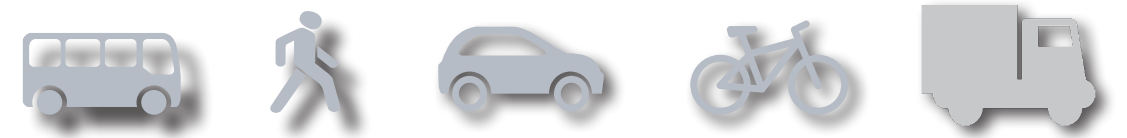


- FALMOUTH
- CUMBERLAND
- YARMOUTH
- FREEPORT

# North of Portland Route One Complete Streets Corridor Plan

## FINAL REPORT



---



# ACKNOWLEDGEMENTS

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## 1.0 INTRODUCTION

The Towns of Falmouth, Cumberland, Yarmouth and Freeport began collaborating in September 2016 to develop recommendations that will ultimately result in a detailed plan to upgrade the entire length of the Route 1 corridor to better accommodate bicycles, pedestrians, buses, trucks and passenger cars. This concept, known as Complete Streets, is based on the understanding that streets are used not just by vehicles, but by ALL modes of transportation and should be safe and accommodating to all users. Treatments will depend on context and should balance the needs of all users.

### 1.1 PROJECT APPROACH

#### DOCUMENT REVIEW, FIELD WORK AND ASSESSMENT

**A.** Documentation of existing zoning and land use context for the corridor was performed.

**B.** All MaineDOT and PACTS data was assembled and included:

- Intersection Turning Movement Counts
- Automatic Traffic Recorder Counts
- Bicycle and pedestrian volumes
- Truck volumes and patterns
- Transit data
- Crash data for the most recent three-year period
- As-built plans and traffic signal timing plans
- Seasonal traffic volume information
- Right-of-way information
- Speed data
- Current design projects

**C.** Information from each of the four communities that is relevant to the project including comprehensive plans, development proposals, transportation plans, traffic impact studies, etc. was obtained and reviewed.

**D.** A field inventory to update any of the data collected and to document information not in the MaineDOT/PACTS database was performed.

**E.** Supplemental intersection turning movement counts were performed.

**F.** A transit system inventory was performed and included amenities (signs, shelters, benches) at bus stops, location and length of the bus stop, and a general determination of accessibility at and the pedestrian path of travel to/from bus stops.

#### PUBLIC OUTREACH

Falmouth, Cumberland and Yarmouth posted a survey in November 2016, which attracted more than 550 participants. Because the purpose of the study is to make Route 1 safer for all users, the focus was on hearing about the most

dangerous locations for vehicles, as well as where new bike and pedestrian facilities would be most useful. Falmouth, Cumberland and Yarmouth hosted public meetings to get feedback on the draft recommendations generated for their Town – and the Route 1 corridor as a whole. The meetings occurred on the following dates.

- Cumberland Public Meeting: January 25, 2017
- Yarmouth Public Meeting: February 15, 2017
- Falmouth Public Meeting: February 16, 2017

The meetings included a presentation on the purpose of the draft recommendations and some of the issues they address. During the second part of the meetings, attendees were able to take a closer look at the draft recommendations in display format and ask questions and make comments on a one-to-one basis to Town officials and study consultants. Those people who were unable to attend any of the meetings were able to obtain the proposed draft recommendations on each Town's website as well as in paper format at each of the Town offices.

Freeport engaged the public and key stakeholders through meetings with the Active Living Committee and the Traffic and Parking Committee.

#### CONCEPT PLANS AND RECOMMENDATIONS PROCESS

Based upon the analysis performed, as well as public meeting input, the project Team developed a menu of possible draft recommendations for consideration. Draft recommendations were based upon the following:

- Pedestrian and Bicycle generators and demand.
- A review of existing facilities and gaps in the system that present opportunities. These included sidewalks, crosswalks, bicycle facilities bus stops, etc.
- For locations where draft recommendations may impact traffic mobility, a level of service analysis was conducted that documents changes in levels of service following roadway/intersection changes. The analysis was based upon the Highway Capacity Manual.
- Assessment of heavy vehicle movements was performed to ensure concept improvements account for large trucks.
- Access management improvements were considered and included as appropriate.
- Right-of way information was considered to gain an understanding of available cross-sectional space.
- Cross-sections graphics are included for illustrating various options.
- Order of magnitude cost information is included.
- Identification of locations for conceptual

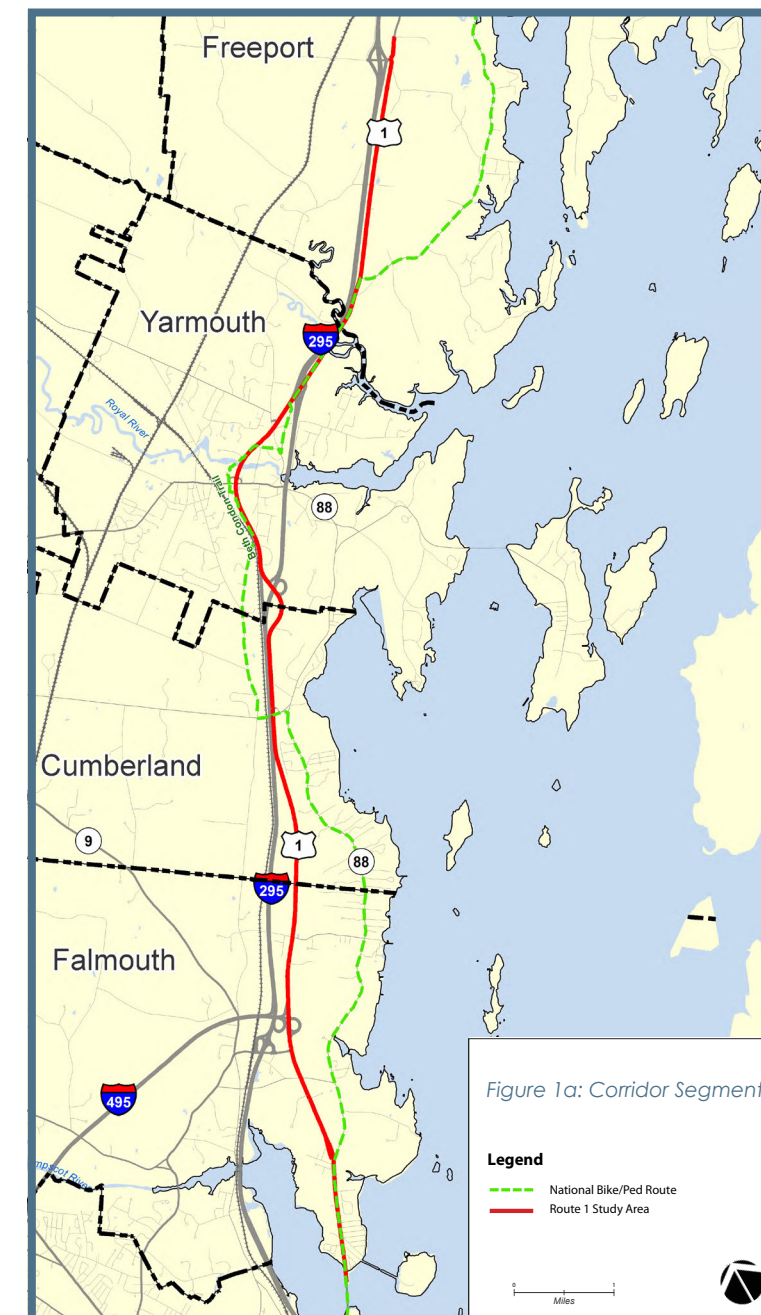
improvements for transit, with a focus on connectivity of transit to other modes of transportation along the corridor and efficiency of bus operations was performed.

- An overall rendered final concept plan for the corridor.

### 1.2 STUDY/FOCUS AREA

Each of the study area communities identified locations that should be the focus of a detailed evaluation and those where general recommendations were appropriate.

**Figure 1a** details the study area.





## 1.1.1 FALMOUTH

### Portland to Bucknam Road

The Town has recently implemented complete streets improvements between Portland and Bucknam Road and a detailed concept plan is not proposed for this section. This area was reviewed for future enhancement and adjustment. The only exception is investigation of long-term improvements at the Route 88 intersection. Recent changes implemented in 2016 reflect recommendations from a FHWA sponsored Safety Audit and did not address future improvement needs. Accordingly, this plan includes a detailed plan for Route 88.

### Bucknam Road to Johnson Road

Pavement surface improvements were recently implemented in this section. However, detailed concept plans are proposed from the Turnpike Spur area to Cumberland. These plans were developed in conjunction with the Route 1 North Vision Plan prepared by VHB.

### Johnson Road Intersection

This location was suggested to include a detailed concept plan for the following reasons:

- The intersection is signalized and thus a major intersection in the northern section of Route 1 in Falmouth.
- Johnson Road provides an important connectivity function between Route 88 and neighborhoods to the west.
- A sidewalk is provided on the south side of Johnson Road between Route 1 and Route 88.
- No pedestrian accommodations are provided at the intersection.
- The speed limit is 45 mph and high speeds may compromise safety.
- Metro transit service is provided at the intersection.

## 1.1.2 CUMBERLAND

### Falmouth to True Spring Drive

This location is to include a detailed cross-section graphic and general recommendations for the following reasons:

- The Town has begun the process of constructing a three lane section on Route 1 and provision of a shared use path on the west side of Route 1. This Plan incorporates the proposed design and provides enhancements and revisions.

### True Spring Drive to Tuttle Road Ramp

General recommendations were identified for this section of Route 1.

### Tuttle Road Ramp Intersection

A detailed concept plan was prepared for the following reasons:

- This intersection serves as an important link between Route 1 and Route 88 and to Cumberland Village.
- This location has several issues as it relates to complete streets elements, including shoulder/bicycle accommodations, high vehicle speeds, no pedestrian facilities, and intersection traffic control adequacy. Specifically, the southbound shoulder is reduced to accommodate the turn lane.

### Tuttle Road Ramp Intersection to Yarmouth

General recommendation were identified for this section of Route 1.

## 1.1.3 YARMOUTH

### Cumberland to Portland Street

Recent improvements for bicycles at the I-295 interchange have been implemented. General recommendations will be included.

### Portland Street Intersection

A detailed concept plan was prepared for the following reasons:

- The location serves as a gateway intersection and functions poorly due to geometric alignment.
- It provides connectivity from abutting residential neighborhoods and Yarmouth High School.
- It is the southern terminus of the Beth Condon Path.
- A Breeze Express Transit Service stop is located nearby at the Park & Ride Lot.

### Portland Street to Main Street

A detailed cross-section graphic and general recommendations was prepared for the following reasons:

- How it interfaces with the Portland Street and Main Street intersections is important.
- General land uses (NYA and restaurants) and pedestrian activity warrant review.
- Lack of a continuous sidewalk system on the east side of Route 1.
- Breeze Express Transit Service stop nearby on Main Street.
- The Yarmouth Bicycle and Pedestrian Network Recommendations, (2015, Town Planning & Urban Design Collaborative, LLC), report included adding bicycle lanes and adding sidewalks in this section.

### Main Street Intersection

Given the on-going bridge replacement project at Main Street, general recommendations was included and considered MaineDOT design plans and coordinated with abutting roadway sections.

### Main Street to East Main Street

A detailed cross-section graphic and general recommendations was prepared for the following reasons:

- How this section of Route 1 interfaces with the Main Street intersection is important.
- Connectivity to Bridge Street and residential land uses
- Lack of a sidewalk system on east side of Route 1.
- Breeze Express Transit Service stops located nearby on Main Street and at Hannaford.
- The Yarmouth Bicycle and Pedestrian Network Recommendations report included adding bicycle lanes and adding sidewalks in this section.

### Hannaford/Willow Street Intersection

A detailed concept plan was prepared for the Hannaford intersection given the potential for reducing intersection lanes.

### Route 1/East Main Street

A detailed plan was prepared to address unsafe pedestrian crossings of Route 1.

### East Main Street to I-295

This location is to include a detailed cross-section graphic and general recommendations for the following reasons:

- Interface with southern section of Route 1.
- Consideration of future traffic signal project at the Exit 17 NB Ramps.
- Bicycle and pedestrian facility considerations through the interchange.
- A Breeze Express Transit Service stop is located nearby at the Visitor Center Lot.
- The Yarmouth Bicycle and Pedestrian Network Recommendations report included adding bicycle lanes and adding sidewalks in this section.
- Planned extension of the Beth Condon Path.
- A detailed concept plan was prepared for the Route 88/I-295 southbound intersection to address mobility and safety concerns and allow for a pedestrian crossing of Route 1.

### I-295 to Freeport

General recommendations were identified for this section of Route 1. It should be noted that the PACTS Portland Area North Bicycle & Pedestrian Implementation Plan recommends extension of the Beth Condon path to Freeport (Long-Term). There was a high level of importance identified that the soon to be replaced Cousins River Bridge should integrate bicycle and pedestrian accommodations.

### 1.1.4 FREEPORT

**General Complete Street Recommendations** were developed on Route 1 from Yarmouth to north of the Desert Road intersection.

**A Detailed Concept Plan** was developed for the I-295/Desert Road Interchange area that demonstrates how this interchange area could function as a complete street including transit.

## 1.2 DESCRIBE FUTURE OBJECTIVE AND PURPOSE AND NEED

### Purpose of the Plan

In the fall of 2016, the Towns of Falmouth, Cumberland and Yarmouth began work on a detailed plan to upgrade the entire length of their Route 1 corridor to increase safety and access for bicycles, pedestrians, buses, trucks, and passenger cars. The Town Freeport began participation in the Study in April 2017, with a focus on Route 1 from Yarmouth to Desert Road. This method of planning, known as Complete Streets, is based on the understanding that streets should be safe and accommodating to all users and all modes of travel. Treatment will depend on context and should balance the needs of all users.

### Improvement Needs

#### Pedestrian Facilities:

Pedestrian facilities are missing, incomplete, or inadequate in much of the corridor.

#### Bicycle Facilities:

Currently there is no comprehensive approach or plan to determine which facility types are most needed and appropriate in various locations.

#### Transit Facilities:

Optimization of facilities for transit will need to be considered.





## 2.0 FALMOUTH

### 2.1 OTHER STUDIES AND PROJECTS

Several studies were reviewed and considered during the development of the Plan and included:

- Route 1 One South Infrastructure Plan
- 2016 Falmouth Bicycle & Pedestrian Plan
- 2013 Comprehensive Plan
- 2017 Route 1 North Land Use Vision Plan

### 2.2 DEFINE EXISTING AND PLANNED CONTEXT

#### Existing Land Use Context

As noted on **Figure 2a** land use along Route 1 is primarily residential between Portland and Route 88 ("The Flats" area). North of Route 88 to Bucknam Road land use represents a Village Center with Mixed-Use setting. North of Bucknam Road, in the Turnpike Spur area, future commercial development is envisioned with primarily mixed office/professional uses north of the Spur. Refer to the Route 1 North Vision Plan for future land use recommendations.

#### Existing Transportation Context

**Figure 2b** depicts existing transportation information for Route 1 in Falmouth. Some noteworthy details include:

- Average Annual Daily volumes are the highest south of Bucknam Road (14,390 vehicles) and lowest north of Johnson Road (7,310 vehicles).
- There were no High Crash Location on Route 1.
- Speed limits range from 35 MPH in the village center area; 40 MPH in the Flats; 45 MPH north of the Turnpike Spur; and 50 MPH near the Cumberland Town Line.
- The highest bicycle volumes were recorded on Route 1 south of Route 88, which is also designated as the East Coast Greenway.

#### Existing Multimodal Facilities and Gaps

**Figure 2c** provides information on existing facilities and notes where sidewalks are not present (Route 1 north of Bucknam Road as an example), crosswalks, general bicycle accommodations and transit stop locations.

### 2.3 IDENTIFY ISSUES AND OPPORTUNITIES

#### Transportation Street Issues and Opportunities

##### Route 1 and Route 88:

**Issue:** The intersection configuration is confusing and designed for high speed movements and automobile focused.

**Opportunities:** Reconfigure intersection to a roundabout.

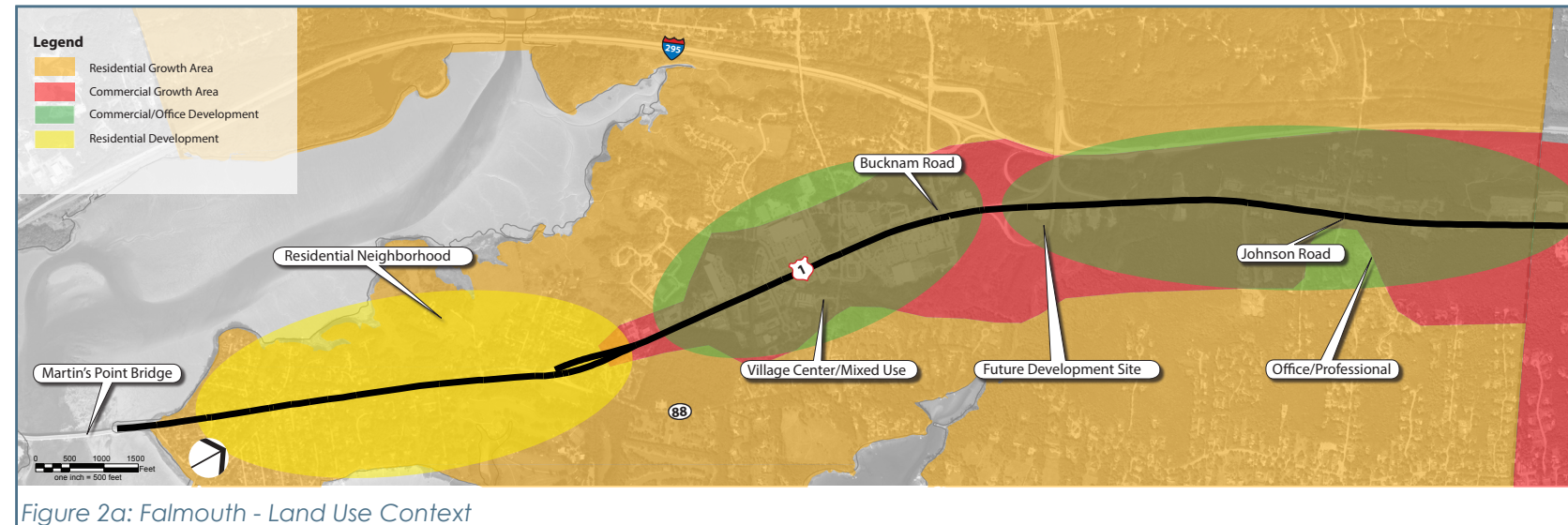


Figure 2a: Falmouth - Land Use Context

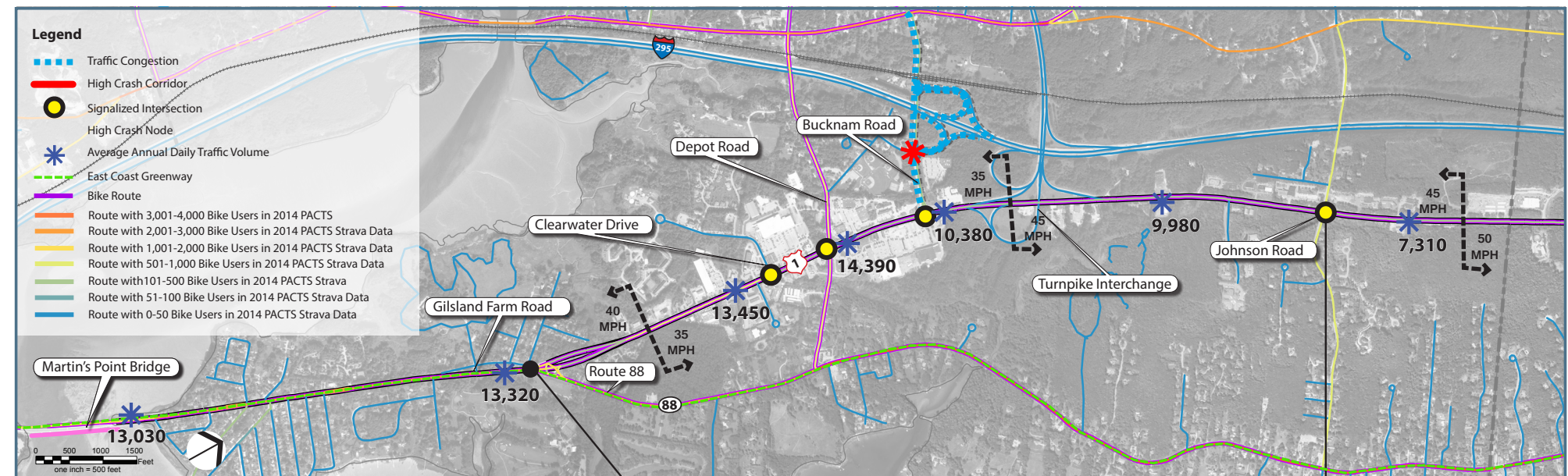
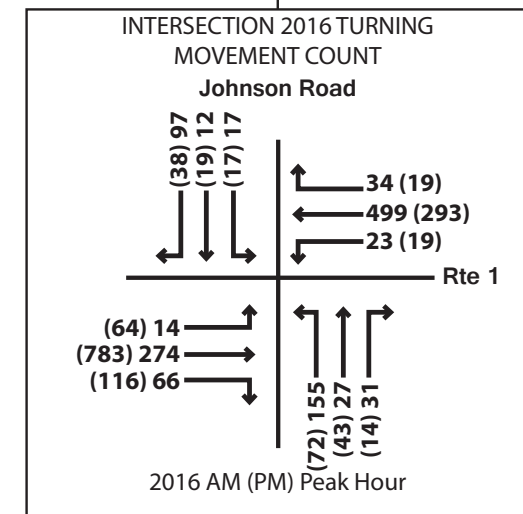
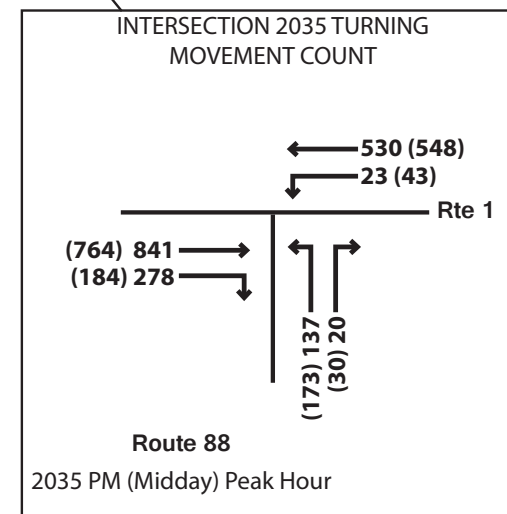


Figure 2b: Falmouth - Transportation Context





**Route 1 North**

**Issue:** High travel speeds; Johnson Road intersection capacity; and roadway cross-section.

**Opportunities:** Change roadway configuration and add capacity at the Johnson Road intersection.

**Pedestrian/Bicycle Issues and Opportunities**

**Route 1 and Route 88**

**Issue:** Bicycle and pedestrian safety.

**Opportunities:** Reconfigure intersection for enhanced safety.

**Route 1 North**

**Issue:** Lack of pedestrian facilities; Bicycle safety and connectivity to the south.

**Opportunities:** Incorporate crosswalks, sidewalks, and bicycle facilities.

**Transit Issues and Opportunities**

**Route 1 and Route 88**

**Issue:** Lack of landing pad and bus stop amenities.

**Opportunities:** Construct landing pading.

**Issue:** Lack of pedestrian facilities sidewalk and safe crossing opposite 170 US Route.

**Opportunities:** Consider enhancements to pedestrian facilities.

**Issue:** Route 88 intersection has several issues including: crosswalk behind bus stop; no bus stop amenities; and the sidewalk width is too narrow to accommodate an ADA compliant 8-foot landing.

