Route 79 / Davol Street Corridor Study

Executive Summary

Introduction

The Route 79 / Davol Street Corridor Study is an effort by the Massachusetts Department of Transportation (MassDOT) to undertake a comprehensive review of the transportation network in the Route 79 / Davol Street corridor, which runs along the eastern bank of the Taunton River in Fall River, Massachusetts. The main purpose of the study is two-fold: to identify transportation improvements within the corridor that will facilitate economic development of the City of Fall River's waterfront and to increase or balance overall mobility and access for all users of the study area transportation corridor – motor vehicle drivers, public transit riders, pedestrians, and bicyclists. As a product of this study, the recommendations focus on transportation solutions that can provide mobility and access in all modes and improve the livability and economic opportunities within the study area neighborhoods, with the recognition that not all traffic congestion issues can be eliminated entirely.

Over the past several years, the City of Fall River Redevelopment Authority (FRRA) and the Fall River Office of Economic Development (FROED) have completed a number of studies addressing the City's vision of revitalizing its waterfront. The most recent studies include the 2002 Fall River Harbor and Downtown Economic Development Plan prepared for FROED and the 2008 Route 79/Davol Street Transportation Study prepared for FRRA. This current MassDOT Route 79 / Davol Street Corridor Study builds on the 2008 FRRA study, evaluates additional alternatives in greater detail, and broadens its objectives.

The study encompasses five tasks:

- Task 1 – Study Area, Goals & Objectives, Evaluation Criteria, & Public Involvement
- Task 2 – Existing Conditions and Issues Identification
- Task 3 – Alternatives Development
- Task 4 – Alternatives Analysis
- Task 5 – Recommendations

Study Area

The study area for the Route 79 / Davol Street Corridor Study consists of two levels: (1) the Focus Area, which comprises the area in which potential transportation improvements are to be considered, and (2) the larger Regional Transportation Impact Area, which includes major intersections and roadways that affect the Focus Area and that may be impacted by any of the developed alternatives.

The Focus Area includes the Route 79 and Davol Street corridors along the Taunton River. The limits of the Focus Area are north of Brightman Street up to but not including the interchange with the Veterans Memorial Bridge to the north and Cedar Street to the south. The Focus Area, i.e. the area in which the study team is evaluating motor vehicle, pedestrian and bicycle operations under a range of roadway configurations and development scenarios, is illustrated in Figure ES-1.

The purpose of establishing the Regional Transportation Impact Area is to enable the study team to:

- Better understand the role and function of the transportation infrastructure in the Focus Area as it relates to the regional transportation network, and

- Evaluate the indirect impacts of study alternatives beyond the Focus Area.

The Regional Transportation Impact Area is comprised of a triangle formed by three major highways on the Fall River side of the Taunton River: Route 24 on the east, Route 79 on the west and I-195 on the south. On the Somerset side it includes U.S. Route 6 and I-195, roadways that could be affected by potential traffic diversions under various alternatives. The Regional Transportation Impact Area is illustrated in Figure ES-2.

Figure ES-1: Focus Area

Specifically excluded from the study area is the interchange of I-195 with Route 79. This interchange is being reconstructed as part of the MassDOT Accelerated Bridge Program under a separate Design-Build contract with a substantial completion date of 2016. To avoid duplication of effort, the Federal Highway Administration required that the I-195/Route 79 Interchange Project not be combined or overlap with any projects that may evolve from this study. This study incorporates the planned improvements at this interchange into the future conditions evaluation.

