails throughout Maine where this is practiced. Respondents cited potential economic benefits tied to the tourism generated for this use, and for the purchasing of permits for these motorized uses. In general, this group of respondents feel that expanding the modes allowed on the trail would increase activity and use of the facility and take advantage of the winter snow trail conditions.

**Proximity to the Rail Corridor** - Of the respondents supporting the interim trail, 4% of respondents stated they lived close to the rail line, and 3% specifically abutted the rail right of way.

## Responses Supporting Restoration of Rail Service

Approximately 5% of the public comments indicated support for restoring passenger rail service, with many referencing the ongoing Lewiston-Auburn Rail Study. Generally speaking, this group felt very strongly that implementing passenger rail service would bring great benefit to the region, serve a greater cross section of the area’s population than trail use alone, and were highly concerned that removal of the rail infrastructure would be a disservice to the community.

Of the comments sampled for further analysis (percentages refer to sample size for all comments, not to each category alone), reasons and concerns cited for their support of the interim trail included the following areas:

- › Environmental benefits/concerns
- › Economic benefits and concerns
- › Alternative transportation benefits & creating affordable transit options

**Environmental benefits** were a frequent comment, similar to many of the respondents in favor of the trail option, **4%** of the 592 comments received expressed that a passenger rail option could reduce vehicular emissions, reduce overall vehicle traffic and congestion, and promote more green transportation choices.

**Economic benefits and concerns** were cited both in terms of rail adding to the regional economy (6%) and supporting the development of affordable housing options (2%). Some economic concerns referenced that in the long term, a trail would not be in the best interest of the public, and that it was not economically sound (2%).

**Alternative transportation benefits** were a top concern for this group of respondents, that the restoration of rail service would provide more alternate transportation options (5%). These benefits were also cited in terms of providing affordable. Year-round transit options to residents without cars (2% of all comments), and that it would help a wider range of constituents with transportation access, to be more inclusive of those who cannot walk, bike, or roll as their mode of transportation (3%).

Roughly 1% of the 592 respondents were very concerned that if the rail infrastructure is removed, it would not actually be replaced, even if the possibility remained.

## Neutral and/or Other Responses

Approximately 4% of all public comments that deviated from “Supports Interim Trail” or “Supports Restoration of Rail Service” were categorized as “Neutral/Other”. These responses did not specify support or opposition for either a trail or rail, and consisted primarily of questions about the study, concerns from residents abutting the rail corridor, and general questions about the process and/or timeline.

Comments from residents abutting the rail corridor included concerns regarding liability and privacy with regards to interaction between potential trail users and property owners. These comments did not specify explicit opposition to the potential interim trail use, but rather registered concerns and posed questions to MaineDOT and the study team.

Other questions in this category related to specifics of the rail corridors, the timeline, next steps, and sharing on-the-ground knowledge of the area. A few comments were made specific to the public engagement process or prior studies, but not tied to a stance on this particular study.



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# APPENDICES

# Appendix A:

## Cost Estimate Back-up Sheets

## **Appendix B:**

# **Draft Berlin Subdivision Rail Corridor Demographic and Economic Analysis (RKG report, October 20, 2022)**

## Appendix C:

# Summary Table of Public Comments