**Opportunity:** Consider bus stop enhancements.

**2.4 ALTERNATIVE DEVELOPMENT AND RECOMMENDATIONS**

**Figure 2l** illustrates a summary of all recommendations for Falmouth and can be found at the end of this section.

**Route 88 Focus Area**

**Alternative Development**

An evaluation of a roundabout at the Route 1 and Route 88 intersection was investigated. Based upon future 2030 traffic volumes a single lane roundabout will operate at an acceptable level of service. Two roundabout layout configurations were investigated. **Figure 2d** illustrates a roundabout (Alternative 1) that will require reconstruction of Route 1 north of the intersection. The primary benefit of this alternative is the creation of an 2 acre parcel of land on the northeast corner of the intersection that could be used as a development parcel or as open space. The second alternative (Alternative 2), as depicted on **Figure 2e**, attempts to maintain the separate Route 1 northbound and southbound one-way roadway pavement areas and thus

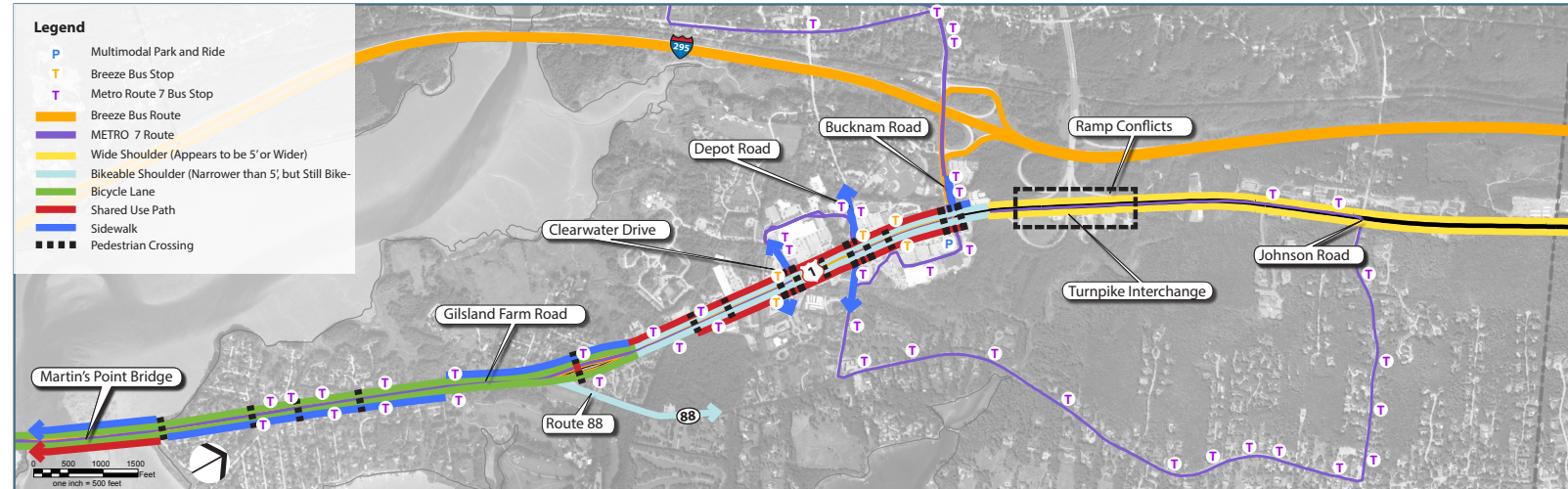


Figure 2c: Falmouth - Multimodal Transportation Facilities and Gaps

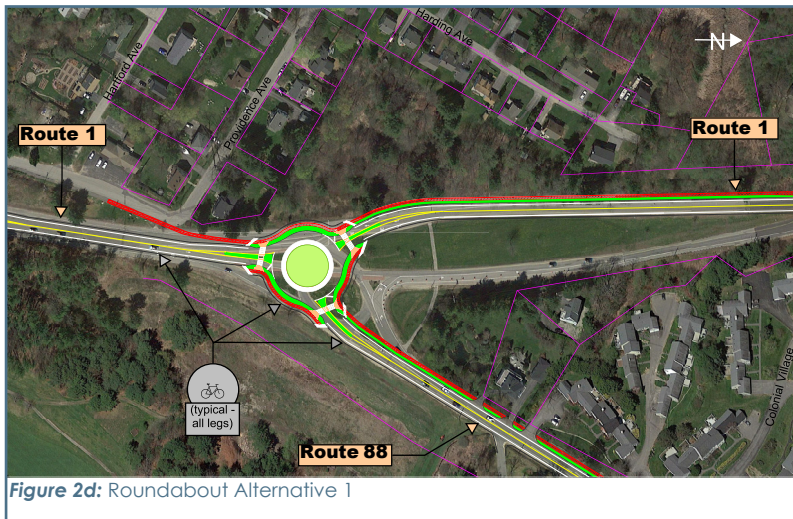


Figure 2d: Roundabout Alternative 1

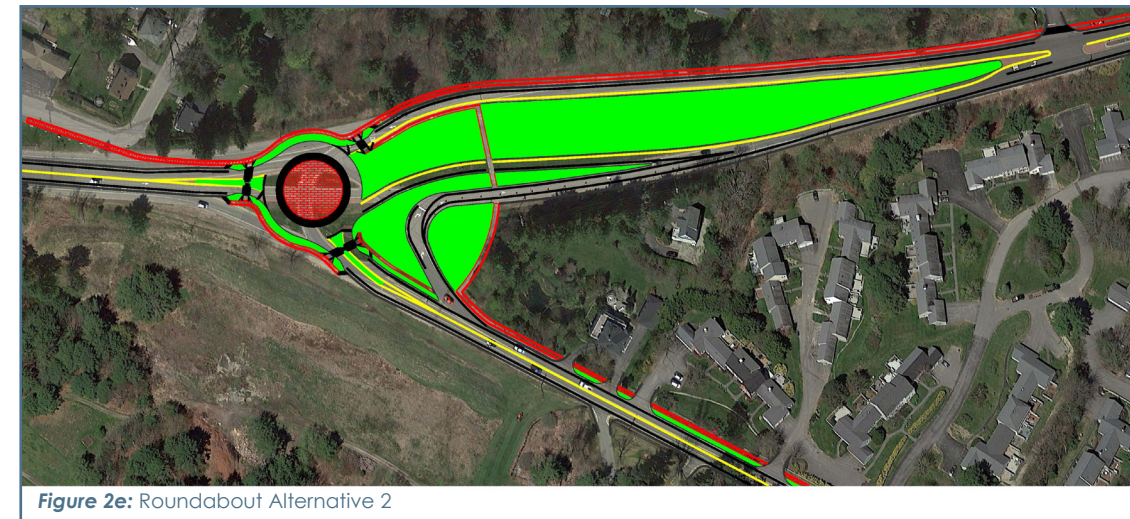


Figure 2e: Roundabout Alternative 2

reduces construction costs. A developable parcel would not be created with this concept.

**Recommended Concept**

Based upon the benefit of creating a development parcel Alternative 1 is recommended. This would add additional construction cost, but would allow the Town to recoup the cost via the creation of a developable land parcel.

**Pedestrian and Bicycle**

The roundabout would be designed to provide separated bicycle/pedestrian paths that would allow users to avoid circulating through the roundabout with vehicular traffic.

**Transit**

The proposed roundabout would incorporate bus stops and safe pedestrian facilities. Short-term improvements shall consider enhancing stops to be fully ADA compliant. Coordination with METRO to determine the best location for stops and amenities is recommended.

**Cost**

Planning Level Cost Estimate Route 88 Recommendations (Alternative 1) in Falmouth	
Improvement	Approximate Cost
Route 88 Roundabout	\$ 1,100,000
Mobilization and MOT (10%)	\$ 110,000
Contingency (20%)	\$ 220,000
<b>Construction Total</b>	<b>\$ 1,430,000</b>
Design Cost (10%)	\$ 143,000
Construction Engineering (8%)	\$ 114,400
<b>Total Cost</b>	<b>\$ 1,687,400</b>

Planning Level Cost Estimate Route 88 Recommendations (Alternative 2) in Falmouth	
Improvement	Approximate Cost
Route 88 Roundabout	\$615,000
Mobilization and MOT (10%)	\$ 61,500
Contingency (20%)	\$123,000
<b>Construction Total</b>	<b>\$799,500</b>
Design Cost (10%)	\$ 79,950
Construction Engineering (8%)	\$ 63,960
<b>Total Cost</b>	<b>\$ 943,410</b>



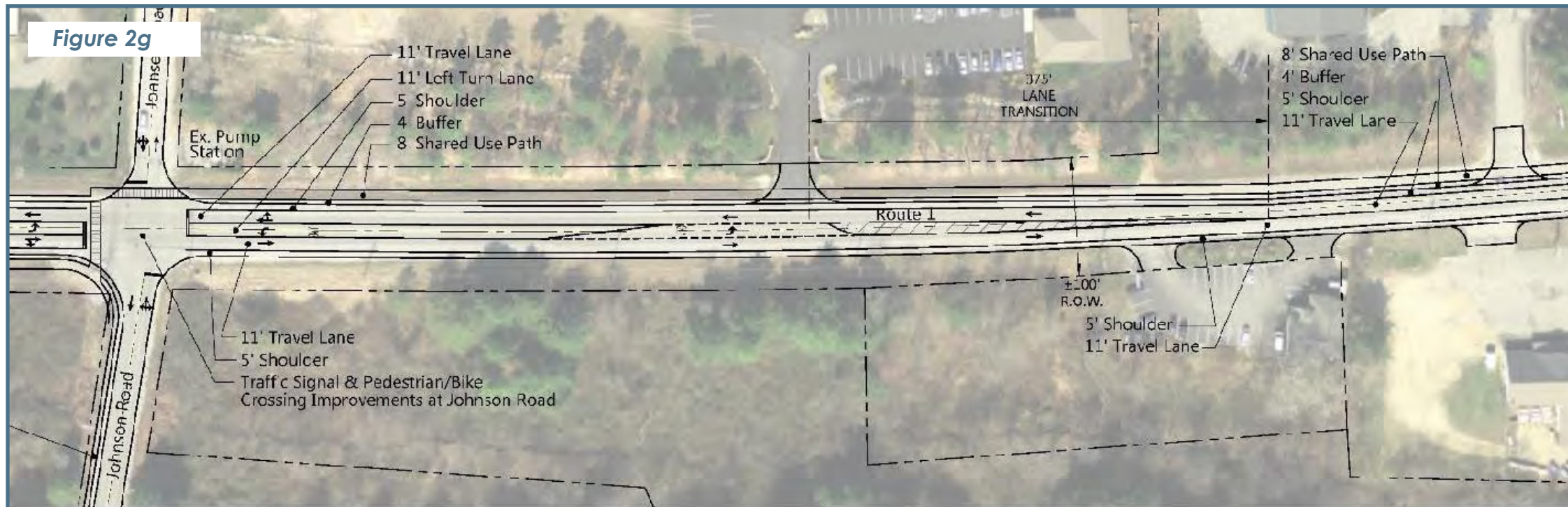
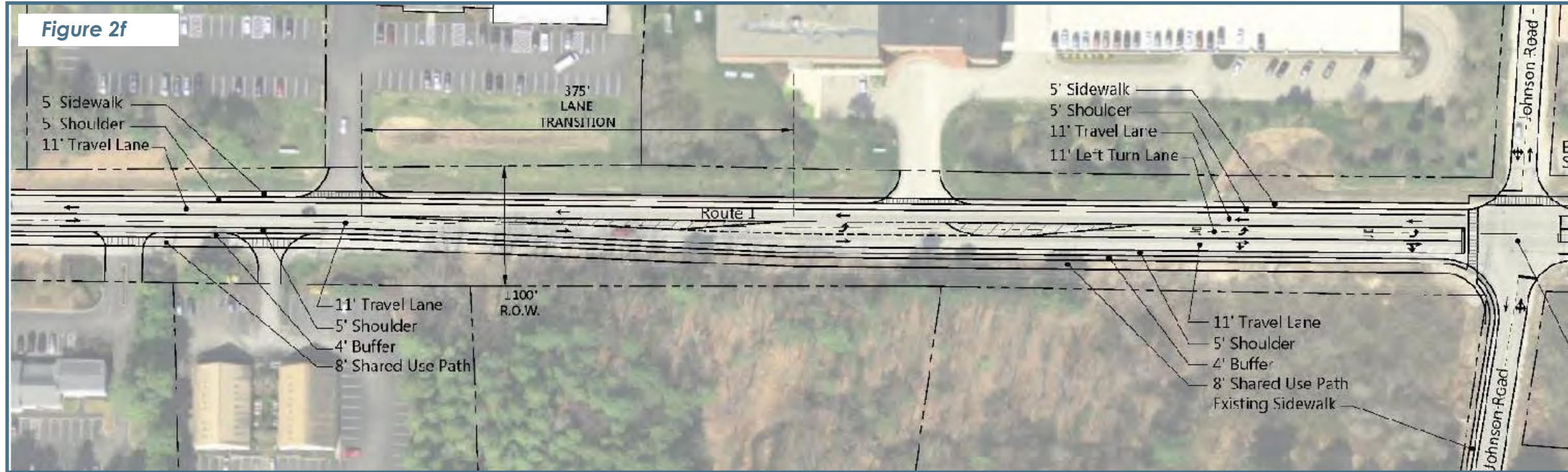
**Route 1 North**

**Alternatives Development**

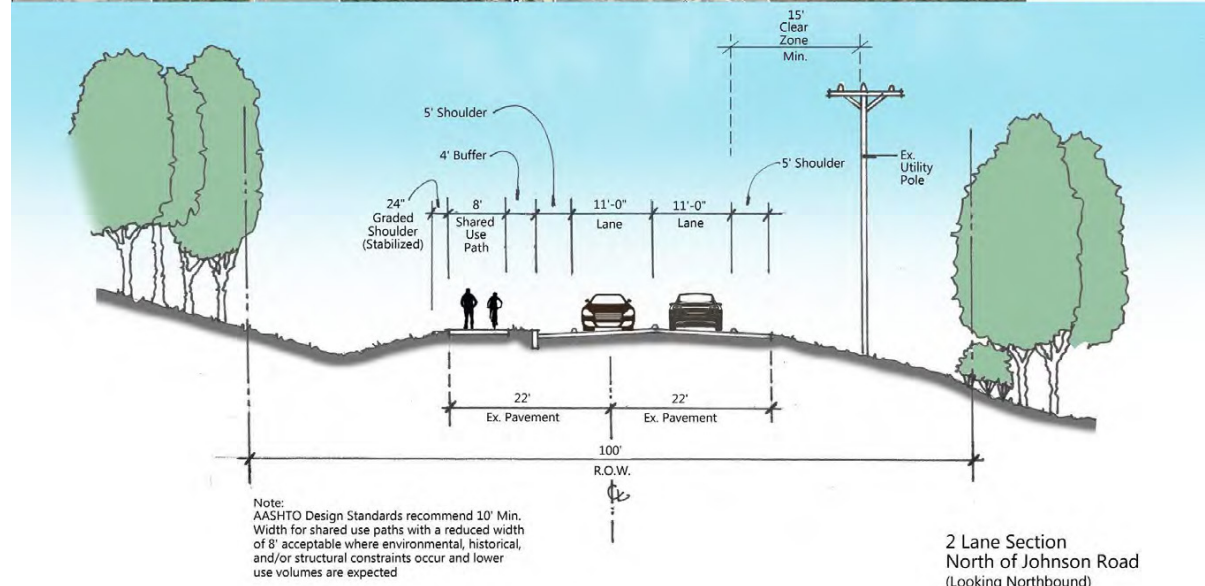
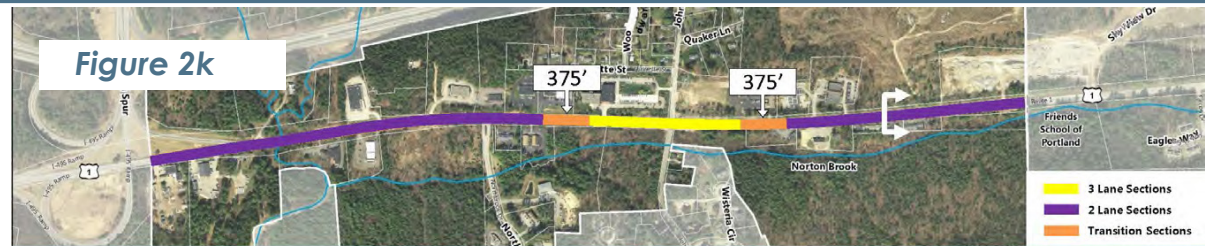
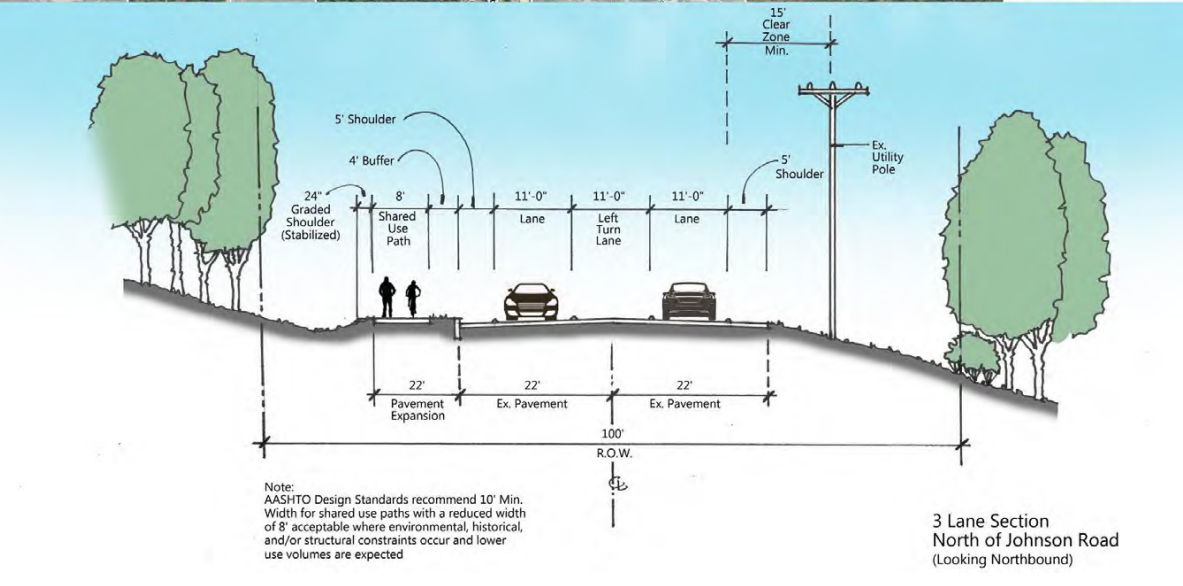
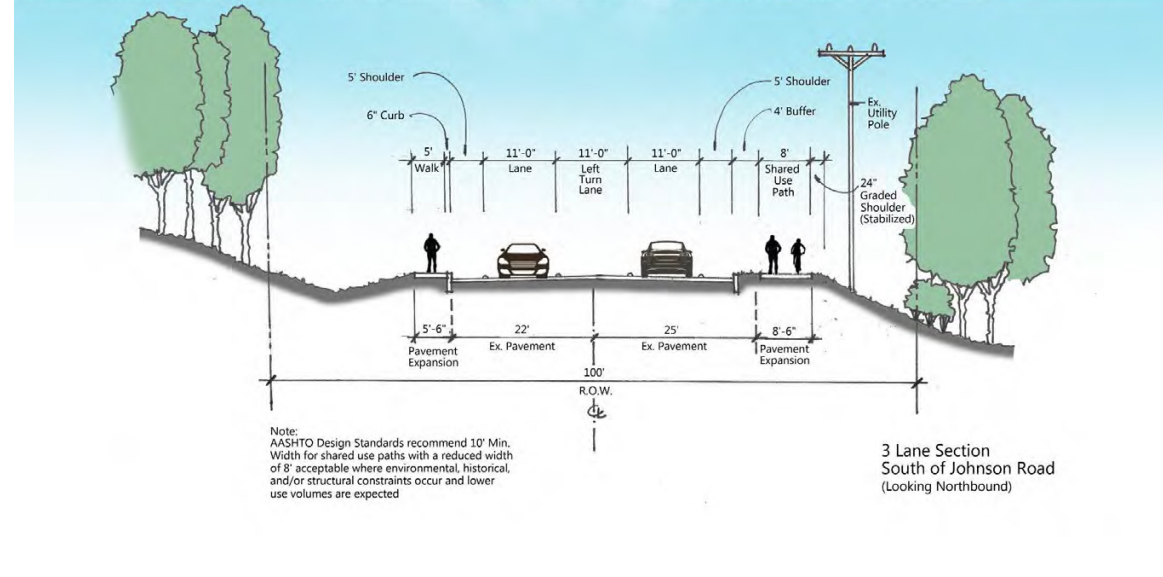
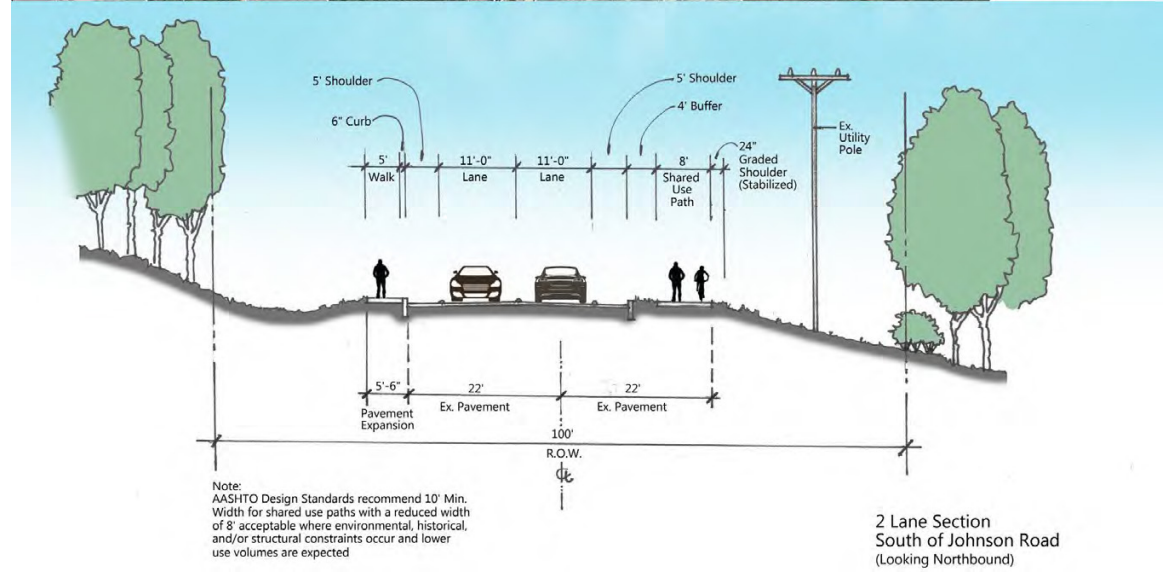
The following recommendations (figures 2f - 2k) were developed in collaboration with the **Route 1 North Vision Plan** prepared by VHB. The transportation related goals of the Vision Plan included:

- encourage individual and community well-being and public safety.
- Improve transportation safety and access for pedestrians, bicyclists, transit riders, and drivers along & through the corridor.
- Coordinate land use and transportation decisions by regulating safe and reasonable access between Route 1 North and adjacent land.

- Provide mobility improvements and transportation choices to residents, businesses, and commuters to









**Recommended Concept**

Figures 2f and 2g present the recommended plan for Route 1 as prepared by VHB. Recommendations include:

- Advance design development for the Route 1 and Johnson Road intersection by including the following:
  - a. Dedicated turn lanes on Route 1
  - b. Pedestrian crosswalks
  - c. New traffic signals and updated controls.
- Make “Gateway” improvements such as landscaping, lighting and signage at north and south end of corridor and Johnson Road intersection.
- Design streetscape improvements along Route 1 and Johnson Road, that will include but not be limited to street trees, lighting and sidewalk connections to abutting areas.
- Update access management standards, where necessary, to minimize curb cuts along Route 1 and encourage/mandate shared access driveways.

**Pedestrian and Bicycle**

Install sidewalk and shared use path and make bicycle lane improvements along Route 1.

Install a sidewalk on south side of Johnson Road from Route 1 to I-295.

**Transit**

Work with METRO to make bus stop facility improvements, including evaluating transit routing/stops based on future development needs.

**Cost**

Planning Level Cost Estimate Route 1 North Recommendations in Falmouth from Vision Plan	
Improvement	Approximate Cost
Route 1/Johnson Road	\$2,140,000
Route 1 South of Johnson Sidewalk and Shared Use Path	\$1,427,000
METRO Bus Stop	\$ 100,000
Route 1 North of Johnson Sidewalk and Shared Use Path	\$1,200,000
Johnson Road Sidewalk to I-295	\$1,110,000
<b>Total Cost</b>	<b>\$5,977,000</b>

**Walking Audit of Existing Route 1 (Bucknam Road to Portland)**

A walking audit of Route 1 between Portland and Bucknam Road was performed with the following issues and

suggested future considerations.

**Route 1 at Bucknam Road**



**Issue:** Long delays on Bucknam Road approach.

**Future Considerations:** Revise signal timing.

**Issue:** Duplicate signal heads.

**Future Considerations:** Suggest no changes at this time.

**Issue:** Long pedestrian wait time.

**Future Considerations:** Consider concurrent pedestrian phasing in the future if traffic and pedestrian volumes warrant changes. This requires additional push buttons.

**Issue:** Corner detectible panel alignment.

**Future Considerations:** Suggest no change at this time.

**Issue:** Right-Turn-On-Red regulation confusion.

**Future Considerations:** Provide supplemental signage.

**Issue:** Push button accessibility at southwest corner too far.

**Future Consideration:** Suggest no change at this time.

**Bucknam Road to Depot Road**



**Issue:** STOP sign not provided on Key Bank/Starbucks Driveway.

**Future Consideration:** Install STOP sign.

**Issue:** Transit stop does not have an accessible landing pad.

**Future Consideration:** Construct bituminous pad.

**Issue:** Inconsistent use of detectible warning panels at Shops at Falmouth Village Driveway.

**Future Consideration:** Suggest no change at this time.

**Issue:** Left Turn Lane Must Turn Left sign is redundant.

**Future Consideration:** Remove sign.

**Route 1 at Depot Road**



**Issue:** Duplicate signal heads.

**Future Consideration:** Remove signal heads.

**Issue:** Long pedestrian wait time.

**Future Consideration:** Provide concurrent pedestrian phasing in the future if traffic and pedestrian volumes warrant changes. This requires additional push buttons.

**Issue:** Corner detectible panel alignment.

**Future Consideration:** Suggest no change at this time.

**Issue:** Push button accessibility at southwest corner too far.

**Future Consideration:** Suggest no change at this time.

**Issue:** Right Turn Lane Must Turn Right sign on Depot Road is redundant.

**Future Consideration:** Remove sign.

**Depot Road to Clearwater Drive**





**Issue:** Inconsistent use of detectible warning panels at Wal-Mart Driveway.

**Future Consideration:** Suggest no change at this time.

**Issue:** Left Turn Lane Must Turn Left sign is redundant.

**Future Consideration:** Remove sign.

### Route 1 at Clearwater Drive



**Issue:** Duplicate signal heads.

**Future Consideration:** Remove signal heads.

**Issue:** Corner detectible panel alignment.

**Future Consideration:** Suggest no change at this time.

**Issue:** Right Turn Lane Must Turn Right sign on Clearwater Drive and Bangor Savings Plaza are redundant.

**Future Consideration:** Remove signs.

### Clearwater Drive to Route 88



**Issue:** Drainage ditch north of Simply Home may be a slope hazard.

**Future Consideration:** Install a barricade.

**Issue:** Transit stop at 170 US Route 1 does not have an accessible landing pad.

**Future Consideration:** Construct bituminous landing pad.

**Issue:** Sidewalk south of Perfect Smile narrow (with guard-rail) is in fair condition.

**Future Consideration:** Improve sidewalk surface condition and shift or remove guardrail.

### Route 1 at Route 88



**Issue:** Bicycle and pedestrian signage confusing at crosswalk north of intersection. Specific issues:

- Advance post-mounted pedestrian warning signs in southbound direction north of crosswalk.
- Post-mounted pedestrian warning signs at crosswalk (both northbound and southbound).
- Overhead bicycle warning sign at crosswalk (both northbound and southbound).
- Standard "block" crosswalk markings.
- Two-way bicycle marked path leading to crosswalks.
- Path STOP signs approaching Route 1.
- METRO Stop on both sides of crosswalk.
- Detectible panels are not provided.

**Future Consideration:** The crossing of Route 1 north of Route 88 should be retrofitted into a shared use facility for both bicyclists and pedestrians. The crossing should be fully ADA compliant. Signage and pavement marking revisions will be required.

**Issue:** Wide southbound bicycle lane.

**Future Consideration:** Install painted buffer to match northbound condition.

**Issue:** Warning signs on Route 88 confusing.

**Future Consideration:** Relocate northbound Route 88 warning sign to the termination of the path.

**Issue:** Bicycle lane on Route 88 approaching Route 1 is not provided and conflict area with right-turns northbound Route 1 is a safety concern.

**Future Consideration:** Route 88 pavement markings should be adjusted to provide an on-road bicycle lane or shoulder.

**Issue:** Sidewalk connectivity on east side of Route 1 is not provided through Route 88 intersection.

**Future Consideration:** Construct sidewalk on east side of Route 1 from the terminus of the sidewalk at Brown Street to sidewalk opposite Waldo's. This is a long-term future recommendation.

As mentioned earlier, **Figure 21** on the following page illustrates a summary of all Falmouth Recommendations.