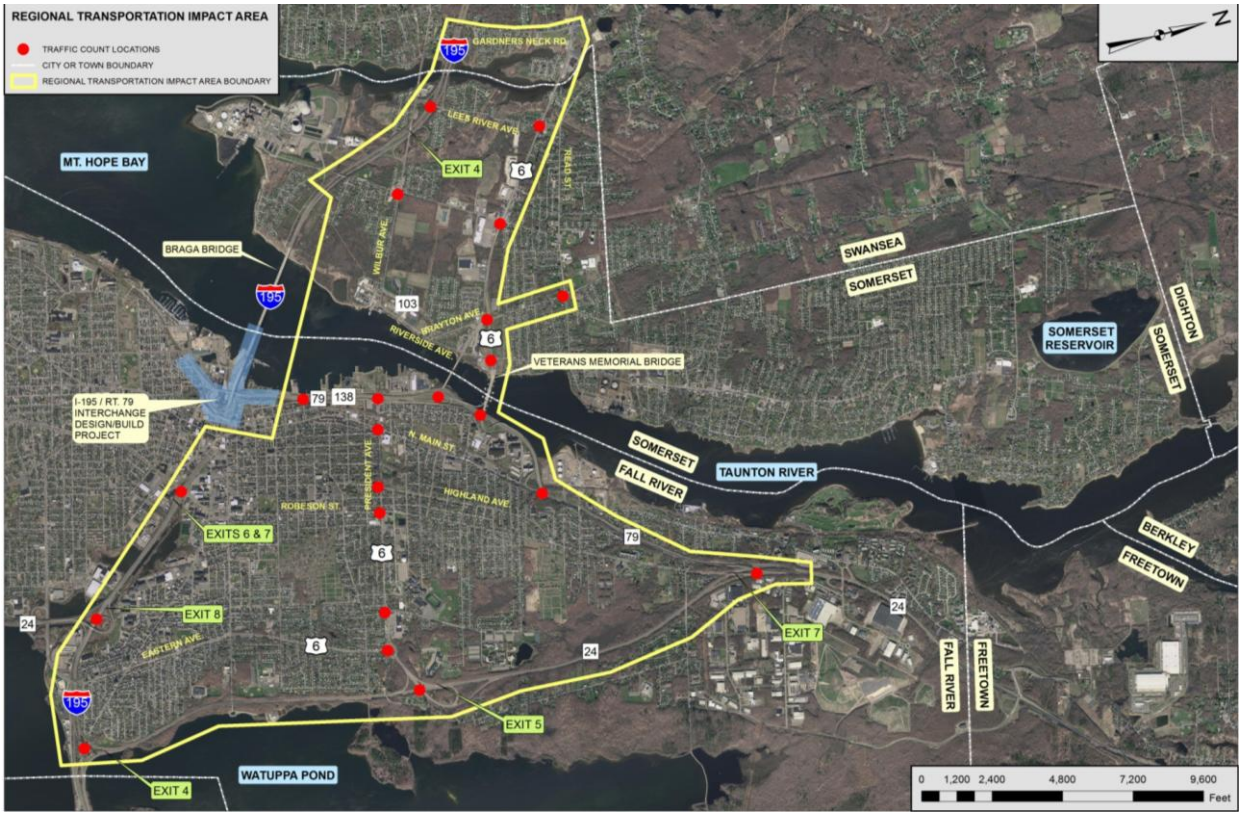

Figure ES-2: Regional Transportation Impact Area

Goals and Objectives

Goals and objectives for the study were developed by MassDOT through the public involvement process. The goals are meant to define the desired outcomes of the study in a concise manner. The objectives describe how these goals will be accomplished. Together, the goals and objectives shape the overall study framework, which guides the development and assessment of potential transportation improvements.

The Goals and Objectives for the study area are listed below:

Goal: Improve mobility, connectivity, and safety for all transportation modes and users along and across the Route 79 and Davol Street corridor study area.

Objectives:

- Provide new connections between Fall River neighborhoods and its waterfront
- Provide ADA-compliant pedestrian facilities throughout the project limits, including access to the future South Coast Rail
- Introduce bicycle accommodations throughout the project, including connection to the Veterans Memorial Bridge shared use path and access to the future South Coast Rail
- Maintain acceptable levels of service at both regional and local levels
- Implement measures to improve safety at high crash locations

Goal: Promote and foster local and regional economic development potential.

Objectives:

- Create new development parcels
- Provide access to development parcels
- Facilitate economic vitality and attractiveness of parcels through efficient access
- Develop roadway infrastructure that will support the desired development size and mix

Goal: Improve the quality of life for residents of surrounding neighborhoods and throughout Fall River.

Objectives:

- Provide new neighborhood connections to the waterfront
- Integrate circulation with reconfigured roadways and new development parcels
- Provide opportunities for enhancing attractiveness of the waterfront by improving aesthetics within the corridor
- Provide fair and equitable treatment for Environmental Justice population
- Minimize air quality impacts
- Provide access to the future South Coast Rail station

Evaluation Criteria

The evaluation criteria are specific considerations, or measures of effectiveness, used to assess benefits and impacts of alternatives developed during the study. The evaluation criteria are based on the defined goals and objectives. As shown in Table ES-1, six general evaluation categories were established and confirmed through the public involvement process to be consistent with the study goals and objectives:

Table ES-1: Evaluation Criteria Categories and Corresponding Goals

Evaluation Criteria Category	Corresponding Project Goal
Mobility	Improve mobility, connectivity, and safety for all transportation modes and users along and across the Route 79 and Davol Street Corridor Study area
Safety	
Land Use and Economic Development	Promote and foster local and regional economic development potential
Health and Environmental Effects	Improve the quality of life for residents of surrounding neighborhoods and throughout Fall River
Community Effects	
Cost	A key factor supporting all project goals

These evaluation criteria, which are based on either quantifiable or more subjective qualitative measures of effectiveness, have been used to determine the best solutions for the defined goals and objectives.

Public Involvement Plan

A public involvement plan developed to support civic engagement in the study emphasizes the following principles:

- The public shall have access to information about the study
- The public shall be presented with clear information
- The public shall be able to engage with a responsive study team
- The public shall be able to participate in a process that is well coordinated
- All public outreach shall be conducted in a manner that is inclusive and sensitive

Specific elements of the Public Involvement Plan include:

- Study Working Group

  A Working Group was created to guide the planning process for the Route 79 / Davol Street Corridor Study. Stakeholders/interests represented on the Working Group include the project area neighborhood advocacy groups, bicycling advocates, regional planning and transit agencies, environmental/water resources groups, recreation and municipal entities, state and federal government (elected officials and staff). Eight Working Group meetings were held:

  - Working Group Meeting #1: September 19, 2012
  - Working Group Meeting #2: December 6, 2012
  - Working Group Meeting #3: March 5, 2013
  - Working Group Meeting #4: May 29, 2013
  - Working Group Meeting #5: June 27, 2013
  - Working Group Meeting #6: November 7, 2013
  - Working Group Meeting #7: December 19, 2013
  - Working Group Meeting #8: May 7, 2014

- Public Meetings

  The study team conducted two public meetings during the course of the project development:

  - Public Informational Meeting #1: March 21, 2013
  - Public Informational Meeting #2: November 21, 2013

- Outreach to Environmental Justice Communities

  Special efforts were made to engage and communicate with Environmental Justice populations in the Route 79/Davol Street Corridor Study area. Representatives of six Environmental Justice groups joined the study Working Group. Project information was communicated to the public in Portuguese, English and Spanish languages.

- Project Website

MassDOT developed and maintained an interactive website as a way to support the study's public participation efforts: http://www.massdot.state.ma.us/route79.

- Newsletters / Fact Sheets

  The Study Team published and distributed periodic updates in a newsletter or fact sheet format.

- Media Coordination / Other Communication Networks

  The Study Team reached out to the media in advance of public meetings. Local news outlets that received information included newspapers, radio, and television. In addition, the study team reached out to other communication networks within the City of Fall River.