Figure 21: Falmouth - DRAFT Summary of Recommendations



1 GATEWAY / FALMOUTH FORESIDE	2 TRANSITION AREA	3 RTE. 1 & RTE. 88 INTERSECTION	4 TRANSITION AREA	5 COMMERCIAL DISTRICT	6 TURNPIKE INTERCHANGE	7 EMERGING COMMERCIAL DISTRICT	8 RURAL-SUBURBAN COMMERCIAL
Portland Line to Gilisland Farm Road	Gilisland Farm Road to Rte. 1/Rte. 88 Intersection	Rte. 1/Rte. 88 Intersection	A Perfect Smile to Waldo's General Store	Waldo's General Store to Bucknam Road	Bucknam Road to Rose Stone Driveway	Rose Stone Driveway to Johnson Road	Johnson Road to Cumberland Line
<b>Segment Status</b> <ul style="list-style-type: none"> <li>Sidewalk from Martin's Point Bridge to Brown Street - East side</li> <li>Landscaped islands and bike lanes installed to Gilisland Farm Road in 2016, Northbound lane is buffered near Rte. 88</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Highway-like character</li> <li>Sidewalk on West side connecting to Old Rte. 1 and Providence Ave.</li> <li>Restriped with bike lanes and northbound buffer in 2016</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Restriped with buffered bike lanes in 2016. Bike-ped/shortcut to Rte 1 southbound with clear crossings</li> <li>Sidewalk on West side to A Perfect Smile</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Shared use path with esplanade and lighting on West side</li> <li>Landscaped islands alternating with center turn lanes</li> <li>Striped shoulders</li> <li>Work completed in 2016</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Shared use path with esplanade and lighting on both sides</li> <li>Landscaped islands alternating with center turn lanes</li> <li>Striped shoulders</li> <li>Work completed in 2016</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Sidewalk on West side to Norway Savings Bank</li> <li>Wide shoulders</li> <li>Highway-like character</li> <li>Study to remove interchange, encourage development and change roadway is in progress</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Two-lane highway with wide shoulders</li> <li>Norton Brook runs along East side</li> <li>Areas of steep slopes and possible wetlands</li> </ul>	<b>Segment Status</b> <ul style="list-style-type: none"> <li>Two-lane highway with wide shoulders</li> <li>Norton Brook runs along East side</li> </ul>
<b>Recommendations</b> <ul style="list-style-type: none"> <li>Maintain recent improvements</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Maintain recent improvements</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Long term: Replace with roundabout</li> <li>Short term: Work on improving pedestrian character</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Maintain recent improvements</li> <li>Consider enhancing signage and markings for bicyclists on the path</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Maintain recent improvements</li> <li>Consider enhancing signage and markings for bicyclists on the path</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Implement recommendations of Maine Turnpike Spur redevelopment study</li> <li>Construct shared use path (SUP) on East side</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Install sidewalk on West side of Route 1 to Johnson Rd</li> <li>Construct SUP on East side</li> <li>Possibly re-stripe as three lane section with narrower shoulders and landscaped center islands alternating with left turn pockets</li> <li>Possible crosswalk near Northbrook Drive</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Construct sidewalk on the south side of Johnson Rd to Middle Rd</li> <li>Provide left turn lanes and crosswalks on Route 1 at Johnson Rd</li> <li>Construct shared use path on West side of Route 1</li> <li>Re-stripe as three lane section with narrower shoulders to Cumberland</li> </ul>





# 3.0 CUMBERLAND

## 3.1 OTHER STUDIES AND PROJECTS

Several studies and projects were reviewed during the development of this Plan and included:

- Route 1 Roadway Improvements, GPCEI, April 28, 2016
- Route 1 Design Plan 2009 Town of Cumberland Comprehensive Plan
- Town of Cumberland Route One Design Guidelines, 2003
- Cumberland Foreside Village, Final Subdivision Plan, February 20, 2007
- Cumberland Foreside Village, Amended Final Subdivision Plan, March 4, 2009
- Cumberland Foreside Village, 2nd Final Subdivision Plan, July 30, 2015
- Cumberland Foreside Village, 3rd Final Subdivision Plan, March 22, 2016
- Cumberland Foreside Village, 3rd Final Subdivision Plan, August 18, 2016

## 3.2 DEFINE EXISTING AND PLANNED CONTEXT

### Existing Land Use Context

The majority of Land Use along Route 1 is considered Commercial Growth with pockets of Commercial/Office; an Office/Commercial/Residential TIF District and nearby residential subdivisions. In addition, the Friends School of Portland is located in the southern end of Town. **Figure 3a** illustrates the land use context.

### Existing Transportation Context

**Figure 3b** depicts existing transportation information for Route 1 in Cumberland. Some noteworthy details include:

- Average Annual Daily volumes are the highest south at the Falmouth town line (7,310 vehicles) and lowest near Yarmouth (6,230 vehicles).
- There were no High Crash Locations on Route 1.
- The speed limit is 50 MPH throughout the corridor.
- The East Coast Greenway is not located on Route 1 in Cumberland, but crosses Route 1 on Tuttle Road.
- An intersection turning movement volume count at Tuttle Road notes heavy AM and Peak hour volumes turning on and off of Tuttle Road.

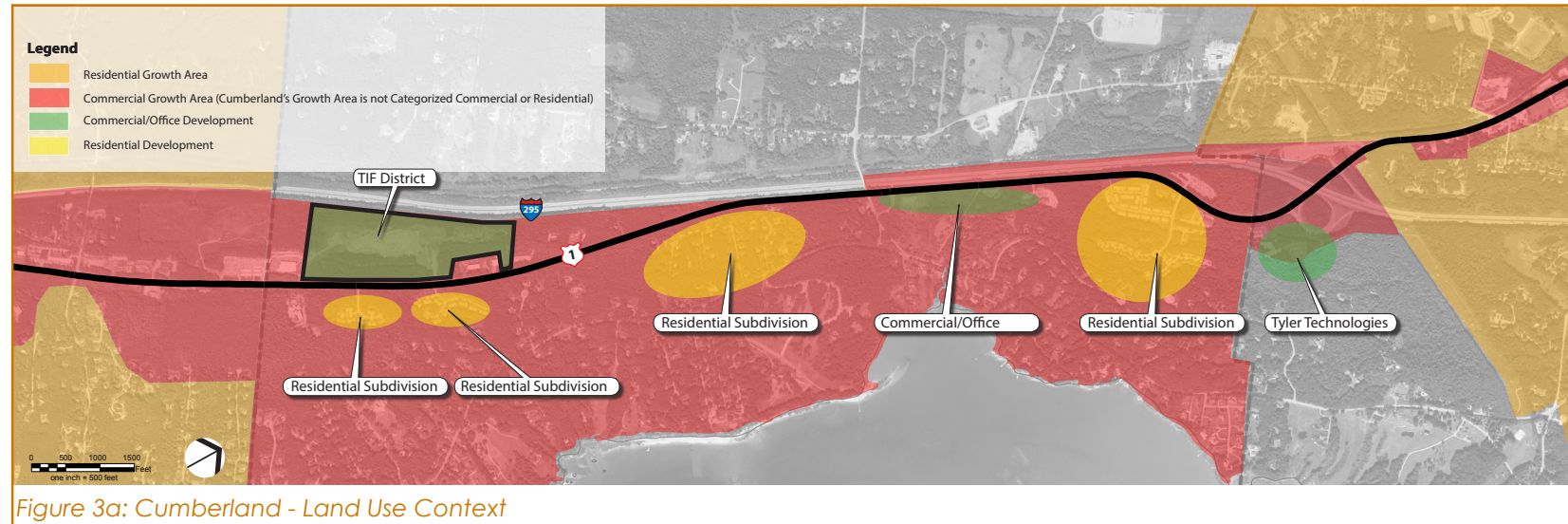
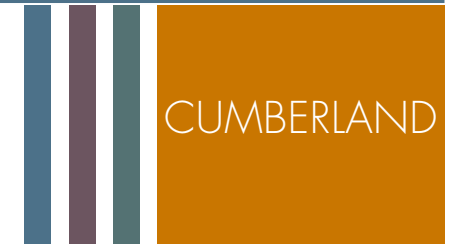


Figure 3a: Cumberland - Land Use Context

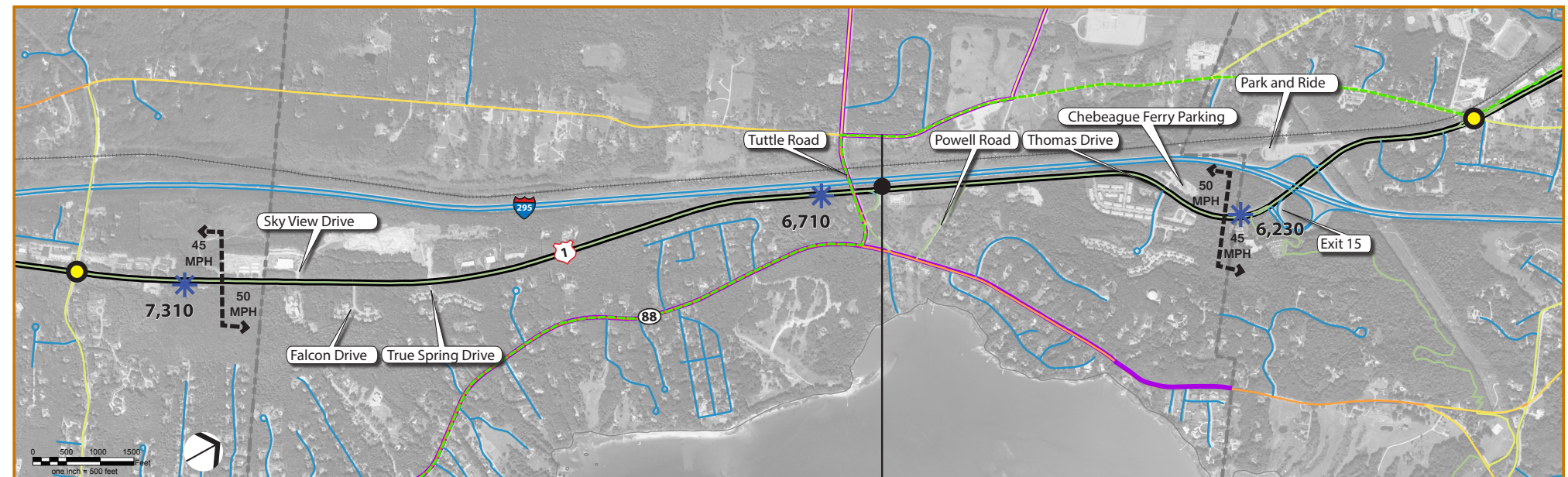
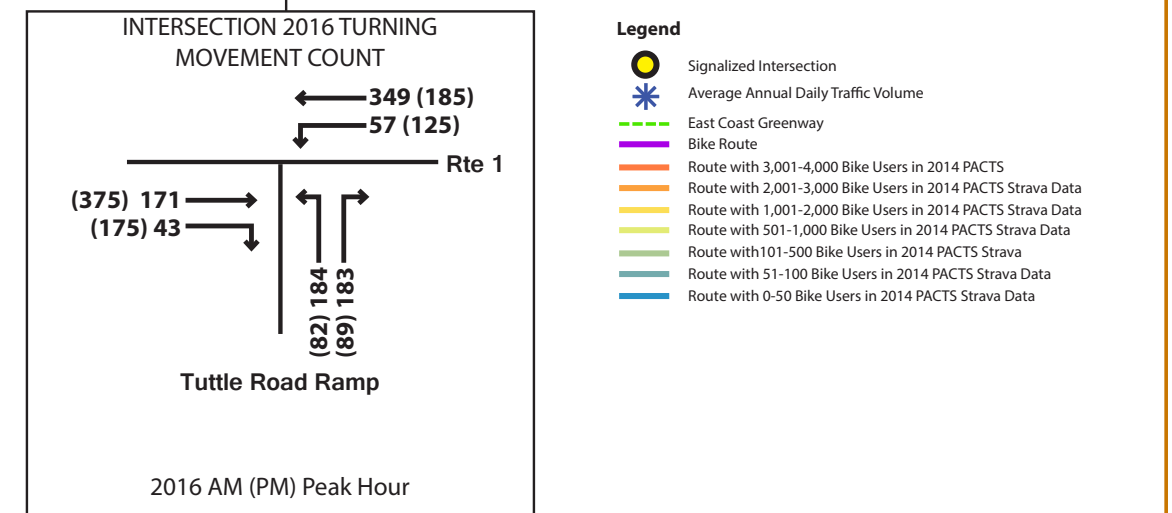


Figure 3b: Cumberland - Transportation Context





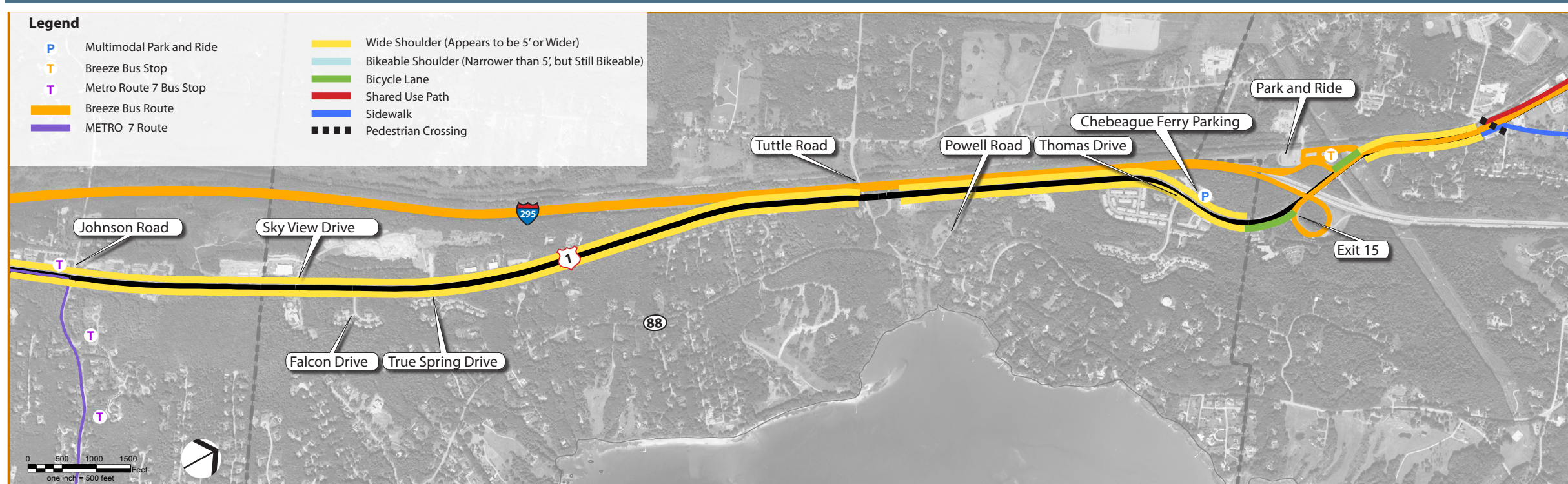


Figure 3c: Cumberland - Multimodal Transportation Facilities and Gaps

### Existing Multimodal Context

Figure 3c provides information on existing facilities. As noted no sidewalks, crosswalks or transit stops exist on Route 1. A wide shoulder is provided for bicycle use.

## 3.3 IDENTIFY ISSUES AND OPPORTUNITIES

### Transportation Street Issues and Opportunities

**Issue:** Vehicle turning conflicts with high vehicles speeds.  
**Opportunities:** Provide turn lanes on Route 1.

**Issue:** Tuttle Road intersection operations.  
**Opportunities:** Investigate traffic control and capacity needs.

### Pedestrian/Bicycle Issues and Opportunities

**Issue:** High vehicle speeds and bicycle comfort.  
**Opportunities:** Enhance shoulder condition.

**Issue:** On-road facility not suitable for young and inexperienced bicyclists.  
**Opportunities:** Provide separated facility.

**Issue:** No pedestrian facilities are provided.  
**Opportunities:** Construction sidewalks and crosswalks.

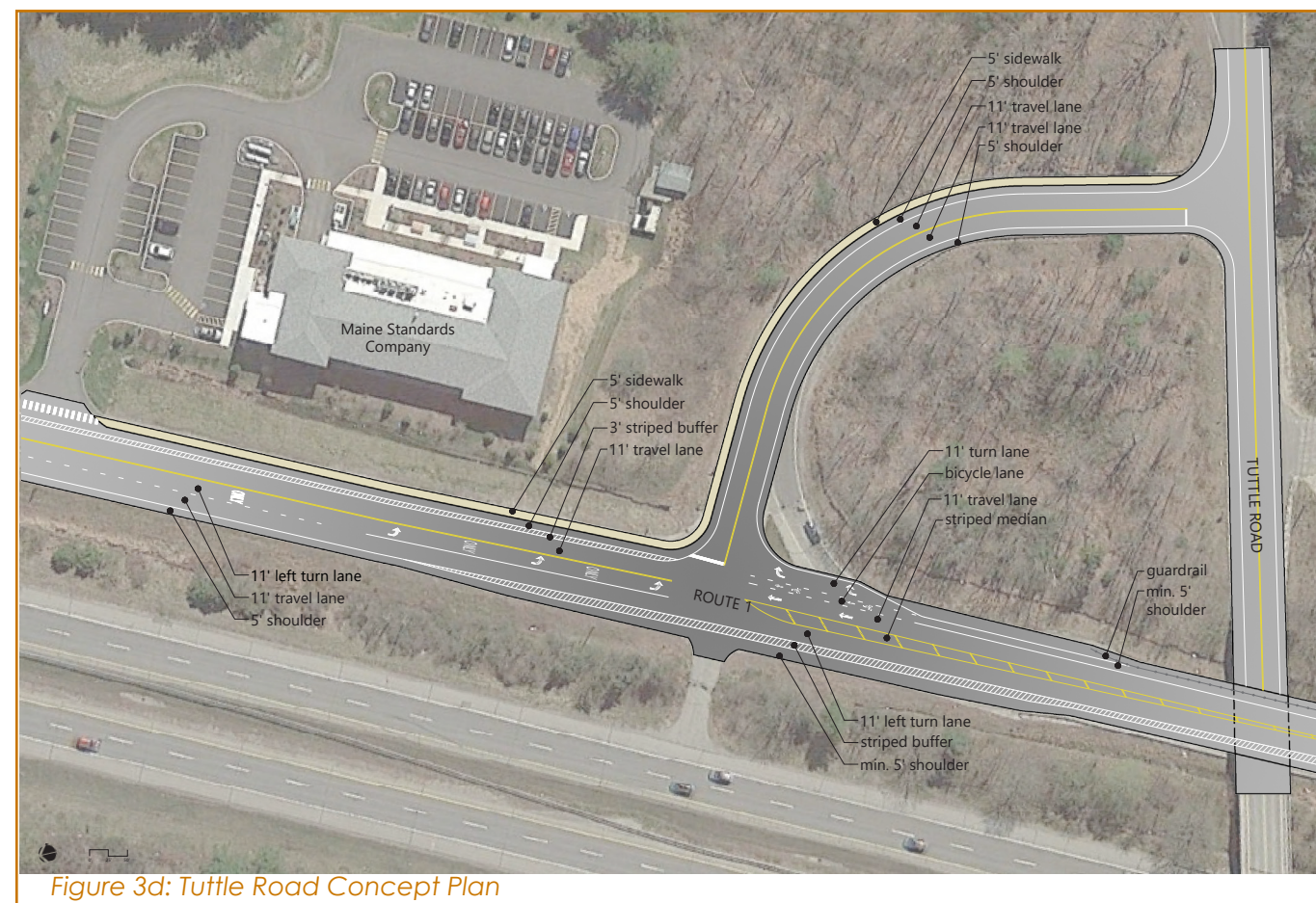


Figure 3d: Tuttle Road Concept Plan



### Transit Issues and Opportunities

Issue: No existing bus stops

Opportunity: Add bus stops.

Issue: Breeze service travels through on I-295 with stop over at the border in Yarmouth at Exit 15 Park and Ride Lot.

Opportunity: Implement a Breeze Stop in Cumberland.

## 3.4 ALTERNATIVE DEVELOPMENT AND RECOMMENDATIONS

Figure 3k illustrates a summary of all recommendations for Cumberland and can be found at the end of this section.

### Tuttle Road Focus Area

#### Alternative Development

Based upon peak hour traffic volumes, a traffic signal is not warranted at this location. Improvements are intended to address interaction between vehicles and bicyclists/ pedestrians.

#### Recommended Concept

Figure 3d illustrates the recommendations. The plan maintains a shoulder or bicycle lane through the intersection, with provision of a painted buffer area, where space permits. The northbound shoulder transitions to a bicycle lane located between the through and right lanes. The high speed channelized right lane onto Tuttle Road is modified to a lower speed design. Five foot shoulders or bicycles lanes are suggested on the Tuttle Road connector with a sidewalk on the north side that connects to a sidewalk on Route 1 (on the east side).

#### Pedestrian/Bicycle

Pedestrian conditions will be improved with the addition of a sidewalk on Route 1 and on the Tuttle Road Connector. Bicycle enhancements include the provision of connected bicycle lanes/shoulders and geometric enhancements that would be expected to calm traffic speeds.

#### Transit

A transit stop is not recommended at this location given lack of pedestrian generating land uses and the distance to Cumberland Center.

#### Cost

Planning Level Cost Estimate Tuttle Road Recommendations in Cumberland	
Improvement	Approximate Cost
Tuttle Road Improvements	\$ 29,500
Mobilization and MOT (10%)	\$ 2,950
Contingency (20%)	\$ 5,900
<b>Construction Total</b>	<b>\$ 38,350</b>
Design Cost (10%)	\$ 3,835
Construction Engineering (8%)	\$ 3,068
<b>Total Cost</b>	<b>\$ 45,253</b>

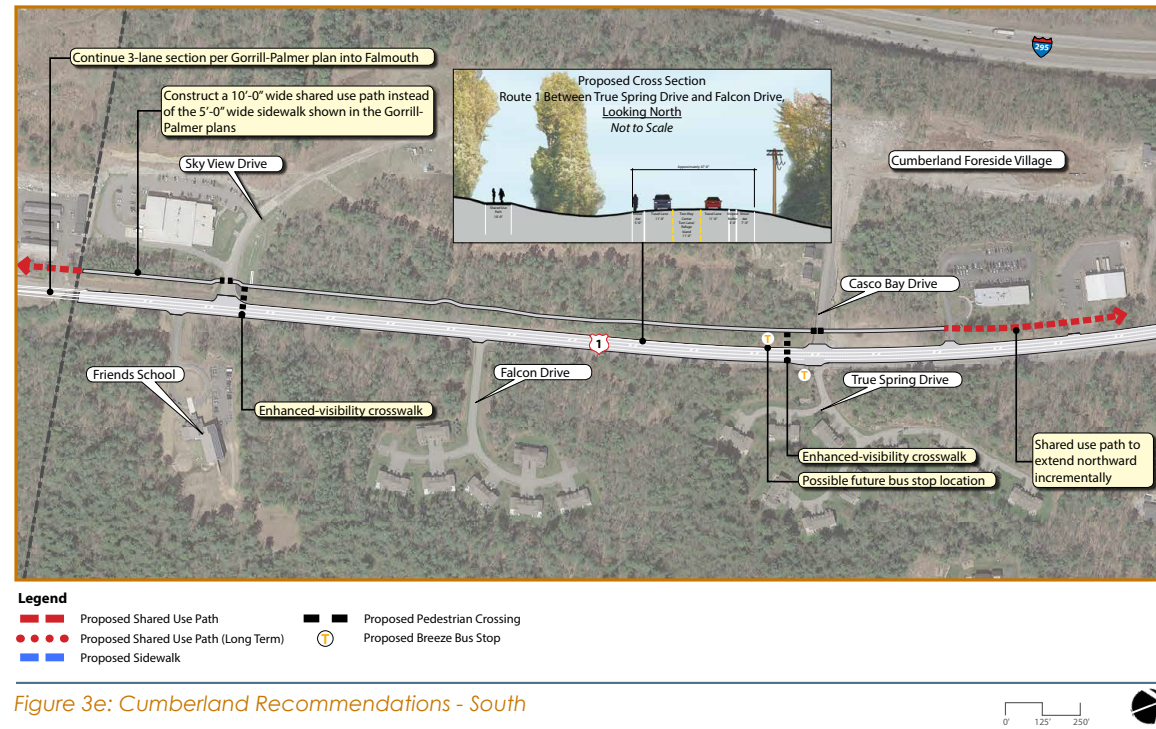


Figure 3e: Cumberland Recommendations - South

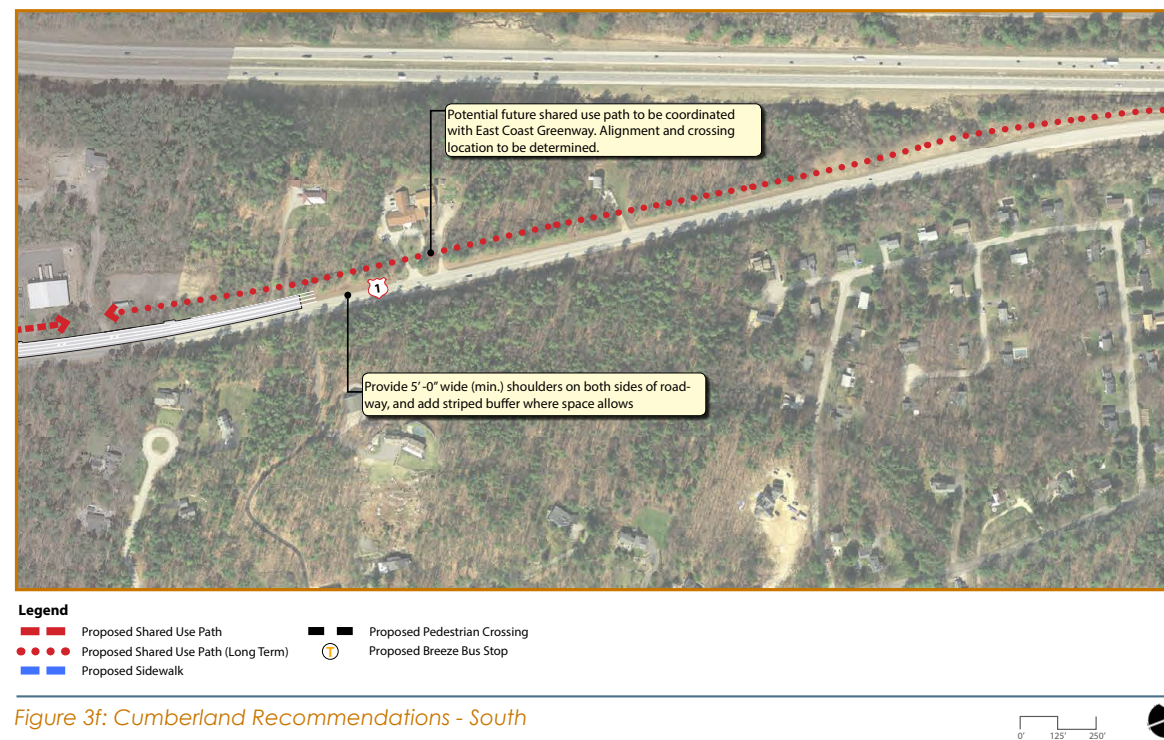


Figure 3f: Cumberland Recommendations - South



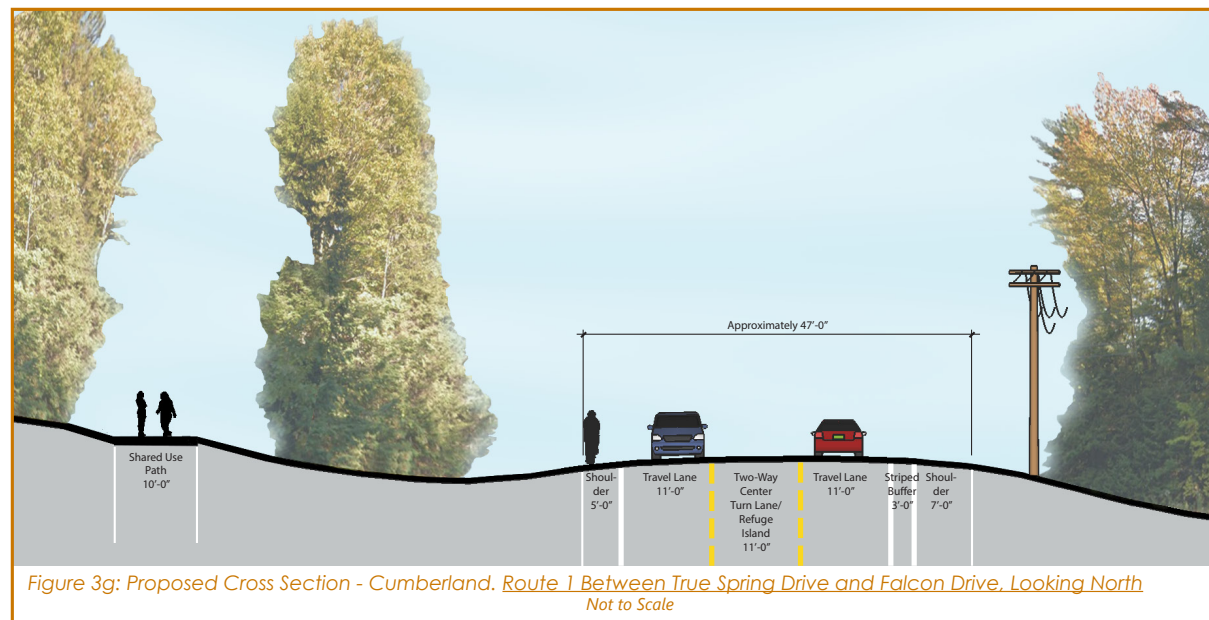


Figure 3g: Proposed Cross Section - Cumberland. Route 1 Between True Spring Drive and Falcon Drive, Looking North. Not to Scale

### Route 1 South

#### Alternatives Development

The Town has been planning significant improvements to Route 1 which generally consists of implementing a three-lane section with one lane in each direction and a center two-way left-turn lane (this was implemented in the summer of 2017). The focus of this Plan was investigating enhancements to the plan as it relates to bicycle and pedestrian conditions. The plan investigated a path connection to Route 88, but given limited right-of-way and resident concerns, this connection is not recommended.

#### Recommended Concept

Figures 3e and 3f present the plan view of the recommended plan and Figure 3g illustrates the proposed cross-section perspective. The suggested enhancements include:

- Providing a painted buffer in the Route 1 northbound shoulder.
- Constructing a 10-foot shared use path on the west side of the Route 1 right-of-way from the Falmouth Town Line to the north. The intent is to incrementally implement construction of the path with a possible designation as the East Coast Greenway. The crossing from the west side to the east side of Route 1 is to be determined.
- Install crosswalks across Route 1 at Skyview Drive and Casco Bay Drive. It is recommended these are enhanced visibility crosswalks and include a rectangular rapid flashing beacons.

#### Pedestrian/Bicycle

The plan enhances bicycle conditions with the provision of a share use path on the west side of Route 1 and proposed buffered shoulders. Enhanced crosswalks will provide safe east-west connections across Route 1 and access to the shared use path.

#### Transit

Install a possible future bus stop at Casco Bay Drive given residential development. Delay in service from shifting the transit route from I-295 to Route 1 is a factor to be evaluated as it relates to feasibility.

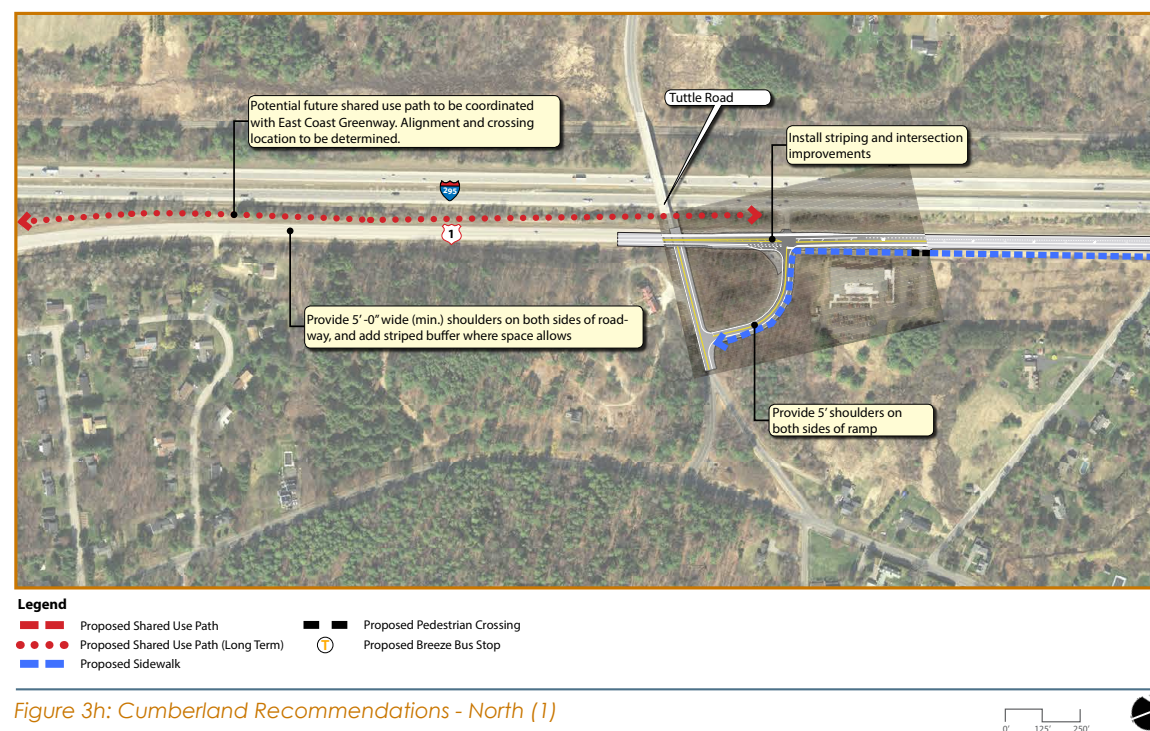


Figure 3h: Cumberland Recommendations - North (1)

#### Cost

Planning Level Cost Estimate Route 1 South Recommendations in Cumberland	
Improvement	Approximate Cost
Route 1 South	\$ 162,500
Mobilization and MOT (10%)	\$ 16,250
Contingency (20%)	\$ 32,500
<b>Construction Total</b>	<b>\$ 211,250</b>
Design Cost (10%)	\$ 21,125
Construction Engineering (8%)	\$ 16,900
<b>Total Cost</b>	<b>\$ 249,275</b>



### Route 1 North

#### Alternatives Development

Similar to Route 1 South, the focus of improvement recommendations was modification of the Route 1 Plan.

#### Recommended Concept

Figures 3h, 3i and 3j, present the improvement concepts. The suggested enhancements include:

- Implement a three lane section with a center two-way left-turn lane from Tuttle Road northerly to south of Thomas Drive.
- Provide 5-foot minimum shoulders on both sides of Route 1. Where space allows, provide a painted buffer.
- Construct a 5-foot sidewalk on the east side of Route 1 from the Tuttle Road Connector to the Yarmouth Town Line.
- Consider a shared use path to be coordinated with the East Coast Greenway.
- Install improvements at the Tuttle Road intersection as summarized previously.

#### Pedestrian/Bicycle

A sidewalk is proposed along the east side of Route 1 and buffered shoulders are proposed for enhanced bicycle conditions.

#### Transit

No bus stops are proposed in this section of Route 1.

#### Cost

Planning Level Cost Estimate Route 1 North Recommendations in Cumberland	
Improvement	Approximate Cost
Route 1 North	\$ 230,000
Mobilization and MOT (10%)	\$ 23,000
Contingency (20%)	\$ 46,000
<b>Construction Total</b>	<b>\$ 299,000</b>
Design Cost (10%)	\$ 29,900
Construction Engineering (8%)	\$ 23,920
<b>Total Cost</b>	<b>\$ 352,820</b>

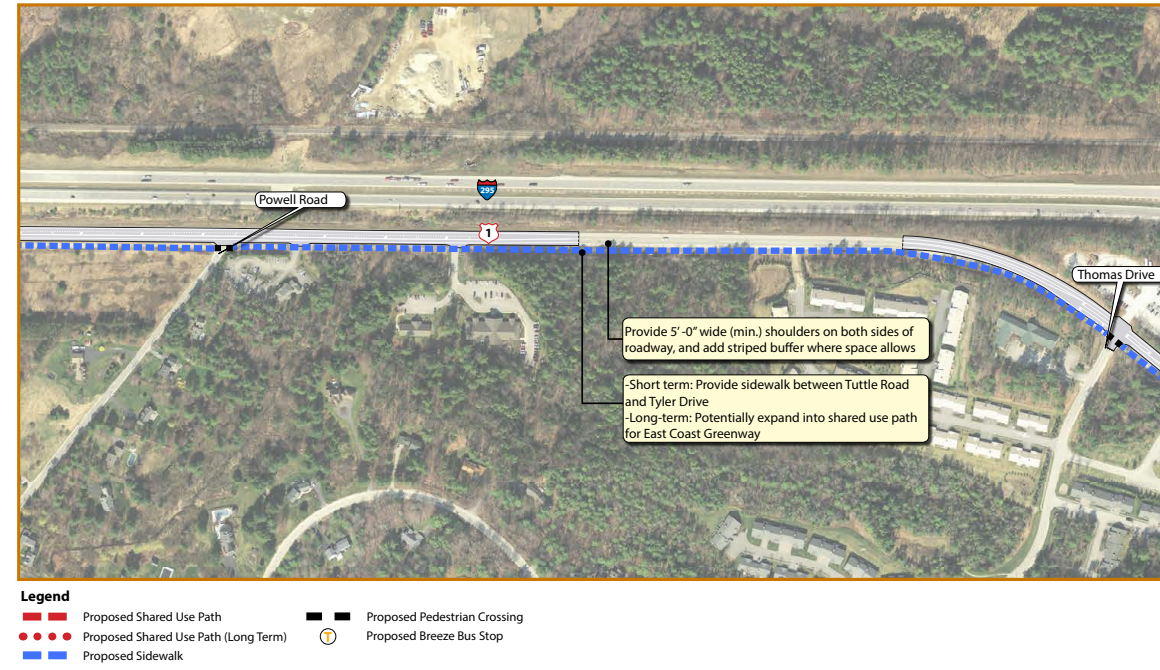


Figure 3i: Cumberland Recommendations - North (2)

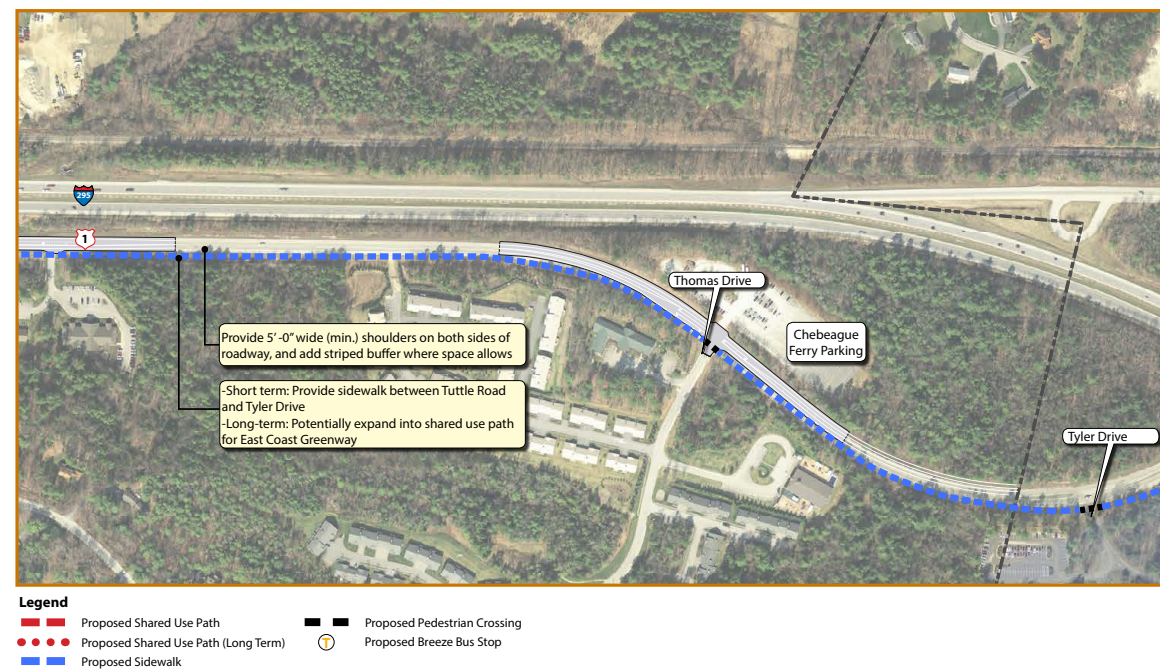
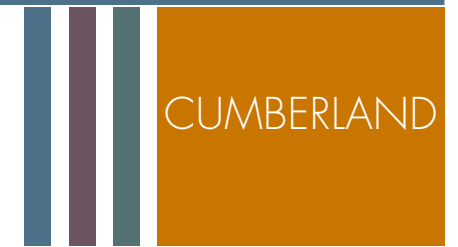


Figure 3j: Cumberland Recommendations - North (3)



Figure 3k: Cumberland - Summary of Recommendations - February 7th, 2018



**1 RURAL-SUBURBAN COMMERCIAL**

Falmouth Line to Conifer Ridge Cul de Sac

- Segment Status**
- Highway-like character
  - Plan has been completed to re-stripe as three lane section and construct shared use path on West side
  - New commercial construction planned for West side



- Recommendations**
- Implement re-stripping and plan and construct shared use path. Extend path northward incrementally.
  - Provide crosswalks with pedestrian refuges at Skyview Drive and True Spring Drive
  - Provide bus stop at Casco Bay

**2 LOW-DENSITY RESIDENTIAL**

Conifer Ridge Cul de Sac to Tuttle Road

- Segment Status**
- Highway-like character
  - Plan has been completed to re-stripe as three lane section



- Recommendations**
- Implement re-stripping plan
  - Long term potential extension of East Coast Greenway (ECG) shared use pathway to be coordinated with ECG. Alignment and crossing location to be determined.

**3 TUTTLE ROAD INTERSECTION**

Tuttle Road Intersection

- Segment Status**
- Highway-like character
  - Plan has been completed to re-stripe as three lane section that maintains narrow shoulders and right-turn slip lane



- Recommendations**
- Eliminate the island and square up the intersection
  - Provide a 5-foot bike lane between through & right lanes
  - Change markings on Rte 1 to a shoulder with a 3-foot buffer
  - 5-foot shoulders and sidewalk on ramp

**4 COMMERCIAL/ RESIDENTIAL**

Tuttle Road to Sand Point Lane

- Segment Status**
- Highway-like character
  - Plan has been completed to re-stripe as three lane section



- Recommendations**
- Implement re-stripping plan
  - Construct sidewalk or shared use path on East side between Tuttle Road and Sand Point Lane
  - Provide buffered shoulders where space allows

**5 TRANSITION AREA**

Sand Point Lane to Yarmouth Line

- Segment Status**
- Highway-like character
  - Steep slopes toward Yarmouth Line
  - Plan has been completed to re-stripe as three lane section



- Recommendations**
- Implement re-stripping plan
  - Construct sidewalk or shared use path on East side between Sand Point Lane and Yarmouth Town Line
  - Provide buffered shoulders where space allows



# 4.0 YARMOUTH

## 4.1 OTHER STUDIES AND PROJECTS

Several studies and projects were reviewed during the development of this Plan and included:

- Beth Condon Extension Feasibility Study
- Route 1 Corridor Study, 2005
- Route 1 Corridor Study Phase II, 2009
- Yarmouth Comprehensive Plan, 2010
- Route 1 Corridor Study Phase III, 2013
- Yarmouth Bicycle and Pedestrian Network Recommendations, 2015
- Main Street Bridge Preliminary Design Report and Support Materials, 2015
- Route 1/Exit 17 Traffic Signal Design Plan

## 4.2 DEFINE EXISTING AND PLANNED CONTEXT

### Existing Land Use Context

The majority of the Route 1 corridor is Commercial/Office with designated Commercial Growth areas at Exits 15 and 17, Highway Commercial north of Exit 17, and Village Core land use near Main Street. **Figure 4a** illustrates the land use context.

### Existing Transportation Context

**Figure 4b** depicts existing transportation information for Route 1 in Yarmouth. Some noteworthy details include:

- Average Annual Daily volumes are the highest south of Exit 17 (15,900 vehicles) and lowest near the Freeport Town line (8,770 vehicles).
- The East Main Street and Exit 17 Southbound Ramps intersections are High Crash Locations.
- The speed limit is primarily 40 MPH with the exception of south of Portland Street where it is 45 MPH.
- The East Coast Greenway enters Yarmouth via Portland Street and follows the Beth Condon path to Hannaford Drive, to Willow Street, to Route 88, and to Route 1.
- An intersection turning movement volume count at Hannaford Drive/Willow Street notes volumes on Hannaford Drive are significant during the PM peak hour.
- An intersection turning movement count at Route 88 notes heavy turns onto and off of Route 88.
- An intersection turning movement count at the Exit 17 southbound intersection notes heavy right turns from I-295 Southbound.

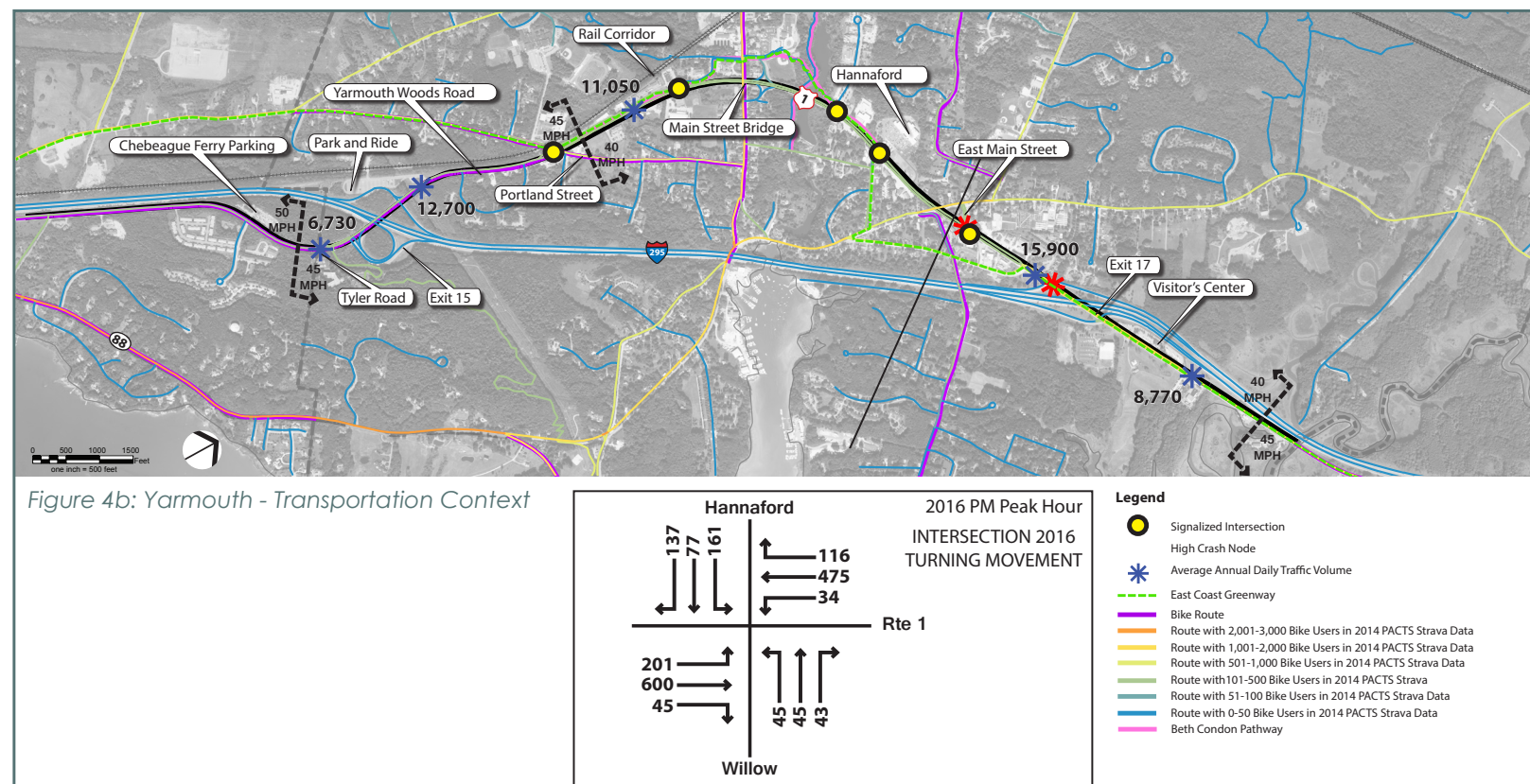
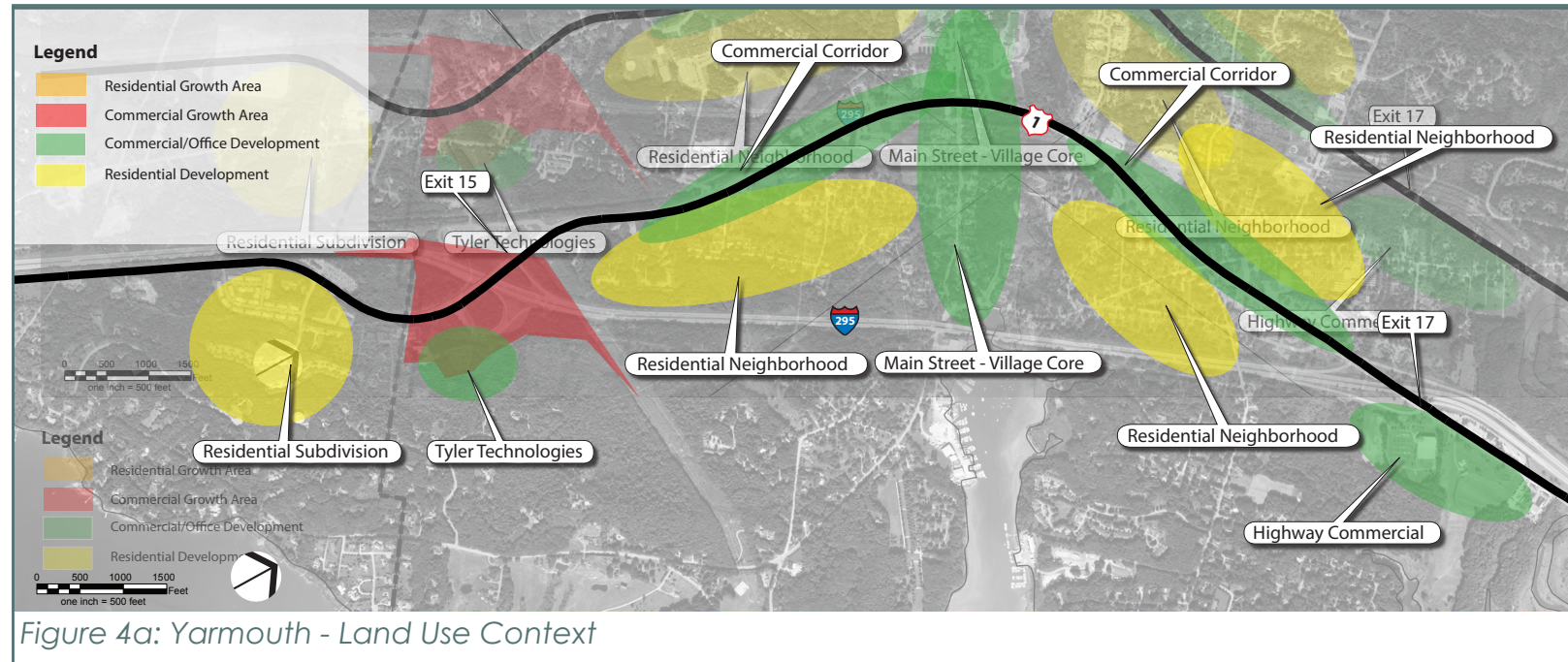
### Existing Multimodal Context

**Figure 4c** on the following page provides information on existing facilities and notes where sidewalks are not present (Route 1 south of Portland Street as an example), crosswalks, general bicycle accommodations and transit stop locations.

## 4.3 IDENTIFY ISSUES AND OPPORTUNITIES

### Transportation Street Issues and Opportunities

*Issue:* Improve Portland Street traffic conditions.  
*Opportunity:* Reconfigure intersection.