Existing Conditions

Evaluation of existing conditions encompassed environmental conditions, land use, socio-economic data, and multimodal transportation, including vehicles, pedestrians, bicycles and transit. Through the assessment of these factors, further validated by the future conditions analysis, the study identified issues, constraints and opportunities to be explored during development and analysis of alternatives. The most relevant highlights of each category are summarized below.

Environmental

The Taunton River

The most prominent natural resource within the project study area is the Taunton River, which lies just to the west of Route 79. In 2009, the entire 40-mile stretch of the Taunton River from the Town of Bridgewater, south to its confluence with Mt. Hope Bay, was officially designated as part of the National Wild and Scenic Rivers System. Within the vicinity of the project Focus Area, the Taunton River has three bridge crossings: the Braga Bridge along I-195, the former Brightman Street Bridge that is now closed to traffic, and the Veterans Memorial Bridge which was completed in 2011 to replace the Brightman Street Bridge.

Floodplain

The only floodplain resources located within the study area are associated with the Taunton River. The 100-year floodplain covers much of the land west of Route 79 and Davol Street West but also extends further to the east as far as the railroad tracks at the southern limits of the Focus Area. The 500-year floodplain extends further inland than the 100-year floodplain in a few isolated areas and encroaches onto Route 79 near President Avenue.

Hazardous Waste Sites

A review of hazardous materials GIS data for the project area identified the locations of two Activity and Use Limitations (AUL) sites. One of these sites recorded a small spill of fuel oil in 1995. The other one reported a release of aromatic hydrocarbons in 2003.

Protected and Recreational Open Space

There is a public park known as Veterans Bicentennial Park located within the study area, between Davol Street West and the Taunton River. The park falls under Section 4(f) of the Department of Transportation Act of 1966.

Environmental Justice Populations

Both low-income and minority populations live in or near the project study area. Review of census data indicated a large percentage of the population, approximately one-quarter, considered Portuguese as their primary language.

Socio-Economic

Demographic Trends

Fall River's population has fallen 3% between 2000 and today, compared to a 1% loss statewide. Roughly one-fifth of Fall River's population is foreign-born and one-third speaks a language other than English at home. Within the study Focus Area, the population is estimated to be 200 people. Nearly 90% of residents live in the waterfront Point Gloria Condominiums.

Economic Characteristics

Fall River's civilian labor force has dropped by 3% during the past decade. The median household income in the City rose by 18% since 2000, but is still roughly half of the State average. The percentage of households below poverty level rose from 16% to 20% over this timeframe and is significantly higher than the Massachusetts average 11% poverty rate.

Housing Stock

While total housing units in Fall River have slightly increased over the decade, the portion of owner occupied housing has decreased. Average housing values in the City climbed by 36% to approximately half the statewide average. Just 2% of owner-occupied housing is vacant, compared with 10% of rental housing. A good supply of rental housing is a positive condition for economic growth as it means that there are ample affordable housing choices for new workers entering the community.

Commercial Real Estate Market Trends

Sale prices for industrial properties in the City peaked in late 2007 and have since decreased, consistently with the statewide trends. Asking prices for industrial buildings are averaging approximately 15% below the statewide average. Asking prices for office space in Fall River have fallen since 2006 by 25% as compared to 15% at the state level. Due to the newly converted Commonwealth Landing Mill, there is an excellent supply of office space for rent in the study area. Retail prices in Fall River have been relatively stable over the past six years.

Land Use

Route 79 is located along the western side of the City of Fall River, an urban area. On a regional scale, the land use east of Route 79 is predominantly high-density residential with some commercial and industrial properties interspersed. To the south and east, the land use includes two historic districts, Highlands and Lower Highlands. The land to the west of Route 79 varies widely and includes commercial properties, apartments and condominiums, industrial sites, parkland and a boardwalk along the edge of the Taunton River.

Within the Focus Area industrial uses are the most dominant, occupying over 35% of study area acreage. Retail represents 22% of land uses with office at 9% of the total acreage and residential land uses at 7% are the sparsest.