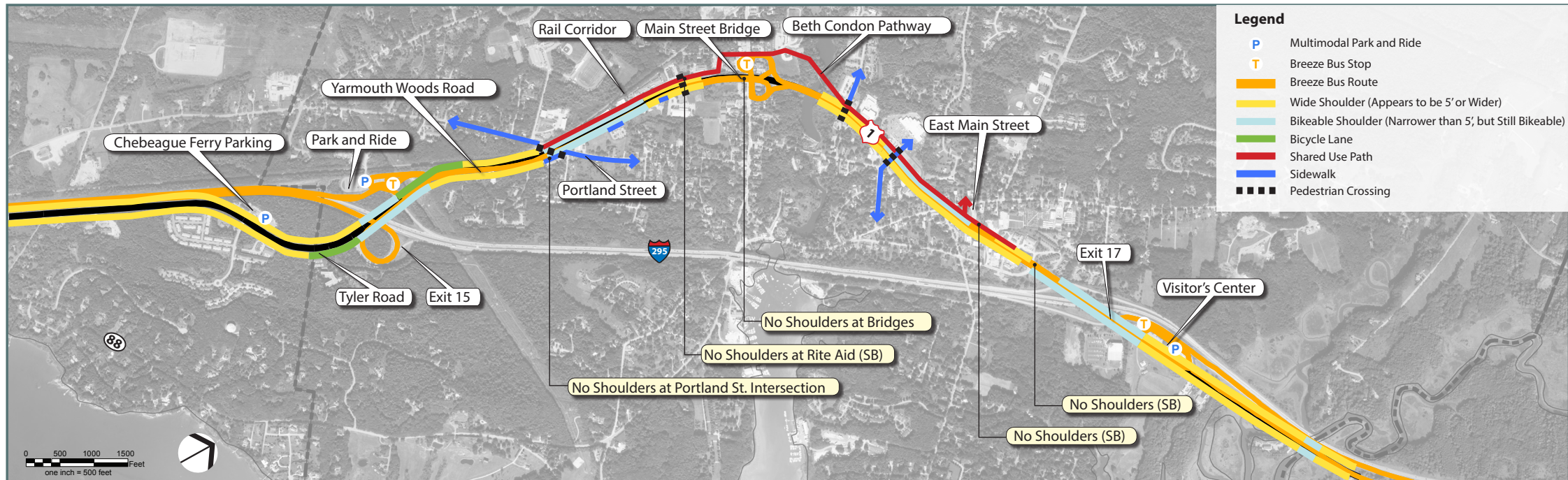


Figure 4c: Yarmouth - Multimodal Transportation Facilities and Gaps

*Issue:* NYA traffic movements difficult.  
*Opportunity:* Relocate existing Rite Aid traffic signal.  
*Issue:* Excessive roadway capacity at Hannaford Drive/Willow Street.  
*Opportunity:* Right size intersection.  
*Issue:* Safety and mobility at Route 88 and Exit 17 Southbound Ramps intersections.  
*Opportunity:* Consider traffic signal or roundabout.

**Pedestrian/Bicycle Issues and Opportunities**

*Issue:* Pedestrian connectivity south of Portland Street.  
*Opportunity:* Construction sidewalks.  
*Issue:* Pedestrian crossings at Portland Street.  
*Opportunity:* Enhance and expand crossing locations. The Town will be implementing short-term improvements.  
*Issue:* No pedestrian facilities on east side of Route 1.  
*Opportunity:* Investigate sidewalks.  
*Issue:* Beth Condon Path indirectness across Main Street.  
*Opportunity:* Extend Path across Main Street Bridge.  
*Issue:* Unsafe pedestrian crossings at the East Main Street intersection.  
*Opportunity:* Add crosswalk across Route 1.  
*Issue:* Pedestrian connectivity to Bayview residential neighborhood.  
*Opportunity:* Investigate sidewalk connection to Bayview Street.

*Issue:* Pedestrian crossings of Route 1 are unsafe between East Main Street and Exit 17.  
*Opportunity:* Investigate enhanced or controlled crossing locations.  
*Issue:* Beth Condon Path extension location to Freeport.  
*Opportunity:* Locate to best interact with east side land uses and Cousins River Bridge design.

**Transit Issues and Opportunities**

*Issue:* Lack of bus stop landing and shelter at Park & Ride Lot.  
*Opportunity:* Enhance bus stop.  
*Issue:* Bus safety and operations at Hannaford Drive.  
*Opportunity:* Provide bus pull out.  
*Issue:* Limited number of bus stops in Town.  
*Opportunity:* Consider adding additional bus stops.

**4.4 ALTERNATIVE DEVELOPMENT AND RECOMMENDATIONS**

Figure 4s illustrates a summary of all recommendations for Yarmouth and can be found at the end of this section. For Route 1, the Town recommends 11-foot travel lanes, marked bicycle lanes – where width allows and 6-foot sidewalks.

**Route 1 South of Portland Street**

**Alternatives Development**  
 This section primarily seeks to improve pedestrian and bicycle conditions with added sidewalks/paths. See **Figure 4d**.

**Recommended Concept/Pedestrian and Bicycle**

Provide a sidewalk connection on the east side of Route 1 to the Cumberland Town line. It should be noted that a shared-use path across I-295 is recommended at the time of the replacement/rehabilitation of the overpass, with connection to the future Beth Condon Path at the Park & Ride lot. Extend the Beth Condon Path from Portland Street to the Park & Ride

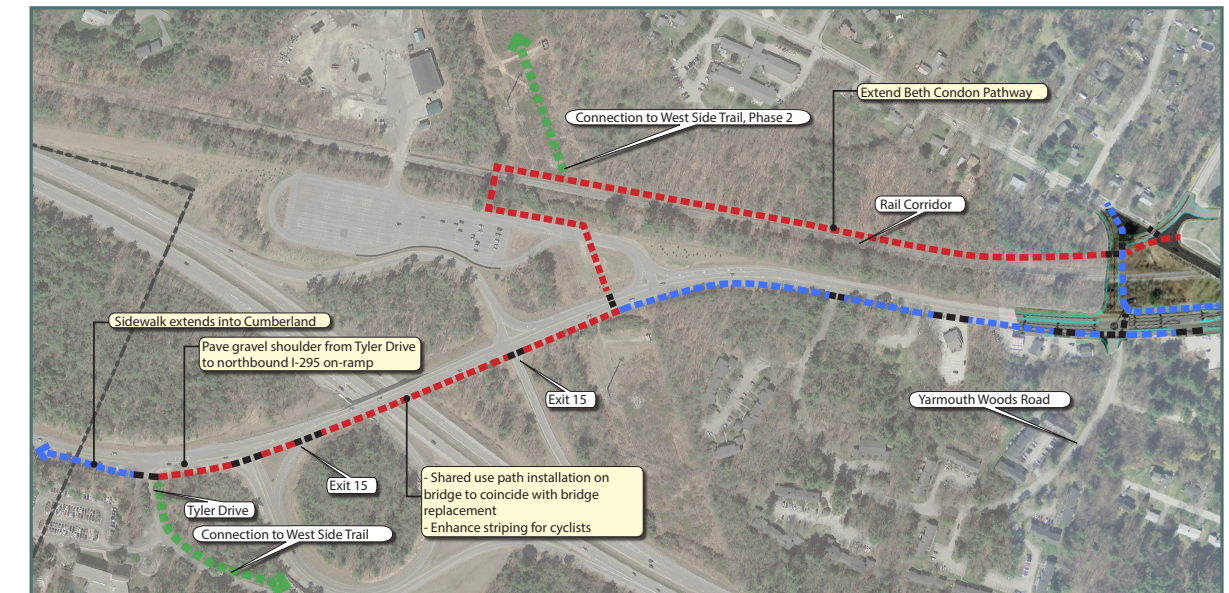


Figure 4d: Yarmouth Recommendations - Sheet 1 of 6



Lot and it should meet East Coast Greenway Standards. Pave northbound shoulder from Tyler Drive to northbound I-295 on-ramp.

**Transit**

An ADA compliant landing pad and bus stop amenities (e.g. bench and/or shelter) should be provided at the Park & Ride Lot.

**Cost**

Planning Level Cost Estimate Cumberland to Portland St. Recommendations in Yarmouth	
Improvement	Approximate Cost
Cumberland to Portland Street	\$ 229,050
Mobilization and MOT (10%)	\$ 22,985
Contingency (20%)	\$ 45,970
<b>Construction Total</b>	<b>\$ 298,805</b>
Design Cost (10%)	\$ 29,881
Construction Engineering (8%)	\$ 23,905
<b>Total Cost</b>	<b>\$ 352,591</b>

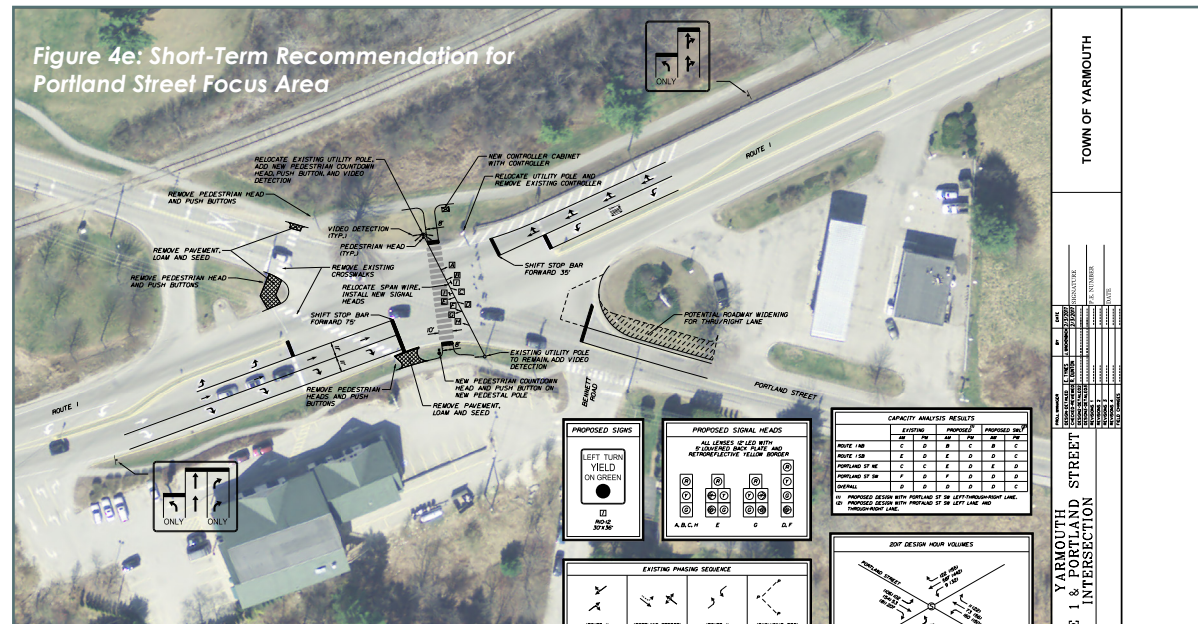
**Portland Street Focus Area**

**Alternative Development**

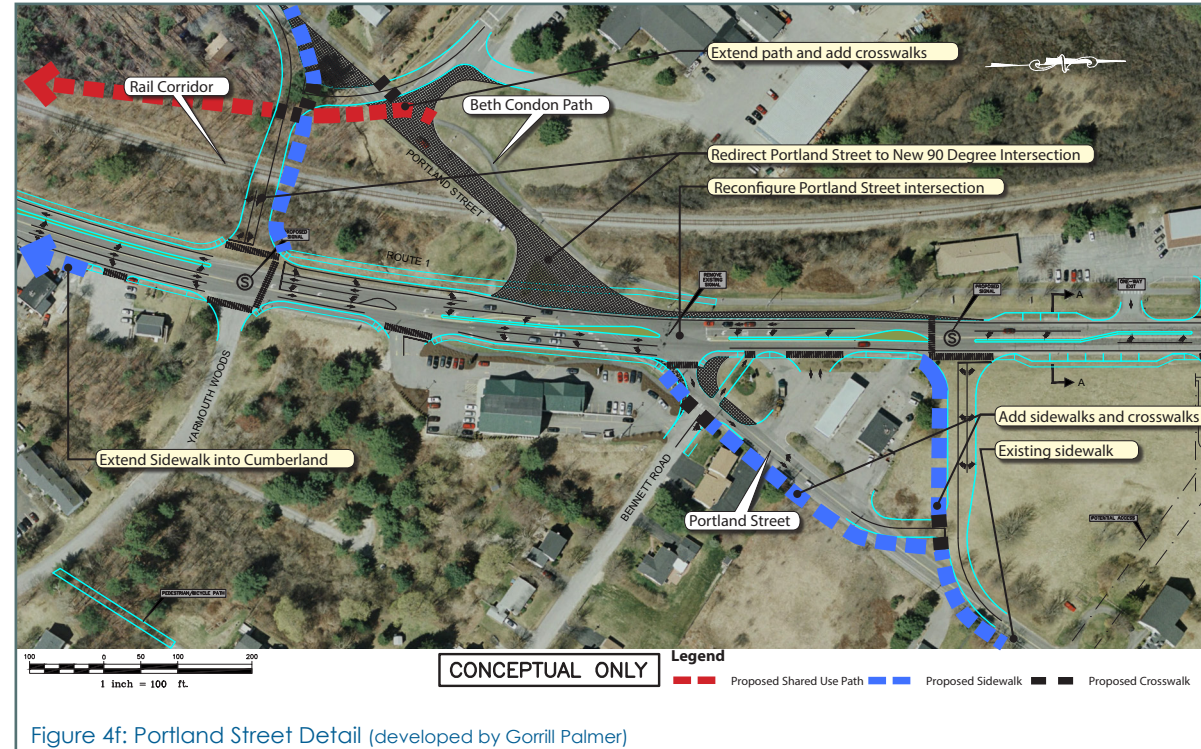
Improvements at this location generally match concepts considered in the Route 1 Corridor Study. Based upon direction from the Town, the "Bow Tie" Roundabout is not supported and thus the reconfigured intersection is recommended.

**Recommended Concept**

Short-term recommendations are depicted on **Figure 4e** and consist of adding a diagonal crosswalk through the intersection and improving approach lane alignment.



**Figure 4f** presents the recommended improvement, which removed the current Portland Street approaches and creates two new T-intersections north and south of the existing traffic signal. Both of the two new intersections would be signalized and provide safe controlled



**Figure 4f: Portland Street Detail** (developed by Gorriell Palmer)

pedestrian crossings. Sidewalks or the Beth Condon Path would provide safe pedestrian accommodations on most roadways.

**Pedestrian and Bicycle**

- Sidewalks connections on east side of Route 1 to the south.
- Route 1 crossings at both northerly and southerly signalized intersections.
- A sidewalk on the north side of Portland Street (westerly leg).
- Connecting the Beth Condon Path to the westerly leg of Portland Street.
- A sidewalk on easterly leg of Portland Street.
- Bicycle lanes on Route 1.

**Transit**

New bus stops should be added to the new Portland Street southerly signalized intersection. Bus stops should be provided on the far side of the intersection in both directions and include ADA compliant landing areas and amenities.

**Cost**

Planning Level Cost Estimate Portland Street Recommendations in Yarmouth	
Improvement	Approximate Cost
Portland Street	\$ 950,000
Mobilization and MOT (10%)	\$ 95,000
Contingency (20%)	\$ 190,000
<b>Construction Total</b>	<b>\$ 1,235,000</b>
Design Cost (10%)	\$ 123,500
Construction Engineering (8%)	\$ 98,800
<b>Total Cost</b>	<b>\$ 1,457,300</b>



### Route 1 Between Portland Street and Main Street

#### Alternatives Development

This section primarily seeks to improve pedestrian conditions with added sidewalks.

#### Recommended Concept

Figure 4g and 4h illustrate the recommendations, and primarily consist of adding a sidewalk on the east side of Route 1 and relocating the traffic signal currently located at Rite Aid to the NYA entrance (with continued control of shopping center traffic). The plan suggests formalizing a three-lane roadway section with the center lane used for left-turn movements and raised landscaped islands.

- Improve connections between the Beth Condon Path and buildings.
- Bicycle lanes on Route 1.
- Construct a mid-block crosswalk between the Rite Aid traffic signal and Portland Street. It is suggested that a median refuge island be provided with Rectangular Rapid Flash Beacons. It is suggested the crosswalk be located south of the Pratt Abbott north-erly driveway (the southerly driveway is being closed).

#### Transit

No transit improvements are recommended.

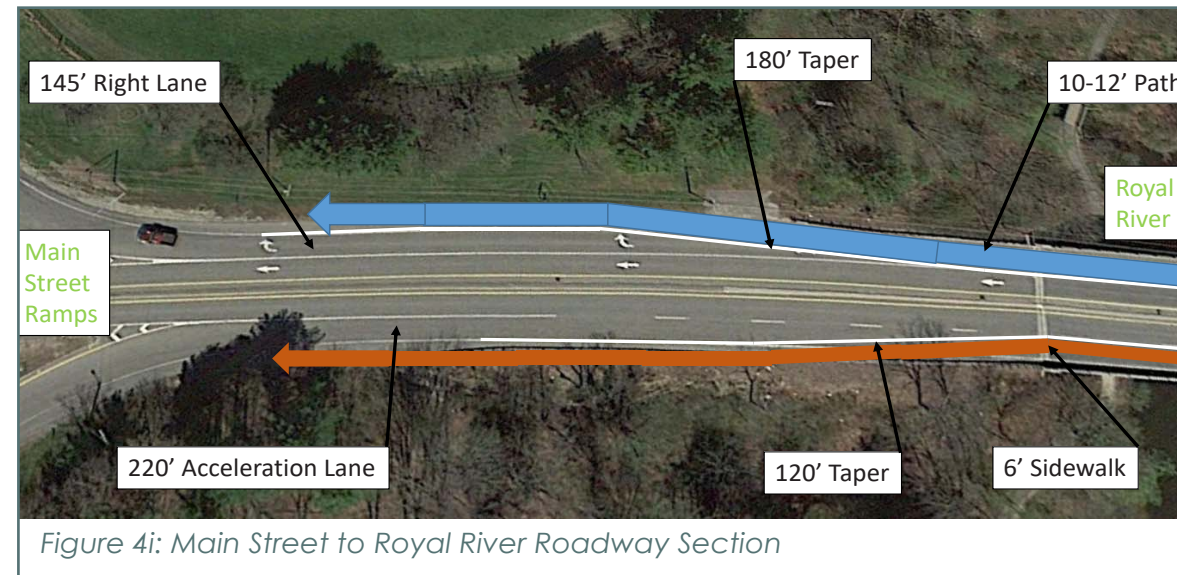
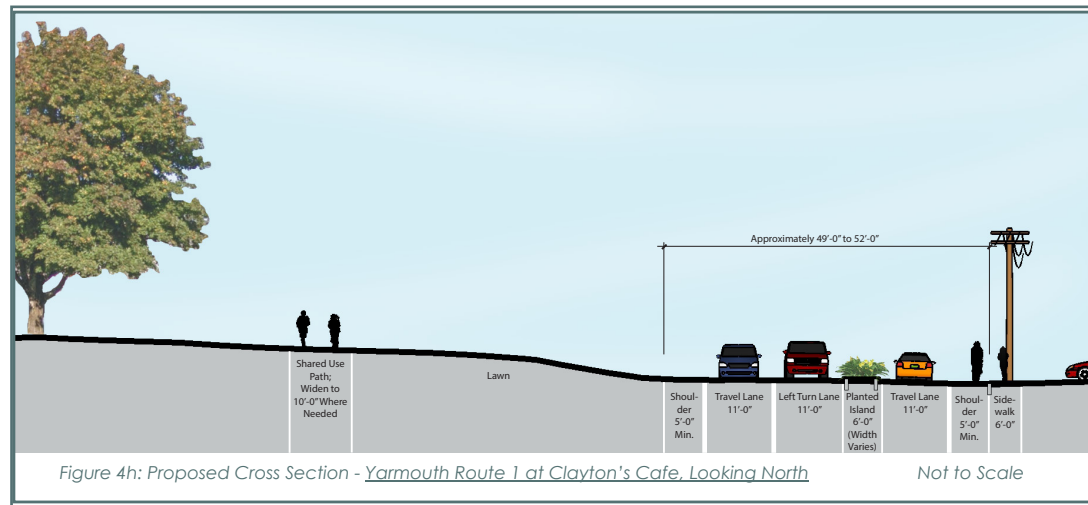
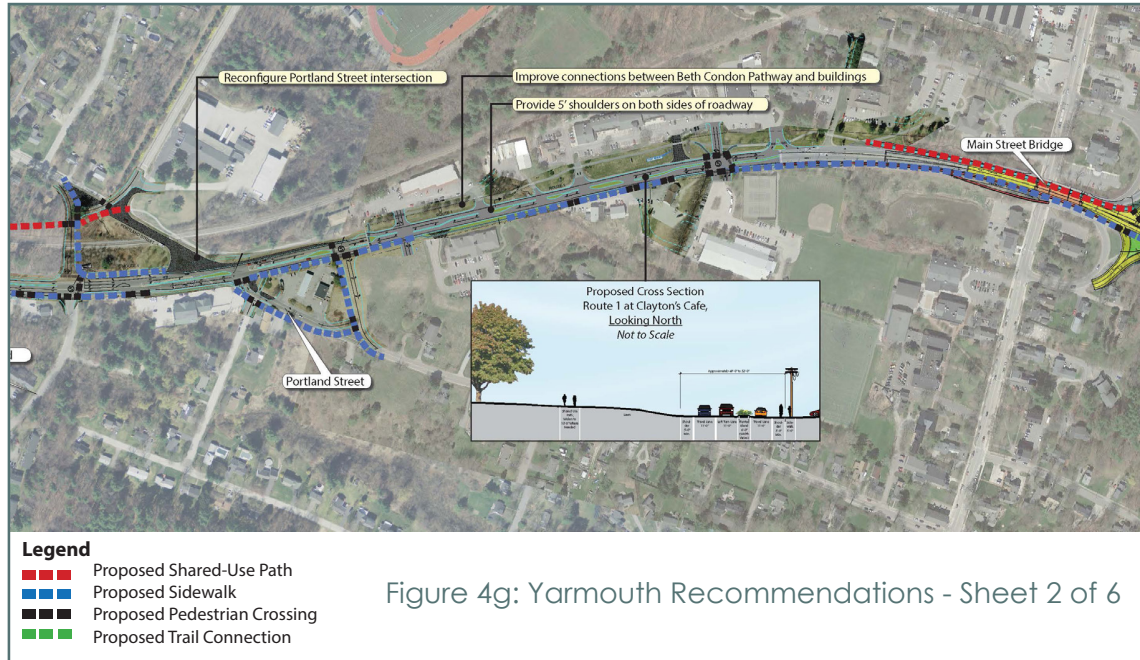
#### Cost

Planning Level Cost Estimate Portland Street to Main Street Recommendations in Yarmouth	
Improvement	Approximate Cost
Portland Street to Main Street	\$ 55,000
Mobilization and MOT (10%)	\$ 5,500
Contingency (20%)	\$ 11,000
<b>Construction Total</b>	<b>\$ 71,500</b>
Design Cost (10%)	\$ 7,150
Construction Engineering (8%)	\$ 5,720
<b>Total Cost</b>	<b>\$ 84,370</b>

### Route 1 Between Main Street and Hannaford Drive/Willow Street

#### Alternatives Development

The Route 1 cross-section is currently four-lanes crossing the Royal River and it is recommended that single northbound and southbound lanes be provided. This change would require possible traffic signalization at the Main Street ramp intersection such that the acceleration and deceleration lanes can be eliminated. As an alternative the high speed lanes could be converted to standard lower speed (assume 35mph) lanes. Figure 4i illustrates a Route 1 condition with a southbound Route 1 deceleration lane length of 145 feet (MaineDOT standard for 35 mph) and an acceleration lane length of 220 feet. This single lane directional cross-section would continue to the north and create a uniform two or three lane cross-section towards Exit 17.



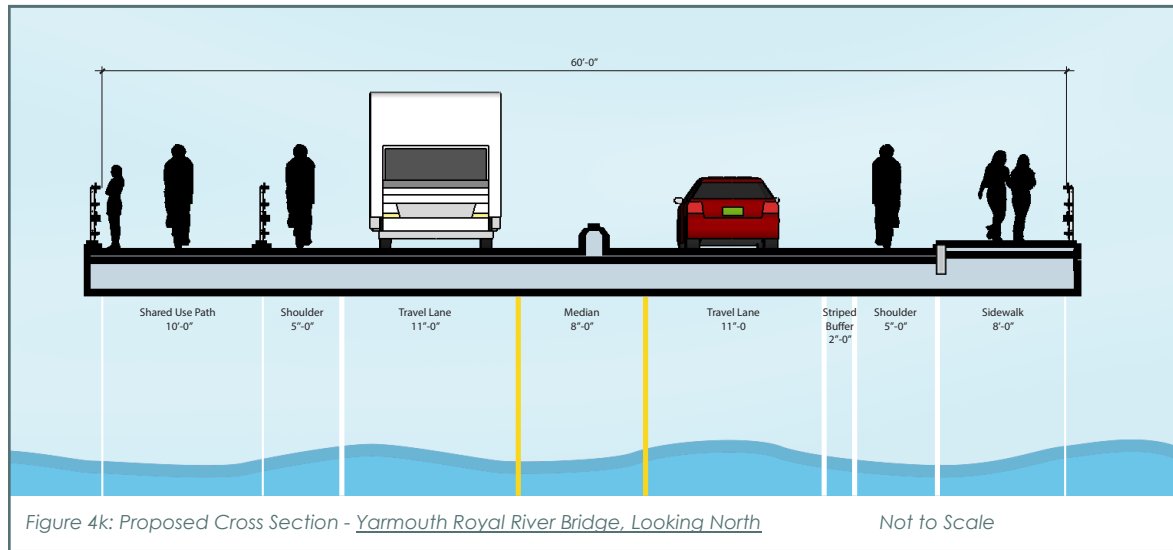
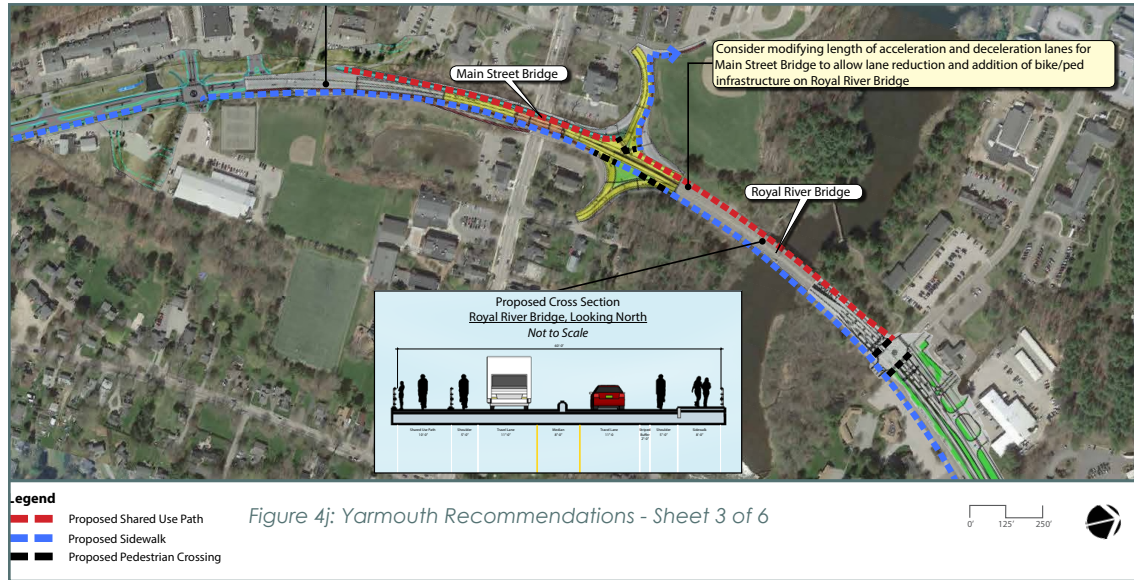
#### Pedestrian and Bicycle

- Construct sidewalk on the east side of Route 1.
- Provide controlled crossings at the NYA traffic signal.



**Recommended Concept**

Figure 4j and 4k illustrate the recommendations.



**Pedestrian and Bicycle**

- Extend Beth Condon Path from Main Street across Royal River Bridge.
- Extend sidewalk on east side of Route 1 from Main Street toward Willow Street.
- Provide bicycle lanes on Route 1.

**Transit**

No transit improvements are recommended.

**Cost**

Planning Level Cost Estimate Main Street to Hannaford Drive Recommendations in Yarmouth	
Improvement	Approximate Cost
Main Street to Hannaford Drive	\$ 180,000
Mobilization and MOT (10%)	\$ 18,000
Contingency (20%)	\$ 36,000
<b>Construction Total</b>	<b>\$ 234,000</b>
Design Cost (10%)	\$ 23,400
Construction Engineering (8%)	\$ 18,720
<b>Total Cost</b>	<b>\$ 276,120</b>

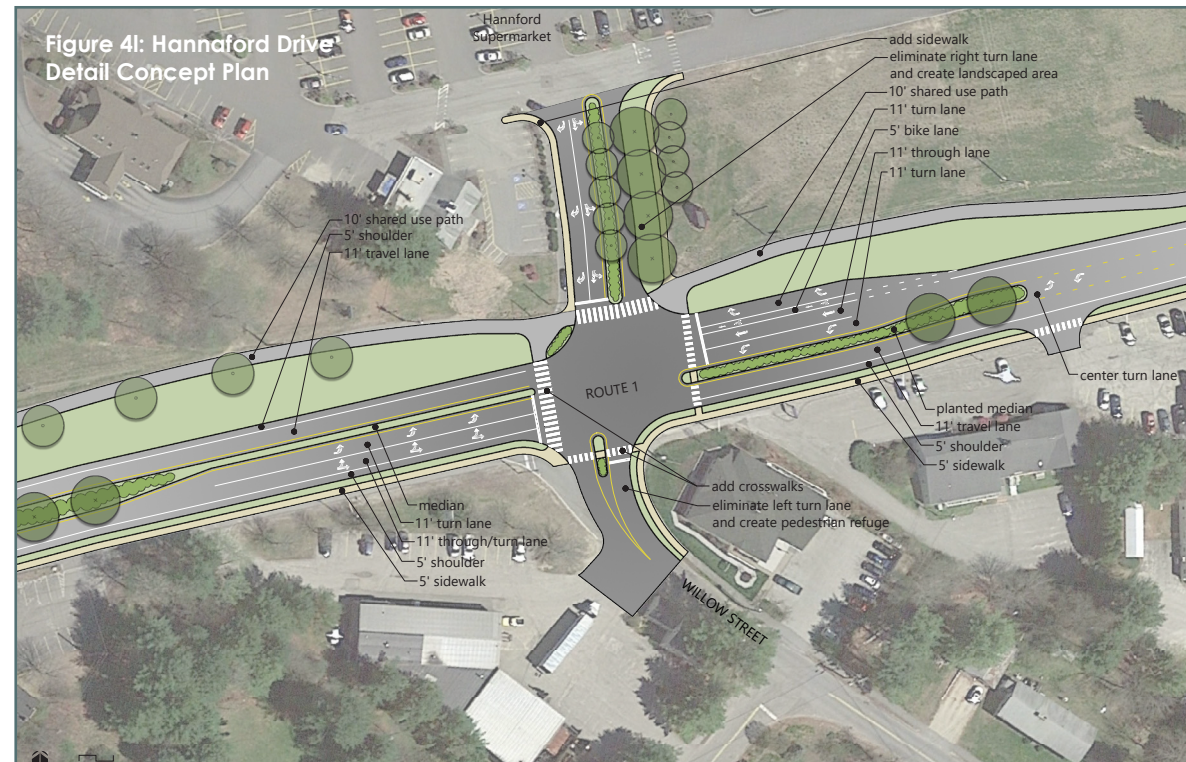
**Hannaford Drive/Willow Street**

**Alternatives Development**

A capacity analysis was conducted at the Hannaford Drive/Willow Street intersection to assess the feasibility of removing traffic lanes and "right sizing" the intersection for all transportation modes. Based upon the analysis the intersection (with reduced capacity) will operate at an acceptable level of service during the critical PM peak hour assuming traffic will grow by 20 percent.

**Recommended Concept**

Figure 4l presents the proposed concept and includes the following details:





- The Route 1 northbound approach will have a dedicated left lane and a shared through/right lane.
- The Route 1 southbound approach will have separate left, through and right lanes.
- The Hannaford Drive approach will have a left/through lane and a right lane.
- Willow Street will consist of a single approach lane. There has been concerns expressed about the loss of one approach lane. Further analysis should be performed in the future regarding the Willow Street approach configuration.

**Pedestrian and Bicycle**

- Provide a sidewalk on the east side of Route 1.
- Crosswalks on all legs of the intersection with a wide crossing for shared bicycle/pedestrian use in conjunction with the East Coast Greenway on Willow Street.
- Sidewalk connections into Hannaford Drive.
- Bicycle lanes on Route 1.

**Transit**

In the southbound direction, consider a bus pullout stop at same location (far side of intersection) with amenities an ADA compliant landing. Improve northbound bus stop for ADA compliant landing and amenities.

**Cost**

Planning Level Cost Estimate Hannaford Drive/Willow Street Recommendations in Yarmouth	
Improvement	Approximate Cost
Hannaford Drive/Willow Street	\$ 275,000
Mobilization and MOT (10%)	\$ 27,500
Contingency (20%)	\$ 55,000
<b>Construction Total</b>	<b>\$ 357,500</b>
Design Cost (10%)	\$ 35,750
Construction Engineering (8%)	\$ 28,600
<b>Total Cost</b>	<b>\$ 421,850</b>

**Route 1 Between Hannaford Drive and East Main Street**

**Alternatives Development**

The improvements seek to enhance pedestrian facilities and provide a less confusing roadway lane configuration.

**Recommended Concept**

Figure 4m on the following page depicts the recommended concept and recommends a three-lane roadway section with a single lane in each direction and a center turn lane.

**Pedestrian and Bicycle**

- Provide a sidewalk on the east side of Route 1 to the East Main Street intersection. The East Main Street bridge does limit the feasibility of fitting a sidewalk. Consider shortening the left-turn lane onto East Main Street to allow for the construction of the sidewalk.
- Provide bicycle lanes on Route 1.

**Transit**

No transit improvements are recommended.

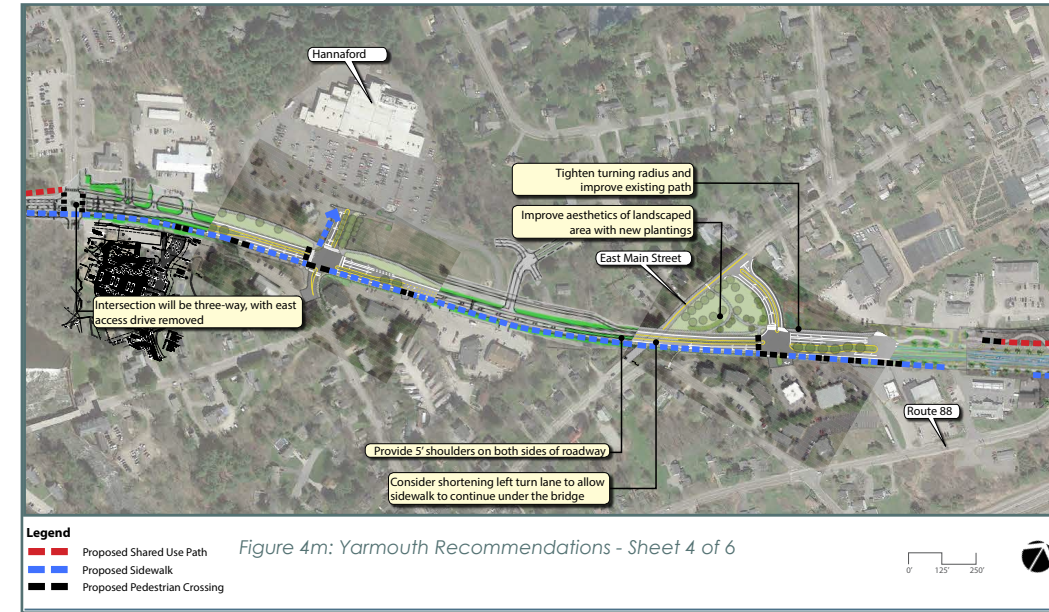


Figure 4m: Yarmouth Recommendations - Sheet 4 of 6

**Cost**

Planning Level Cost Estimate Hannaford Drive to East Main Street Recommendations in Yarmouth	
Improvement	Approximate Cost
Hannaford Drive to East Main Street	\$ 33,000
Mobilization and MOT (10%)	\$ 3,300
Contingency (20%)	\$ 6,600
<b>Construction Total</b>	<b>\$ 42,900</b>
Design Cost (10%)	\$ 4,290
Construction Engineering (8%)	\$ 3,432
<b>Total Cost</b>	<b>\$ 50,622</b>

**East Main Street**

**Alternatives Development**

The focus of improvement considerations at this location was providing a safe pedestrian crossing on Route 1.

**Recommended Concept**

Figure 4n illustrates the improvement concept with a new Route 1 crossing, geometric modifications, and landscape improvements.

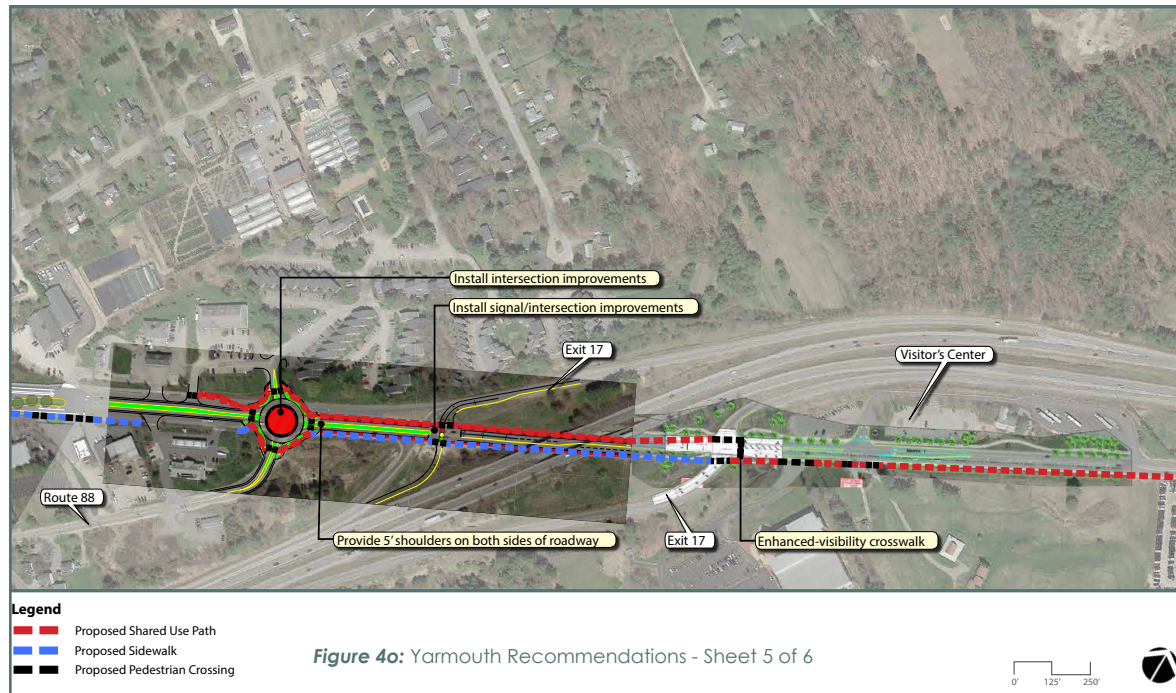
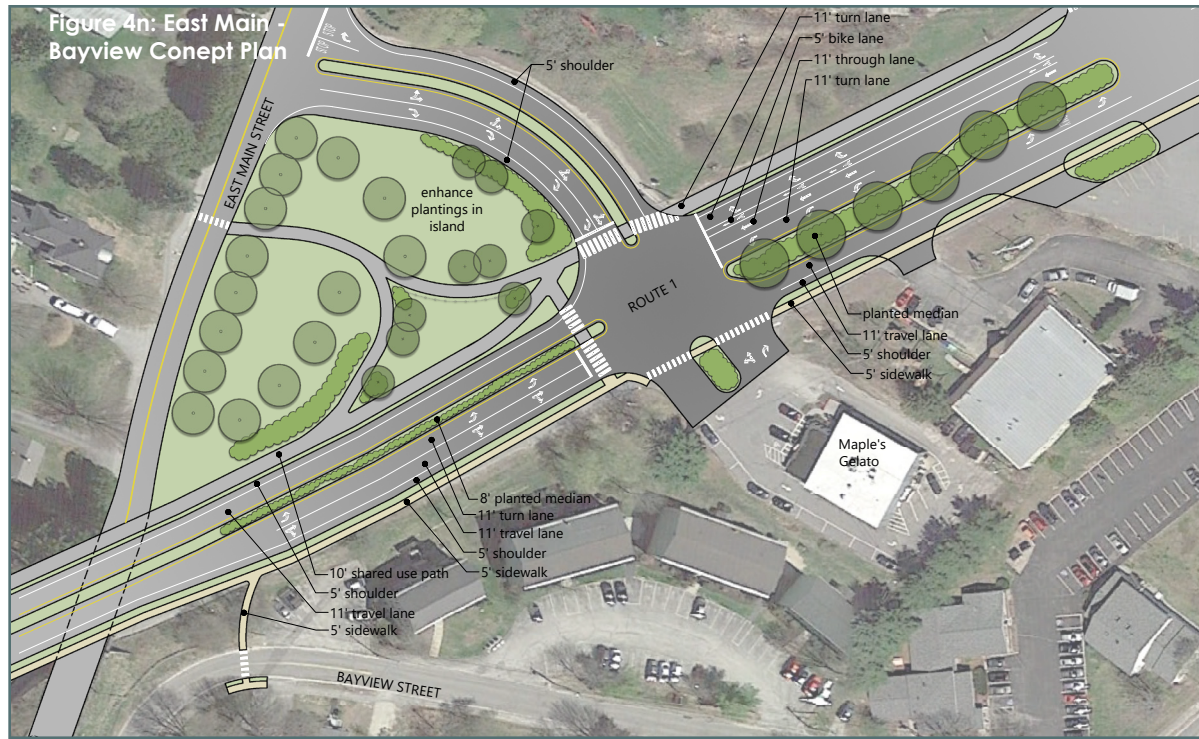
**Pedestrian and Bicycle**

A new crosswalk is to be added on Route 1 on the southerly leg of the intersections. Signal modifications will be required. To encourage slower speeds, the southbound right-turn radius should be tightened. A sidewalk should be provided on the east side of Route 1 and will connect to Bayview Street. Bicycle lanes on Route 1 shall be provided.

**Transit**

This location is not a high priority for a bus stop given anticipated low ridership. This location should be monitored for future consideration.





**Cost**

Planning Level Cost Estimate East Main Street Recommendations in Yarmouth	
Improvement	Approximate Cost
East Main Street	\$ 145,000
Mobilization and MOT (10%)	\$ 14,500
Contingency (20%)	\$ 29,000
<b>Construction Total</b>	<b>\$ 188,500</b>
Design Cost (10%)	\$ 18,850
Construction Engineering (8%)	\$ 15,080
<b>Total Cost</b>	<b>\$ 222,430</b>

**Cost**

Planning Level Cost Estimate East Main Street to Route 88 Recommendations in Yarmouth	
Improvement	Approximate Cost
East Main Street to Route 88	\$ 15,000
Mobilization and MOT (10%)	\$ 1,500
Contingency (20%)	\$ 3,000
<b>Construction Total</b>	<b>\$ 19,500</b>
Design Cost (10%)	\$ 1,950
Construction Engineering (8%)	\$ 1,560
<b>Total Cost</b>	<b>\$ 23,010</b>

**Route 1 Between East Main Street and Route 88**

**Alternatives Development**

This section primarily seeks to improve pedestrian conditions with added sidewalks.

**Recommended Concept**

Figure 4o illustrate the recommendations which consists of adding a sidewalk on the east side and extending sidewalk/pathway in front of VIP.

**Pedestrian and Bicycle**

- Construct sidewalk on the east side of Route 1.
- Extend pathway in front of VIP
- Bicycle lanes on Route 1

**Transit**

No transit improvements are recommended.

**Route 88/I-295 Southbound Ramps**

**Alternatives Development**

The focus of improvement considerations is related to improving mobility and safety at the Route 88 and Southbound ramps intersections and provide a safe pedestrian crossing of Route 1 south of I-295.

**Route 88:**

A single lane roundabout is recommended at this intersection. A roundabout would help traffic move safely and efficiently through the area. Many of the movements that exist under current conditions are difficult and contain some safety concerns including the southbound left from Route 1 onto Route 88, the eastbound through movement from the VIP drive to Route 88, and the eastbound left turn movements from the VIP drive onto Route 1 North. Movements from Route 88 and VIP operate with failing levels of service. A roundabout would reduce the number of conflict points and the number and severity of crashes. The roundabout would slow Route 1 vehicle speeds but would cause some delay for Route 1 vehicles. Based on a model of growth assuming 1% per year, acceptable conditions



would exist for approximately 10 years during the PM Peak Hour. Route 1 southbound delays are estimated to be approximately 35 seconds (just over the level of service “E” threshold according to the HCM 6 methodology). Assuming 20 years of growth, the delay for Route 1 southbound motorists would increase to approximately 70 seconds per vehicle. At some time in the future, there may be a need to add a second hybrid lane on Route 1 southbound. In the 10-year forecast, the roundabout is estimated to operate at an overall level of service “D” with a delay of approximately 30 seconds and shows slightly failing delay in the 20-year condition with approximately 50 seconds of delay per vehicle. The Route 1 northbound through movement is heavy during the AM Peak Hour, yielding a failing level of service (Delay of 60 seconds per vehicle) during the 20 year future peak. Overall, in the 20 year condition, the AM Peak Hour would operate at a level of service “E” with a delay of approximately 45 seconds and is a direct result of heavy northbound volumes conflicting with southbound Route 1 left turns onto Route 88. With the introduction of the second southbound lane, the overall level of service 20-year peak hour condition would be “D”. A roundabout was considered at this location during prior planning studies and received both local and state support, although was eliminated from consideration due to high cost. Lack of feasible alternatives (traffic signal warrants are not met) has the Town reconsidering the roundabout recommendation for long-term improvements.

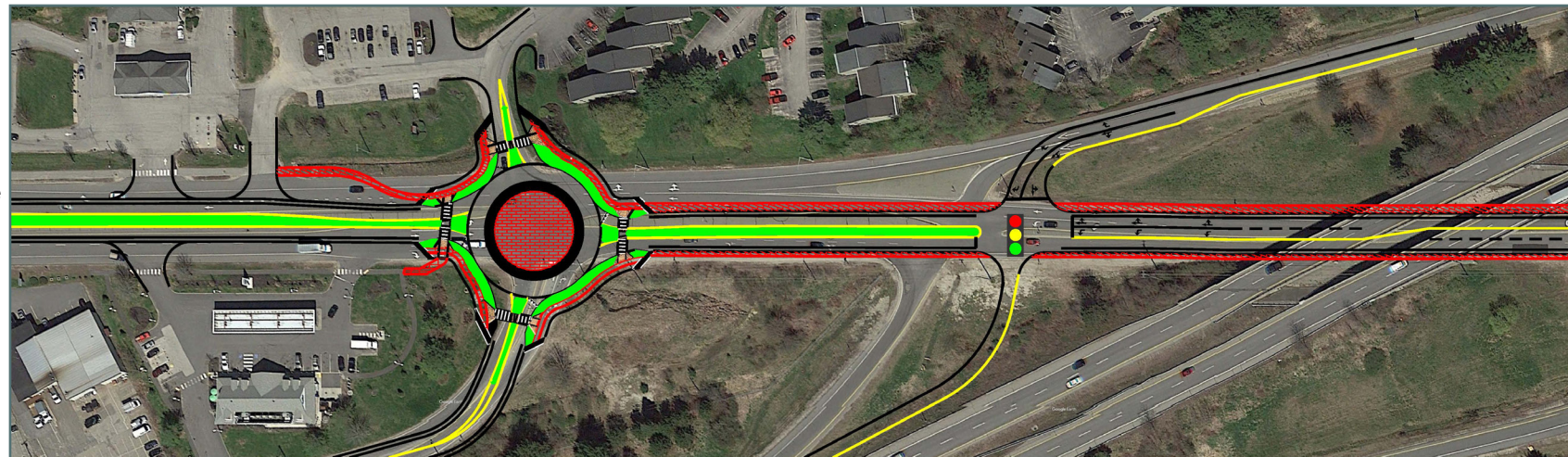
**I-295 Southbound Ramps**

At the intersection of Route 1 and the I-295 southbound ramps, adjusting the geometry and intersection location along with signaling the intersection is recommended.

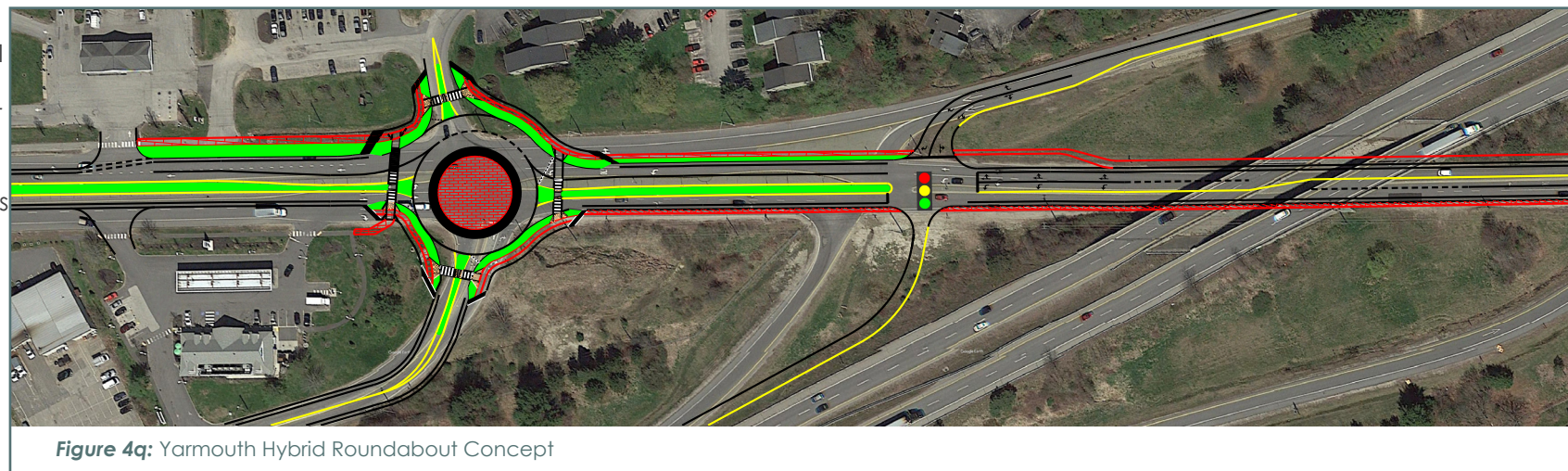
To tie in with the roundabout recommendations at Route 88, it is recommended that the intersection be shifted northerly to allow for increased queue space entering the roundabout. It is also recommended that the southbound off-ramp geometry be tightened up (this is currently recommended in conjunction with the PACTS funded extension of the Beth Condon Path). Pedestrian improvements should continue through this section with a path on the northerly side and a sidewalk on the southerly side. Bicycle lanes are to continue through the intersection. The subject intersection meets peak hour signal warrant criteria (although a more comprehensive warrant analysis should be performed) and with proper coordination of a signal at the northbound ramps, it is our professional opinion this condition would allow movements to flow more efficiently through this corridor without significant delay or impacts. The intersection would operate at an overall level of service “C” during the PM Peak hour with no failing movements. Queueing is not anticipated to exceed available space.

**Recommended Concept**

**Figure 4p** illustrates the recommended improvement concept and includes the construction of a roundabout at the Route 88 intersection and implementing geometric modifications and installation of a traffic signal at the southbound ramps intersection. **Figure 4q** illustrates a hybrid roundabout concept for long-term future conditions that includes a second lane on



**Figure 4p:** Yarmouth Roundabout Concept



**Figure 4q:** Yarmouth Hybrid Roundabout Concept

southbound Route 1. A traffic signal is programmed for the northbound ramps intersection and no additional recommendations are proposed.

**Pedestrian and Bicycle**

- Extend the Beth Condon Path along west side of Route 1 under I-295 and provide a crossing at the northbound ramps intersections and construct a sidewalk to the Visitor Center. PACTS has approved funding for the preparation of a Preliminary Design Report for this section of the Path.
- Provide a pedestrian crossing of Route 1 at proposed Route 88 roundabout.
- Provide bicycle lanes on Route 1.

**Transit**

No transit improvements are recommended.



**Cost**

Planning Level Cost Estimate Route 88/Exit 17 Recommendations in Yarmouth	
Improvement	Approximate Cost
Route 88/Exit 17	\$1,300,000
Mobilization and MOT (10%)	\$ 130,000
Contingency (20%)	\$ 260,000
<b>Construction Total</b>	<b>\$1,690,000</b>
Design Cost (10%)	\$ 169,000
Construction Engineering (8%)	\$ 135,200
<b>Total Cost</b>	<b>\$1,994,200</b>

**Route 1 between Exit 17 and Freeport**

**Alternatives Development**

The focus of improvements is to extend the Beth Condon Path along the east side of Route 1 (crossing at the proposed Exit 17 Northbound Ramps traffic signal) to Freeport.

**Recommended Concept**

Figures 4r and 4s illustrate the improvement with a new shared use path located on the east side of Route 1 to the Cousins River bridge. The bridge, which is slated for replacement, would consist of two travel lanes, two shoulders, and a shared use path (see Figure 4s).