Transportation

Vehicular Traffic

Major north-south roadway facilities within the Focus Area include Route 79, Davol Street East (northbound) and Davol Street West (southbound). President Avenue (U.S. Route 6) is the only east-west roadway crossing under Route 79. Two underpasses, one near Cory Street and another one near Cedar Street, as well as an overpass near Brightman Street accommodate u-turns between northbound and southbound Davol Street. Both Route 79 and President Avenue are on the National Highway System.

Route 79 carries approximately 26,000 vehicles per day (vpd) with southbound direction being the predominant movement during both morning and afternoon peak periods (approximately 55/45 southbound/northbound split).

Davol Street East carries approximately 15,000 vpd in the northbound direction and Davol Street West about 11,000 vpd in the southbound direction. Traffic volumes are split almost equally between the two roadways during the morning peak period and are much more pronounced in the northbound direction in the afternoon with a roughly 60/40 northbound/southbound split.

President Avenue daily volume is approximately 18,000 vpd with a distinct directional eastbound/westbound distribution of 60/40 in the morning and a slightly more balanced 55/45 split in the afternoon.

Operationally, all roadway segments and ramps within both the Focus Area and the Regional Transportation Impact Area operate at Level of Service (LOS) D or better with Route 79 operating at LOS A, which indicates availability of extra capacity. All intersections within the Focus Area operate at LOS C or better.

Pedestrians and Bicyclists

The Route 79 and Davol Street corridor presents a barrier impeding pedestrian access to the waterfront. There is only one east-west pedestrian connection across Route 79 within the Focus Area at President Avenue. This crossing features narrow 5-foot sidewalks, lacks lighting and in general is not a pleasant pedestrian environment. The next closest pedestrian link to the waterfront is approximately one mile to the south near I-195 at Central Street. The sparse east-west pedestrian crossings may encourage local residents to drive to the waterfront, rather than walk. While sidewalks are present along Davol Street, many locations lack ADA-compliant accessible ramps meeting the current standards. Most crossings at side streets do not have designated crosswalks.

There is a wooden boardwalk along the waterfront which starts at Fall River Heritage State Park and continues for 1/2 mile to the north. At this point is becomes a paved path, which connects to and through Bicentennial Park. There are currently no accommodations to walk further north along the waterfront.

Many Fall River streets are generally suitable for bicycling given typically slow urban traffic speeds on narrow rights-of-way. Although it is currently used by bicyclists, the Department of Conservation and Recreation (DCR) prohibits bicycling on the boardwalk that begins at Fall River Heritage State Park because the boardwalk does not meet bicycling design standards.

The Veterans Memorial Bridge has a shared-use path on the north side. On the Fall River side this path ends at Wellington Street. The City has provided signs for an on-street bike route between Wellington Street and President Avenue. Once at President Avenue, the bike route does not connect to any other bicycle facilities, requiring bicyclists to ride in the roadways undesignated for bicycle use or dismount and walk with their bike along the sidewalk.

Transit

Local transit service in the Fall River area is provided by the Southeastern Regional Transit Authority (SRTA). SRTA Route 2 operates in the Focus Area with a stop at Commonwealth Landing.

Safety Deficiencies

Five intersections within the Focus Area and one intersection immediately east of the Focus Area experience crash rates above the statewide and District 5 average rates. These intersections are:

- Southbound Davol Street at U-turn near Cedar Street
- Northbound Davol Street at U-turn near Cedar Street
- Northbound Davol Street at President Avenue
- President Avenue at Lindsey Street
- Lindsey Street at Brownell Street
- President Avenue at North Main Street

There have also been three crashes over a three-year period involving pedestrians, two of them at the Lindsey Street intersection with President Avenue.