**Pedestrian and Bicycle**

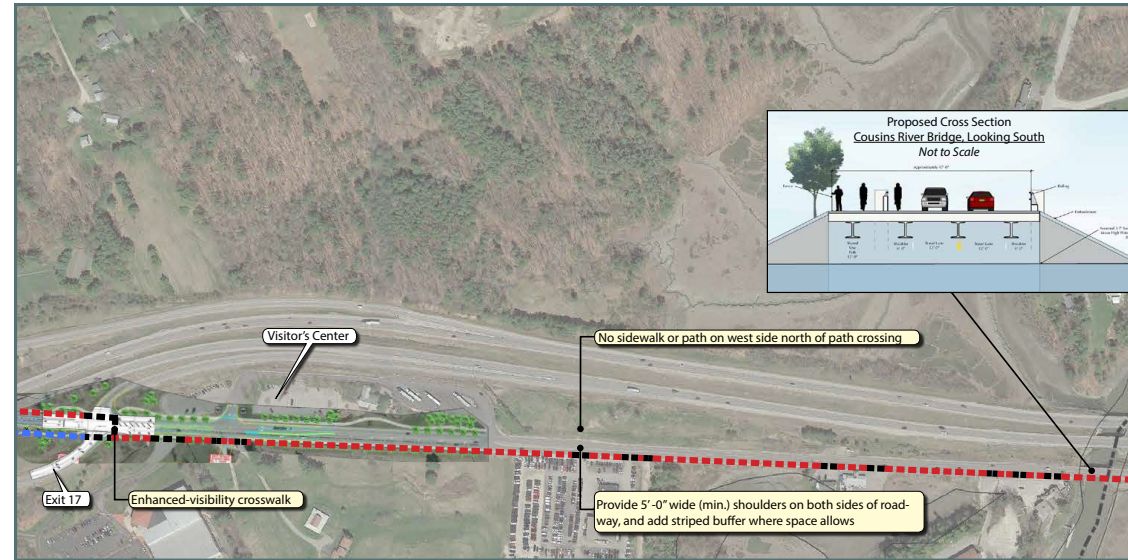
As noted previously the plan is to provide a high level shared use path for bicycle and pedestrian use, with a ultimate destination of the YMCA.

**Transit**

To improve route time efficiency, the bus stop should be relocated to Route 1 so buses do not have to circulate through the Visitor's Center. METRO is eliminating the current stop until a Route 1 crossing is provided. A controlled pedestrian crossing is being proposed in conjunction with future traffic signal at the I-295 Northbound ramp intersection.

**Cost**

Planning Level Cost Estimate Exit 17 to Freeport Recommendations in Yarmouth	
Improvement	Approximate Cost
Exit 17 to Freeport	\$ 380,000
Mobilization and MOT (10%)	\$ 38,000
Contingency (20%)	\$ 76,000
<b>Construction Total</b>	<b>\$ 494,000</b>
Design Cost (10%)	\$ 49,400
Construction Engineering (8%)	\$ 39,520
<b>Total Cost</b>	<b>\$ 582,920</b>



**Legend**  
 - Proposed Shared Use Path  
 - Proposed Sidewalk  
 - Proposed Pedestrian Crossing

Figure 4r: Yarmouth Recommendations - Sheet 6 of 6

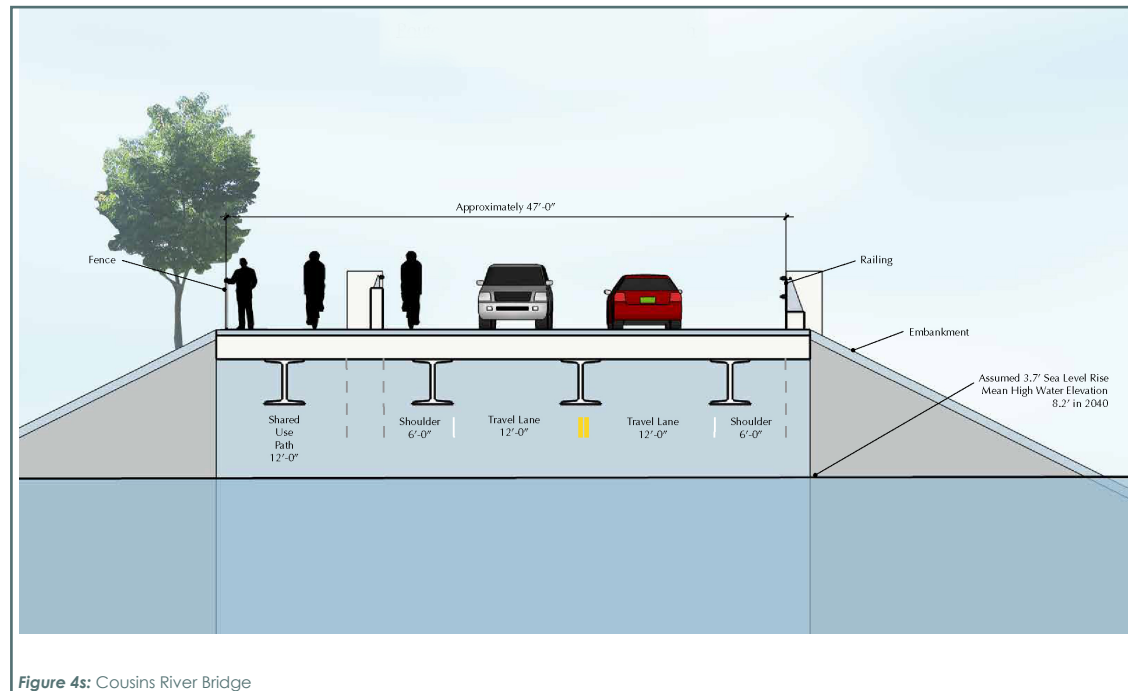
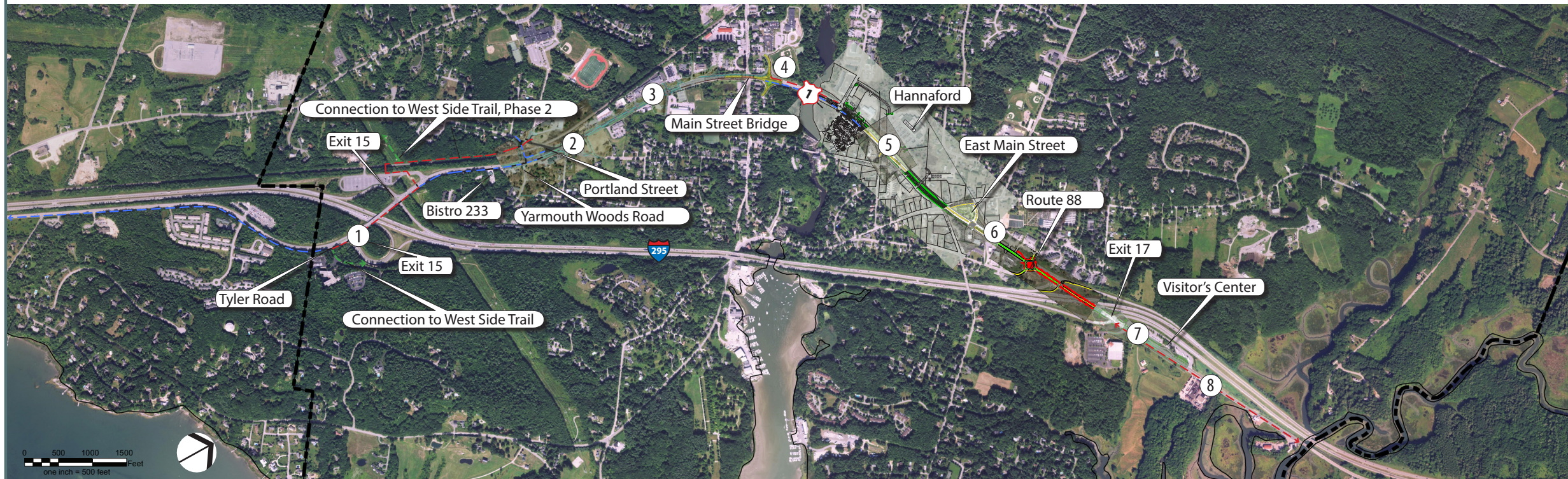


Figure 4s: Cousins River Bridge



Figure 4t: Yarmouth - Summary of Recommendations - February 7th, 2018



1 EXIT 17 INTERCHANGE	2 PORTLAND STREET INTERSECTION	3 COMMERCIAL WEST	4 MAIN STREET EXIT	5 HANNAFORD INTERSECTION	6 EAST MAIN STREET INTERSECTION	7 NORTHERN GATEWAY	8 RURAL COMMERCIAL TRANSITION
Cumberland Line to Yarmouth Woods Road	Portland Street	Portland Street to the Main Street Bridge	Main Street Intersection	Hannaford and Willow Street Intersection	East Main Street Ramp Intersection	East Main Street bridge to MDOT Visitor Center	MDOT Visitor Center to Freeport Line
<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Highway-like character</li> <li>Shoulders and bike lanes between right turn and through lanes</li> <li>Bridge over I-295 is narrow</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Plan developed in 2011 to bring Portland Street onto Route 1 opposite Yarmouth Woods was</li> <li>Plan recommends sidewalk on East side of Rte 1 between Subway and Mercy</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Plans developed in 2011 for a sidewalk on east side</li> <li>2016 plans for bridge include a 10' shared use path on the west side and a 5' sidewalk on the east side</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Plan developed in 2015</li> <li>5'-0" (+/-) shoulders included on ramps on York and School Streets</li> <li>Sidewalk on School Street would connect to shared use path on bridge with crosswalks</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Signal plan developed in 2009</li> <li>Pedestrians must cross many lanes on Route 1 and at Hannaford driveway</li> <li>East Coast Greenway (ECG) turns from Route 1 onto Willow Street</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Shared use path on west side completed in 2015</li> <li>Plan developed in 2004 to reconfigure ramp intersection and provide sidewalk connection to Bayview Street</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>New Exit 17 ramp plan developed in 2016</li> <li>Plan developed in 2004 to provide shared use path on West side and sidewalk on East side</li> <li>Bridge constrains road width</li> </ul>	<p><b>Segment Status</b></p> <ul style="list-style-type: none"> <li>Two-lane highway with wide shoulders</li> <li>2015 PACTS plan for a new bridge over the Cousins River included a 12' shared use path on the West side and a 6' shoulder on both sides</li> </ul>
<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Enhance striping and pave gravel shoulder at interchange</li> <li>Short term: Construct sidewalk on East side between Cumberland Line and Tyler Rd</li> <li>Long-term: Extend shared use path to Portland Street, when I-295 bridge is replaced</li> <li>Connect to the West Side Trail</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Implement the 2011 plan</li> <li>Extend the sidewalk to Bistro 233 and the Exit 15 park and ride</li> <li>Add sidewalks on new side streets</li> <li>Provide path connection to the Trail and park and ride</li> <li>Consider transit stop at Portland Street</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Implement the 2011 and 2016 plans</li> <li>Long term: Path and sidewalk on Main Street Bridge to extend across Royal River Bridge</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Implement the MaineDOT bridge replacement plan</li> <li>Review acceleration and deceleration lanes on Route 1 to see whether a lane diet could be possible to add bike-ped infrastructure</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Reduce lanes on Route 1 and Hannaford entrance</li> <li>Provide pedestrian crossings to all four corners, and bike crossing for ECG</li> <li>Provide sidewalk on East side of Rte 1 South to Royal River Bridge &amp; North to E. Main St. and Bayview</li> <li>Provide path on west side to Royal River Bridge</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Provide sidewalk on East side with crossing and pedestrian refuge island on the South side of the East Main Street</li> <li>Enhance landscaping at jughandle</li> <li>Provide pedestrian connection to Bayview</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Starting at E. Main, construct a path on West side and sidewalk on East side, to Northbound ramps proposed traffic signal</li> <li>From this point, path will continue on East side and no sidewalk will be provided</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Construct shared use path on East side, with long term goal of reaching the Freeport YMCA</li> <li>When bridge is reconstructed, path shall be on the East side</li> <li>Provide buffered shoulders where space allows</li> </ul>



# 5.0 FREEPORT

## 5.1 OTHER STUDIES AND PROJECTS

Several studies and projects were reviewed during the development of this Plan and included:

- Freeport Maine Active Living Plan
- MaineDOT Exit 20 Diverging Diamond Interchange Summary of Forecast Traffic Operations
- Maine Beer Co. Expansion Plans
- Comprehensive Plan, 2011

## 5.2 DEFINE EXISTING AND PLANNED CONTEXT

### Existing Transportation Context

Figure 5a depicts existing transportation information for Route 1 in Freeport. Some noteworthy

details include:

- Average Annual Daily volumes are the highest north of Desert Road (16,540 vehicles) and lowest near the Yarmouth Town line (8,770 vehicles).
- There are no High Crash Locations in the study area.
- The speed limit is primarily 45 MPH with the exception of 0.92 miles north of Old County Road where it is 35 MPH.
- The East Coast Greenway enters Freeport from Yarmouth and turns onto Old Freeport Road.

### Existing Multimodal Context

Figure 5b on the next page provides information on existing facilities and notes where sidewalks are not present (Route 1 south of Pine Street as an example), crosswalks, general bicycle accommodations and transit stop locations.

## 5.3 IDENTIFY ISSUES AND OPPORTUNITIES

### Transportation Street Issues and Opportunities

Issue: Improve Desert Road, Route 1 and I-295 traffic conditions.

Opportunity: Reconfigure interchange.

Issue: South Freeport Road traffic movements difficult.

Opportunity: Considered traffic control changes.

### Pedestrian/Bicycle Issues and Opportunities

Issue: Pedestrian connectivity on Route 1 near Desert Road.

Opportunity: Construct sidewalks.

Issue: Pedestrian crossings between the Park and Ride Lot and Maine Beer Company.

Opportunity: Install a crosswalk.

Issue: Bicycle safety on Route 1.

Opportunity: Consider painted buffer bicycle lanes.

Issue: Bicycle safety at South Freeport Road.

Opportunity: Consider bicycle infrastructure improvements.

Issue: Beth Condon Path Extension location from Yarmouth to YMCA and beyond.

Opportunity: Where should it be located and how far north should it extend.

### Transit Issues and Opportunities

Issue: Transit stop at the Park and Ride Lot/Maine Beer Company.

Opportunity: Install transit stop and crosswalk on Route 1.

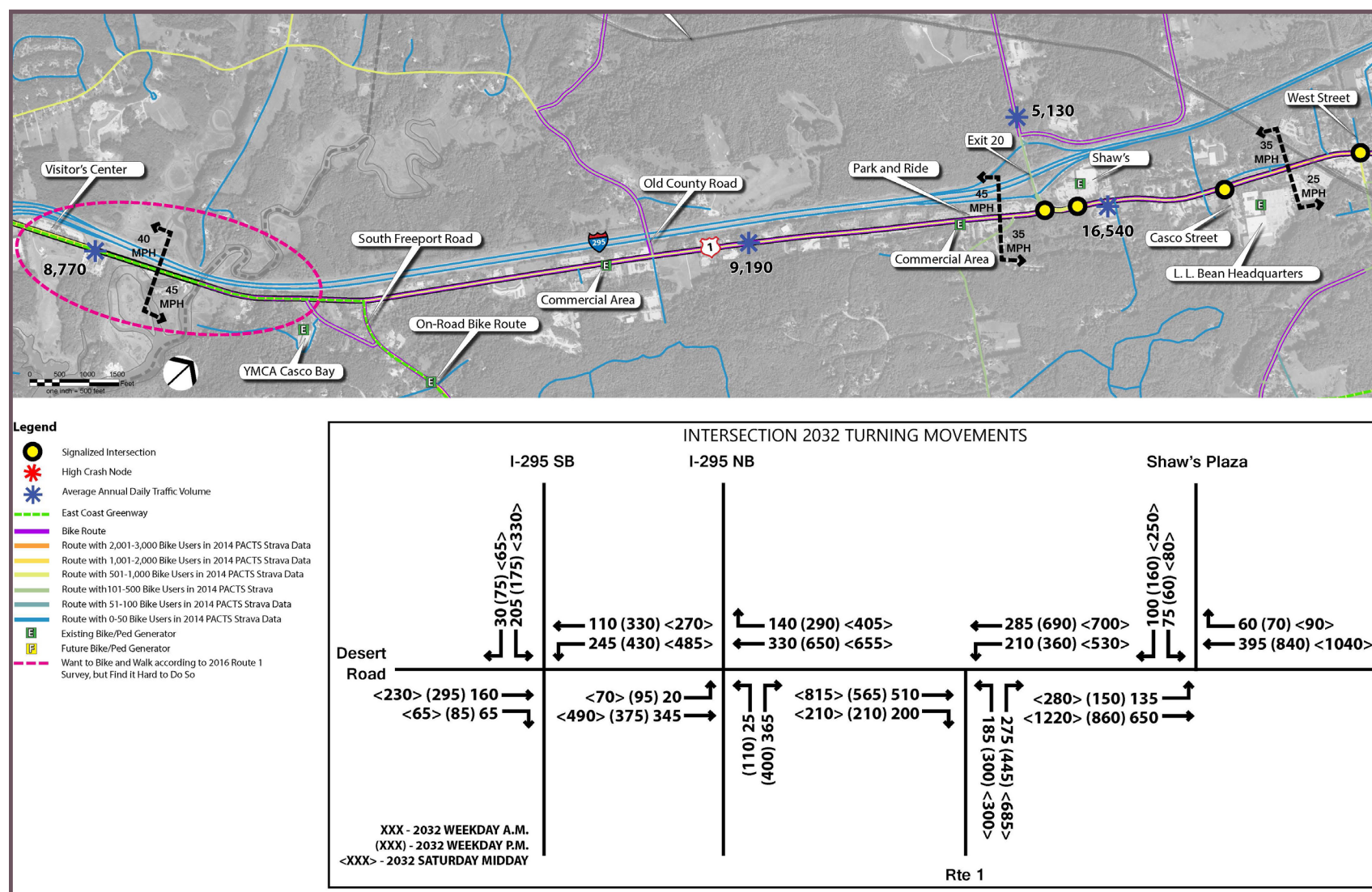


Figure 5a: Freeport Draft Transportation Context



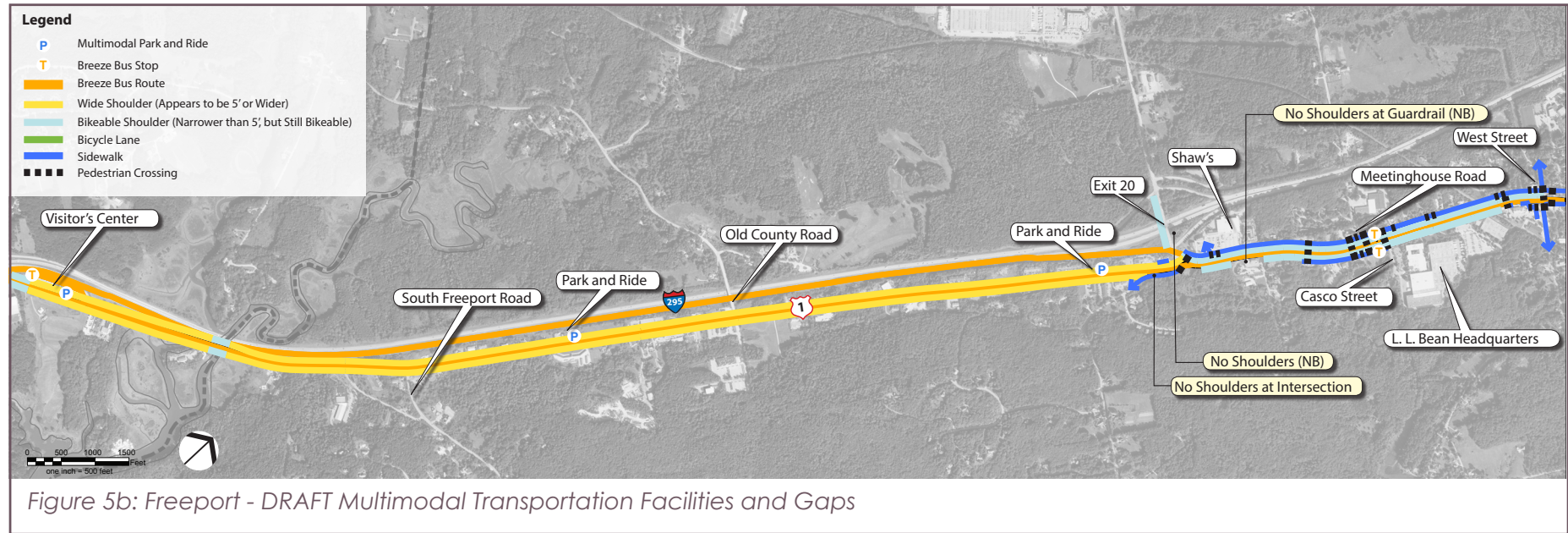


Figure 5b: Freeport - DRAFT Multimodal Transportation Facilities and Gaps

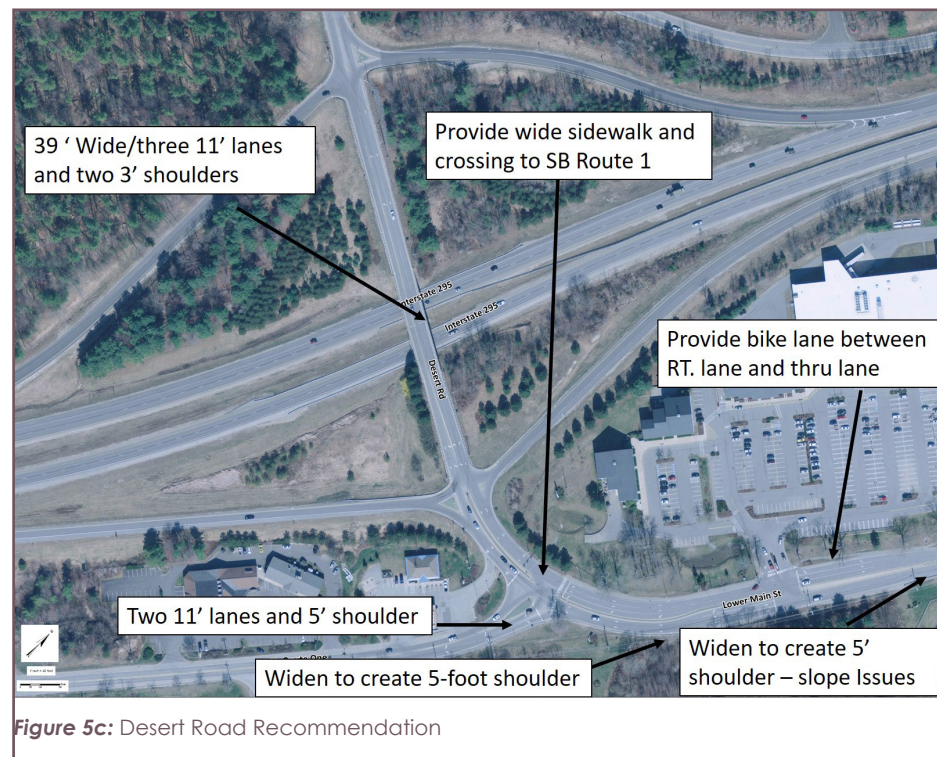


Figure 5c: Desert Road Recommendation

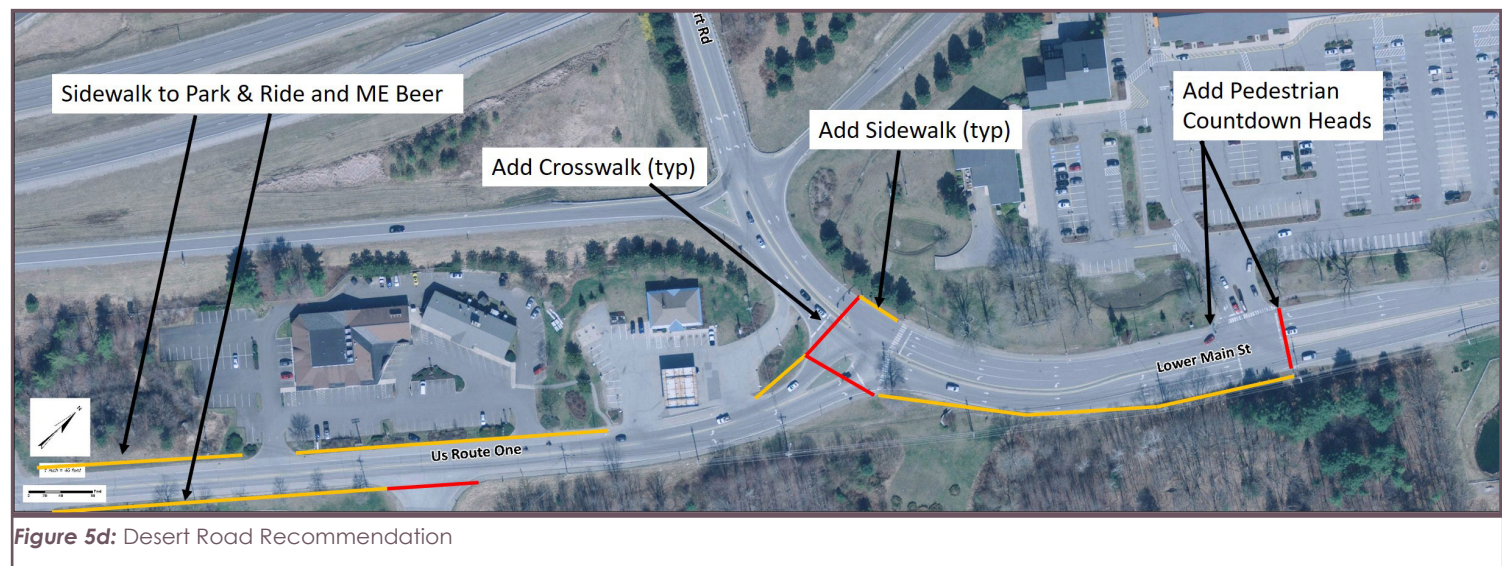


Figure 5d: Desert Road Recommendation

Short/Mid-term recommendations included the following (See **Figure 5c and 5d**):

- Re-stripe Desert Road across I-295 to three 11-foot travel lanes and two 3-foot shoulders.
- Re-stripe the Route 1 northbound approach to Desert Road to two 11-foot approach lanes and a 5-foot shoulder.
- Provide crosswalks on all approaches at Route 1/Desert Road intersection.
- Construct a sidewalk on the west side of Route 1 between Desert Road and Park & Ride Lot.
- Construct a sidewalk on the east side of Route 1 between Pine Street and the Maine Beer Company crosswalk.
- Where possible, shoulders should be narrowed to allow for construction of sidewalks with the intent of minimizing disturbance and calming traffic.
- 11-foot travel lanes are preferred.

## 5.4 ALTERNATIVE DEVELOPMENT AND RECOMMENDATIONS

### Desert Road Focus Area

#### Alternative Development

Alternatives investigated both short-term and long-term improvements that improved bicycle and pedestrian improvements. Short/Mid-term improvements investigated low-cost changes, while long-term improvements focused on interchange modifications and major roadway changes.



- Adjust the curb on the south side of Route 1 from Desert Road to Freerport Crossing. Widening the shoulder at the guard rail/culvert should be a long-term project.
- Provide a bicycle lane on Route 1 southbound between the through lane and right lane into Freerport Crossing.
- Provide continuous bicycle lanes northbound Route 1.

Long-term recommendations include the following (see **Figure 5e**):

- Eliminate the northbound I-295 off-ramp and provide ramp to Route 1 north of Park & Ride Lot. The new intersection will require traffic signalization.
- Reconfigure the Route 1/Desert Road intersection so that Route 1 is the major street and Desert Road in the minor leg of the intersection.
- Provide two 12-foot travel lanes and 7.5-foot shoulders should be provided on the Desert Road I-295 bridge with consideration of buffered bicycle lanes or a sidewalk on one side.
- Provide bicycle lanes on Route 1 throughout area. The proposed configuration would allow for through bicycle lanes on Route 1, without a need for turning.
- Reconfigure the I-295 southbound off-ramp to a loop ramp.

A SimTraffic model was developed and used to evaluate traffic conditions in 2032 during the weekday AM and PM peak hours and midday Saturday peak hour. Results indicate acceptable levels of service will be provided.

**Pedestrian and Bicycle**

Improvement details are noted previously and generally include adding sidewalks and bicycle lanes.

**Transit**

A future transit stop at Shaw's should be considered.

**Cost**

Planning Level Cost Estimate Desert Road Recommendations in Freerport	
Improvement	Approximate Cost
Desert Road Area	\$2,657,000
Mobilization and MOT (10%)	\$ 265,700
Contingency (20%)	\$ 531,400
<b>Construction Total</b>	<b>\$3,454,100</b>
Design Cost (10%)	\$ 345,410
Construction Engineering (8%)	\$ 276,328
<b>Total Cost</b>	<b>\$4,075,838</b>

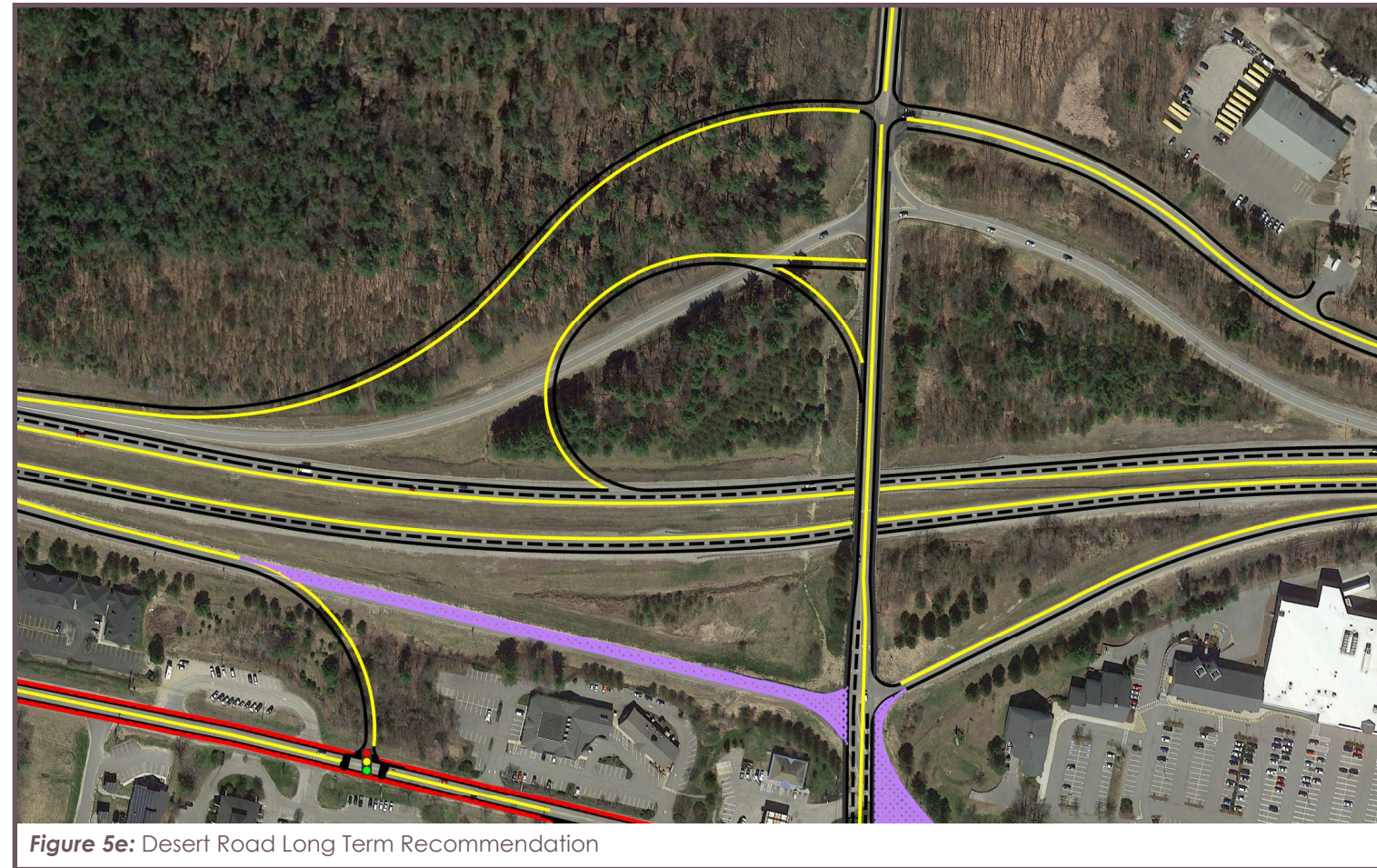


Figure 5e: Desert Road Long Term Recommendation



### Route 1 South

#### Alternatives Development

The focus of improvements was extending the Beth Condon Path in Yarmouth to the YMCA and improving overall bicycle conditions and enhancing overall transportation conditions at the South Freeport Road intersection.

#### Recommended Concept

Figures 5f and 5g illustrate the improvements with a new shared use path located on the east side of Route 1 from the Cousins River bridge northerly to the YMCA. The bridge, which is slated for replacement, is recommended to consist of two travel lanes, two shoulders, and a shared use path (see Figure 5h). Additionally, the following recommendations are suggested:

- Upgrade the flashing beacon at the Route 1/South Freeport Road intersection.
- Close the driveway on Route 1 just north of South Freeport Road.

#### Pedestrian and Bicycle

- Provide painted buffered shoulders (or 6 inch wide white line) along Route 1. (see Figure 5i)
- Adjust pavement markings for equal width travel lanes and shoulders.
- Provide a bicycle lane on the South Freeport Road approach to Route 1.
- Consider designating Old South Freeport Road as the northbound route to South Freeport (this includes the East Coast Greenway). This would eliminate conflicts with heavy right-turn vehicle volume to South Freeport Road.
- Extend the Beth Condon Path in Yarmouth to Old County Road. The Path may be similar to the Beth Condon Path, or consist of a protected facility using existing pavement space separated with bollards.
- Implement access management improvements including closing driveways and narrowing wide driveways.

#### Transit

A future transit stop should be considered at Old County Road as area employment increases.

#### Cost

Planning Level Cost Estimate Route 1 South Recommendations in Freeport	
Improvement	Approximate Cost
Route 1 South	\$387,000
Mobilization and MOT (10%)	\$ 38,700
Contingency (20%)	\$ 77,400
<b>Construction Total</b>	<b>\$503,100</b>
Design Cost (10%)	\$ 50,310
Construction Engineering (8%)	\$ 40,248
<b>Total Cost</b>	<b>\$593,658</b>

### Route 1 North

#### Alternatives Development

The focus of recommendations is improving pedestrian and bicycle facilities and considering adding a transit stop in the area.

#### Recommended Concept

Figure 5j illustrates a concept plan with a crosswalk between the Park & Ride Lot and Maine Beer Co.

#### Pedestrian and Bicycle

- Provide painted buffered shoulders (or 6 inch wide white line) along Route 1
- Adjust pavement markings for equal width travel lanes and shoulders.
- Provide crosswalk at Park & Ride Lot. The following is recommended with this crosswalk:
  - Install crosswalk markings according to MaineDOT design standards. Block design is recommended.
  - Rectangular Rapid Flashing Beacons (RRFB) shall be installed at the crosswalk.
  - The "Passing" zone pavement marking in the vicinity of the crosswalk shall be eliminated. A double yellow center line shall be installed.
  - The regulatory speed limit adjustment to 35 MPH is required and has been implemented.
  - The crosswalk shall meet ADA standards and include detectable warning panels.
  - W-12 pedestrians crossing advance warning signs shall be installed.
  - Crosswalk location shall meet METRO requirements for preferred bus stopping location. The specific location of the crosswalk was painted in the field with METRO and MaineDOT guidance.
  - A overhead Cobra Head light fixture is located at the entrance to Maine Beer Company. The Town is currently upgrading fixtures and as part of this effort will assess enhancements to lighting in the project area for safe nighttime conditions.

- Add sidewalks and crosswalks as recommended in the Desert Road Focus Area.
- Implement bicycle facility recommendations in the Desert Road Focus Area.
- Implement access management improvements including closing driveways and narrowing wide driveways.

#### Transit

In conjunction with the crosswalk at the Park & Ride Lot, a transit stop could be added in the southbound direction. The stop would utilize the shoulder and exit driveway area, and would be located on the far side of the crosswalk. Transit amenities should be included.

#### Cost

Planning Level Cost Estimate Route 1 North Recommendations in Freeport	
Improvement	Approximate Cost
Route 1 North	\$159,000
Mobilization and MOT (10%)	\$ 15,900
Contingency (20%)	\$ 31,800
<b>Construction Total</b>	<b>\$206,700</b>
Design Cost (10%)	\$ 20,670
Construction Engineering (8%)	\$ 16,536
<b>Total Cost</b>	<b>\$243,906</b>

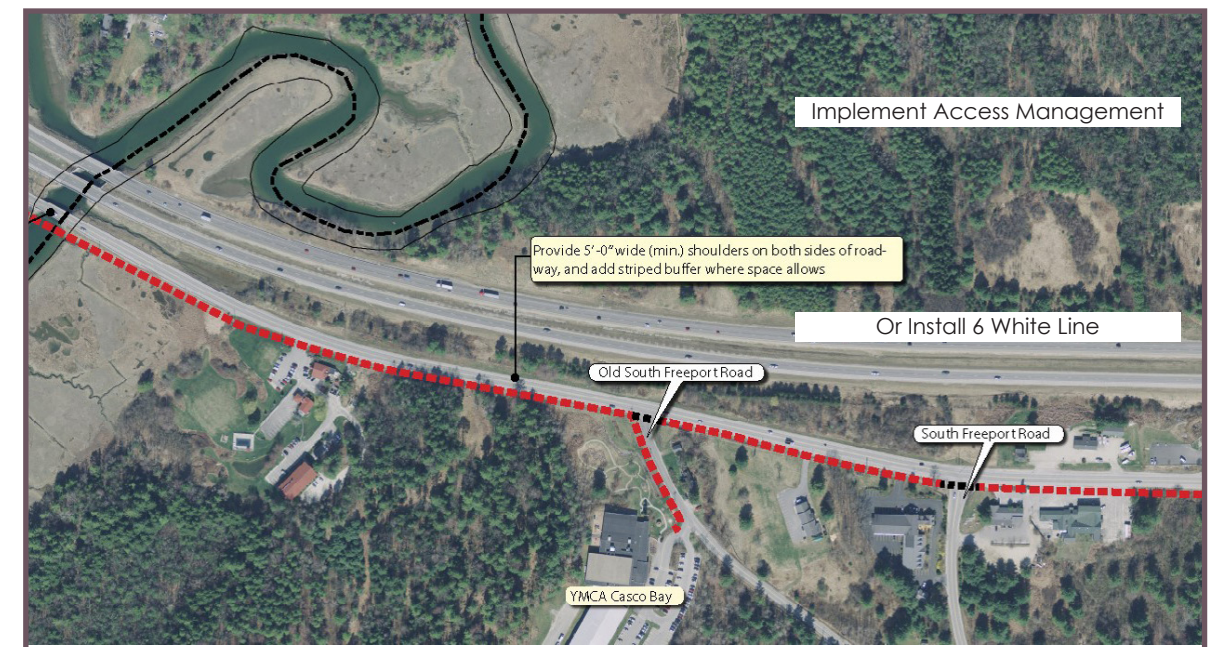
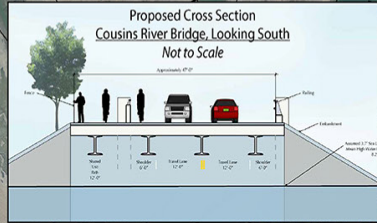


Figure 5f: Freeport South Draft Recommendation With Crosswalk





- Legend**
- Proposed Shared Use Path
  - Proposed Sidewalk
  - Proposed Pedestrian Crossing

Figure 5g: Freeport South Area DRAFT Recommendations with crosswalk.

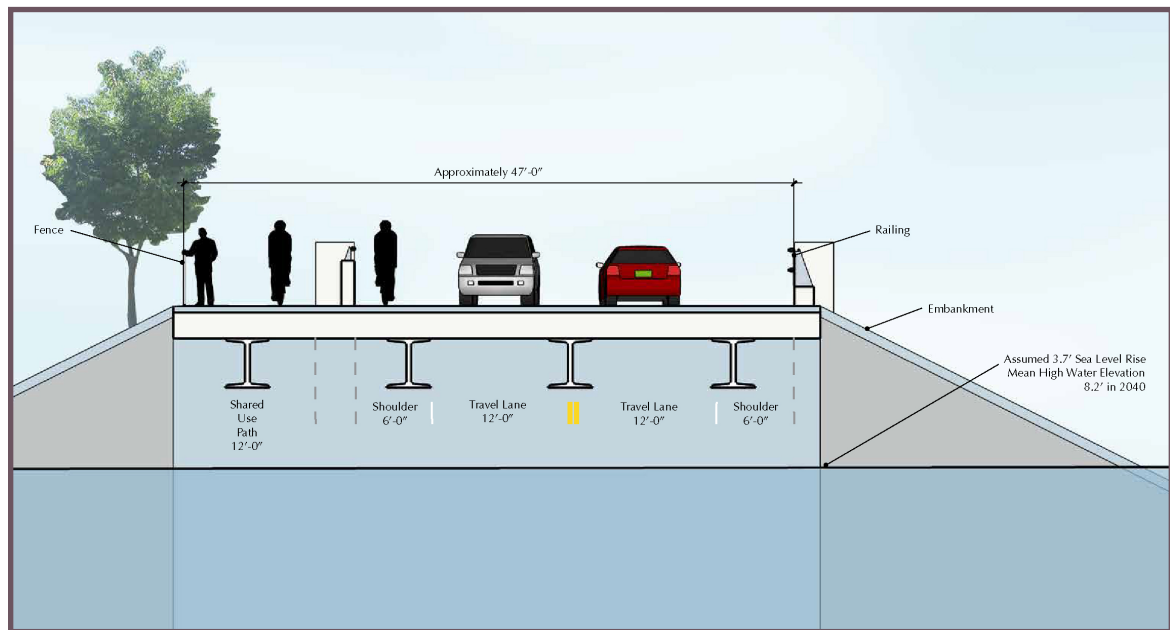


Figure 5h: Route 1 at Cousins River, Looking South - Not to Scale

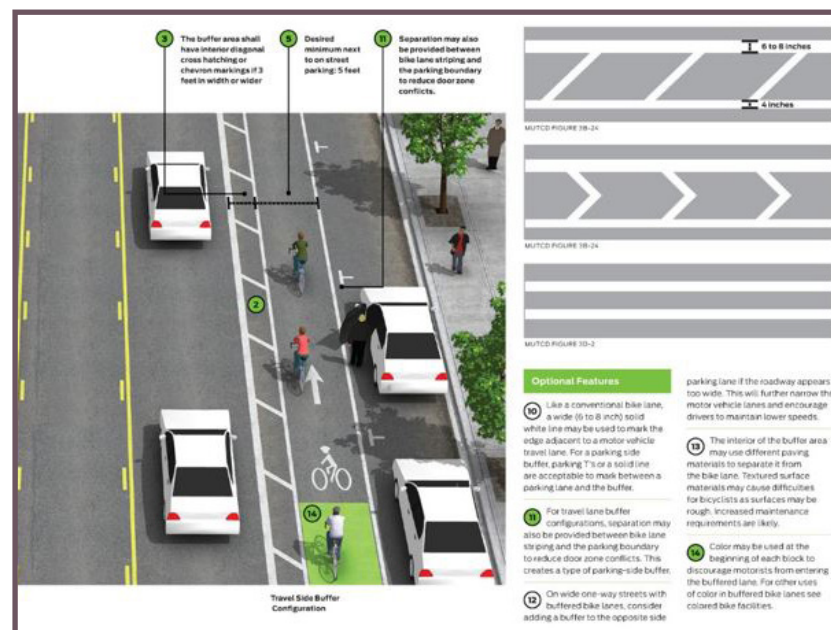


Figure 5i: Example of Painted Buffer Shoulders

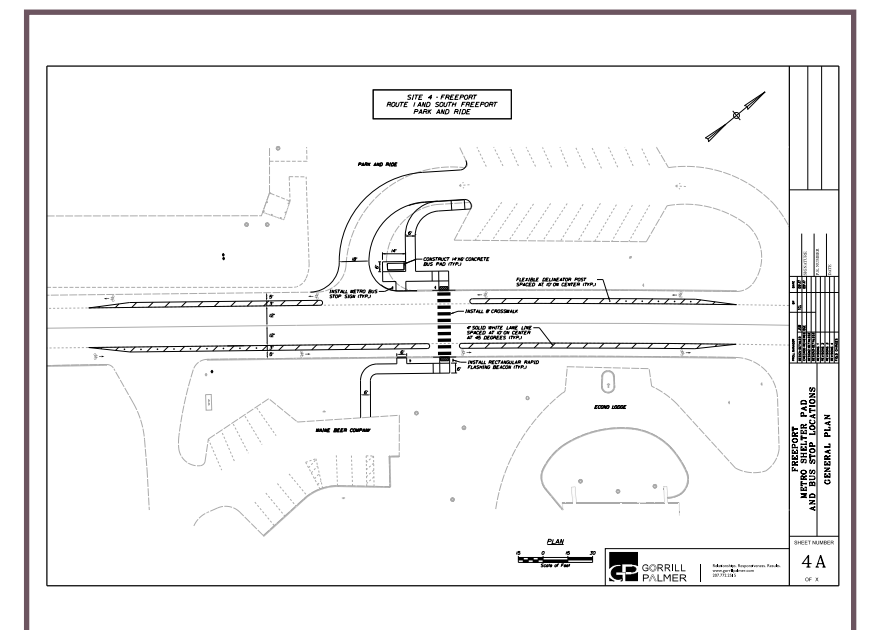


Figure 5j: Proposed Crosswalk at Maine Beer Company.



## 6.0 PUBLIC OUTREACH

### OVERVIEW

The major components of public outreach for this study were an online survey and individual public meetings in Falmouth, Cumberland and Yarmouth Towns. The survey kicked off the study to gather specific safety and other concerns from stakeholders; the meetings took place further along in the process to gather feedback on specific draft streetscape recommendations. Freeport performed public outreach via the Active Living Committee and the Traffic and Parking Committee.

### ONLINE SURVEY

The survey was built on a Survey Monkey framework, was fielded November 14, 2016, and closed on December 6, 2016. Publicity for the survey was posted via the Town websites of Falmouth, Cumberland and Yarmouth, existing Town email lists, a weblink on the Study Facebook page, and a Falmouth Forecaster article. Paper surveys were made available at all three Town offices. This resulted in 552 online respondents and two paper surveys.

**554**  
total  
respondants

The survey asked questions regarding the respondents' background and perception of vehicle, biking and walking safety in the corridor. The below results are broken down by mode.

#### General Summary of Results

##### Respondants' Background

A similar level of response was received from all three communities; 11% did not live in Falmouth, Cumberland or Yarmouth. About two-fifths worked in the corridor (fewer in Cumberland); most of the remainder worked in Portland, with the second largest category being retired. Commute distances were fairly evenly spread, including the "I do not commute" category.

##### Vehicle Safety

The two most dangerous locations were Route 88/Exit 17 in Yarmouth and the Route 88 intersection in Falmouth (47 and 43%). Second was Portland Street/Yarmouth and Tuttle Road/Cumberland (27 and 23%). Exit 15 and Johnson Road were at 19 and 18 percent respectively. Fifteen percent of respondents had actually been in crashes, with Johnson Road and Portland Street ranking the highest.

##### Biking

The highest category of bike rider was Strong and Fearless at 34%. Thirty percent were interested but concerned and 25% would not ride a bike under any circumstances. More than 50% never ride a bike in the corridor; 28% ride occasionally and 16% often. If facilities were improved, half of the Never (50%) say they would as a result ride occasionally, and the number of those who say they would Ride Often doubled. The vast majority of trips are recreationally/exercise based: 95%.

##### Walking

Only 40% of respondents would walk anywhere on Route 1; 281 people suggested improvements. Slightly less than half did not have an opinion as to where sidewalks and crosswalks should be added; of those who did, 27% of the locations were in Yarmouth, with more interest shown overall in sidewalks as opposed to crosswalks. A resounding 85% are unwilling to walk along Route 1 without sidewalks. Johnson Road rose to the top as an area that needs improvement. More than 84 percent also felt that crosswalks are adequately timed. Three quarters of respondents felt that drivers "usually" yield the right of way to pedestrians, 15% said rarely, only 7% said always.

##### Transit

Fully 95% of those who responded said they "never" use the Breeze. More than 80% did not have an opinion on where to place new bus stops. Of the 80 people who responded, about 10 of the comments were anti-bus and the rest were specific suggestions, including regional suggestions such as Portland Jetport as a destination.

### PUBLIC MEETINGS: FALMOUTH, CUMBERLAND, YARMOUTH, AND FREEPORT

#### Cumberland Meeting Comments: January 26, 2017

The meeting took place at the Cumberland Town Office. The meeting was publicized in the Forecaster, the Town web site and Town email list. About ten people attended. A summary of comments made is below.

An attendee asked if the presentation would be available online. Several questions about the proposed 3-lane section of Route 1 were asked: where will it be? A Route 1 abutter was concerned about losing land. Tom Errico explained that there is sufficient road width to add a lane without widening the existing pavement; lane width would be reapportioned. There was also a comment on where it should end heading northbound, and Tom noted that the place the attendee noted as logical was likely the right place to end it. Tom said this would be clarified in future plans.

A question as to why Route 1 is needed for biking as Route 88 is the designated East Coast Greenway. Tom explained that with the school and the residential growth on Route 1, these folks have a right to ride down to Falmouth if they want, from their homes or the school, on Route 1

There was discussion as to what side of the road any future added path would go. Tom discussed grade (levelness of the ground) issues and potential space. People in general preferred it on the west side. The decision was made to remove the red dotted line and simply make a note that a future path might be built, location TBD. Carla noted that it is likely future developers would fund any path.

The biggest topic was about a cut-through path from Route 88 to Route 1 via Conifer Ridge Road. Several neighbors attended and a letter was sent to the Town. Part of the subdivision agreement forbids any access to Route 1, and the neighbors do not want strangers accessing their land. They also stated that a utility easement could not be used for other purposes. The consultant team noted that given these comments, this option would be removed from the plans.

Speed on Route 1 was an issue for everyone. Tom said that as the area becomes more built out, the likelihood for a MaineDOT speed study agreeing to reduce the speed limit increases, so he counseled waiting to ask for one. There was also discussion about road design as a way to reduce traffic speed. Carla noted that access to Broad Cove Reserve, a Town-owned recreation area, was an important component to consider as the plan was developed. The group liked the Falmouth roundabout solution at the junction of Route 1 and Route 88

There was a discussion about a right turn on red from Route 1 onto Bucknam Road. Tom noted that the current signal system permits right turn on red. Tom will suggest adding a sign. Finally, Carla and Tom Foley noted that a good place for a future bus stop would be in an area of land adjacent to and just north of Casco Bay Drive. The Town does intend to add the Breeze as a transit service.

#### Yarmouth Public Meeting Comments: February 15, 2017

The meeting took place at the Yarmouth Town Office. The meeting was publicized in the Forecaster, the Town web site and Town email list. About 35 people attended, despite inclement weather. A summary of comments made is below.

A question was asked whether or not reducing the wider sections to two or three lane sections on Route 1 would create traffic backups, especially in view of the not infrequent accidents and congestion on I-295. Tom's response was no, there is plenty of capacity with fewer lanes, even at higher projected traffic levels. He also noted that narrower roads could reduce vehicle speeds, making it safer for all users.



Another comment was regarding the high number of curb cuts on Route 1 – can anything be done about that? Tom replied that some access management (combining drive-ways to multiple businesses, for example) when it makes sense could help.

A suggestion was made that increasing pedestrian access to Hannaford will help the use of the Breez to increase. It was noted that there are no sidewalks within the Hannaford lot, which leads to many conflicts with cars backing up. This is something Hannaford could potentially retrofit in the future.

It was noted that people tend to run red lights at the Hannaford/Willow Street intersection. Tom will look at this and see if he can do anything to reduce this action. He added that the new MaineDOT Exit 17 plan will include a traffic signal at this intersection and at the location where the new Beth Condon path will cross Route 1, the intersection will have a pedestrian activated signal.

#### **Falmouth Public Meeting Comments: February 16, 2017**

The meeting took place at the Falmouth Town Office; several other Town projects were on the agenda. The meeting was publicized in the Forecaster, the Town web site and Town email list. About 18 people attended. A summary of comments made is below.

In general, people believed that making a bike/pedestrian connection among the three Towns is wonderful. They felt there tends to be a gap where the I-295 interchanges intersect Route 1, and this is important to fix. There was discussion regarding the proposed roundabout in Falmouth; the majority of attendees like the concept.

There was discussion regarding the pathway moving from one side to the other at Johnson Road, with people feeling

it should stay on the same side. A pedestrian tunnel was requested. Tom replied to this that the pathway shift was needed to align with the side of the road where the path starts in Cumberland. He also noted that there is a signal, which he said is a safe way for pedestrians or bicyclists using the path to cross the road. Theo pointed out the topography along Route 1 varies in terms of steepness and height, so it is hard to keep the path on the same side along the entire corridor. This attendee is of the opinion that cars, bikes and pedestrians do not mix well and for safety's sake should be separated.

Additional discussion noted the need to see and comment on the Complete Streets plans, and clarification on who should use the path, bicyclists or pedestrians.

#### **Freeport Public Outreach**

Freeport engaged the public and key stakeholders through meetings with the Active Living Committee and the Traffic and Parking Committee. The meetings to date included:

- Active Living Committee Meeting – June 1, 2017
- MaineDOT/Metro/MaineBeer Meeting – July, 6, 2017
- Active Living Committee Meeting – August 10, 2017
- Traffic and Parking Committee Meeting – September 19, 2017