Future No-Build Conditions

Future No-Build Conditions were analyzed for the Regional Transportation Impact Area and the Focus Area for the year 2035. Traffic projections were based on the travel demand forecasting model developed by Central Transportation Planning Staff (CTPS). The forecasts include economic development changes planned regionally and within the Focus Area. Specifically, within the Focus Area they include the development of South Coast Rail, the Regatta Club, Marina at City Pier, Commonwealth Landing Mill, and a restaurant on Remington Avenue. The Future No-Build Conditions also assume completion of the I-195/Route 79 Interchange Project.

It is anticipated that the Route 79/Davol Street corridor will experience a modest traffic growth of 0.6% - 1% annually over the 20-year period with general travel patterns remaining similar to existing.

Operationally, most locations within the Regional Transportation Impact Area and the Focus Area will continue to operate at acceptable levels of service (LOS D or better), with some degradation at several intersections along President Avenue to LOS E. Route 79 will continue to exhibit excess capacity operating at LOS A and LOS B.

Issues, Constraints and Opportunities

Assessment of the existing and future no-build conditions in the Regional Transportation Impact Area and the Focus Area led to identification of a number of issues, constraints and opportunities that guided the development of alternatives. The following is a synopsis of these considerations.

Mobility

The main mobility issue within the Focus Area is limited connectivity between the Fall River neighborhoods and the Taunton River waterfront. Route 79 is a visual and physical barrier

allowing vehicular and pedestrian access only at President Avenue. There are several local street crossings under or over the railroad east of Davol Street, which provides an opportunity to explore extending these streets across Route 79 towards the waterfront. The excess capacity of Route 79 opens up a possibility of introducing these crossings via at-grade intersections. The associated potential reconfiguration of Route 79 allows consideration of restoring Brightman Street access to southbound Route 79 and Davol Street, lost several years ago as a result of the Veterans Memorial Bridge construction.

Pedestrians and Bicyclists within the Focus Area have limited options when traveling between Fall River and the waterfront. The only designated east-west crossing within the Focus Area at President Avenue is nearly one mile north of the next crossing at Central Street near I-195. The existing shared-use path that crosses the Veterans Memorial Bridge ends at Wellington Street and bicyclists then must travel through small local streets. Provision of additional east-west connections and roadway reconfiguration introduces an excellent opportunity to establish a continuous network of dedicated pedestrian and bicycle facilities throughout the Focus Area.

Completion of South Coast Rail and Fall River Depot will promote transit oriented development opportunities within the Focus Area. This presents a prospect of expanding or modifying public transit routes on the SRTA to provide better service to South Coast Rail and developments within the Focus Area.

Safety

Several intersections within the Focus Area have high crash rates. To a large degree, these crashes are related to poor site distance, lack of adequate provisions for pedestrians and bicyclists, and ineffective traffic signal phasing. Some of these deficiencies could be remedied in short-term with signage, pavement markings, and traffic signal modifications, supplemented by upgrades bringing the intersections to compliance with ADA provisions. A more extensive reconfiguration of Route 79 and local streets introduces an opportunity to further alleviate safety problems.

Land Use and Economic Development

The parcels along the eastern side of Davol Street East are shallow as they are bound by the street and the railroad, which limits their attractiveness for large-scale development. On the west side of Davol Street West, there are a number of underutilized sites as well as Bicentennial Park, a 4(f) parkland. Also on the west side is Commonwealth Landing, a development featuring successful restaurants and offering office and residential space which could act as a catalyst for other developments along the waterfront.

Health and Environmental Effects

The City of Fall River maintains a combined sewer system (storm water and sanitary sewer) that outlets into the Taunton River. Reconfiguration of roadways within the Focus Area provides an opportunity to introduce Low Impact Design (LID) standards and Best Management Practices (BMP) for drainage, thus mitigating this condition. The Taunton River is designated as wild and scenic river and is a rare species priority habitat. This encourages the public to learn about the river and also promotes recreational use of the river.

The 100-year and 500-year floodplain is located along the Taunton River and across the area near the southern limits of the Focus Area. The presence of flood plain coupled with considerations of climate change and potential sea level rise impacts the final Route 79 elevation.

Roadway reconfiguration also provides an opportunity to introduce a network of shared-use paths, promoting better health by encouraging the community to use alternative modes of transportation including walking and bicycling.

The Focus Area offers many opportunities within its existing conditions and through redevelopments that are planned or are ongoing. The waterfront is becoming a regional draw for commercial and residential developments, and the opportunity to reconfigure the Route 79 and Davol Street Corridor will improve safety and circulation for all modes of transportation and will encourage further development along the waterfront and in Fall River. Completion of the South Coast Rail will provide transit oriented development opportunities

Alternatives Development

The development of alternatives was guided by the identification of the issues, constraints, and opportunities within the Focus Area, along with the goals and objectives established in the early stages of the study. The Working Group also provided significant input into the process. Initially, twelve conceptual alternatives were developed and grouped into three broad families of alternatives:

- Alternatives Group 1 – Elevated Limited Access Route 79
- Alternatives Group 2 – At-Grade Route 79 (Urban Boulevard)
- Alternatives Group 3 – At-Grade Route 79 with Frontage Roads

The concepts varied with regard to roadway alignment, which considered shifting Route 79 to the east and to the west; number and location of east-west connections; extents of Davol Street East and Davol Street West; one-way vs. two-way roadways; and access to and from Brightman Street. Through the process of refining these concepts and with continuous input from the Working Group, three long-term alternatives, one from each Alternatives Group, evolved that offered the best match with the project goals and objectives. Brief descriptions of these alternatives follow.

Alternative 1 - Elevated Route 79 with Cross Connections

This alternative, shown in Figure ES-3, features Route 79 relocated east of its existing alignment. Route 79 would remain a limited access highway with overpasses at three new east-west crossings at Turner Street, Taylor Street/Fall River Depot Driveway, and Brownell Street. The existing President Avenue crossing would be maintained as well. Due to close spacing of these overpasses, Route 79 would remain elevated throughout its length in the Focus Area. Similar to existing highway, Route 79 would carry two lanes in each direction with ramps connecting it to Veterans Memorial Bridge and Davol Street. Brightman Street would be restored to a two-way roadway and would allow direct access to and from northbound Route 79 and Davol Street East. Davol Street East and Davol Street West would generally remain on their current alignments with new parcels of land created between Route 79 and Davol Street West.

A 15-foot wide shared-use path would be provided along the eastern side of Davol Street East and along the western side of Davol Street West. The two paths would be connected at every east-west crossing and the easterly path would also connect to the Veterans Memorial Bridge shared-use path.

Alternative 2 - At-Grade Urban Boulevard

Alternative 2 would change the character of Route 79 to an urban boulevard lowered to an approximate level of Davol Street East and President Avenue. It would feature a wide landscaped median, and would provide local access to the waterfront and Route 79 via new signalized intersections at Turner Street, Taylor Street/Fall River Depot Driveway, President Avenue, and Cory Street (See Figure ES-4). Route 79 would be shifted to the east where it would follow the current alignment of Davol Street East. It would carry three through lanes in each direction with turning lanes at the intersections. The U-turn near Cedar Street would be eliminated since it would be replaced by Turner Street. Davol Street West would be converted to a two-way roadway. The ramp configuration from northbound Route 79 to the Veterans Memorial Bridge would be modified to allow access from Brightman Street, which would be restored to two-way operation. New parcels would be created between Route 79 and reconfigured Davol Street West.

A 15-foot wide shared-use path would be provided along the eastern side of northbound Route 79 connecting to the existing Veterans Memorial Bridge shared-use path, and along the west side of Davol Street West. Connections between the two paths would be provided along all east-west roadways.

Alternative 3 - At-Grade Route 79 with Frontage Roads

Alternative 3 would lower Route 79 to the same elevation as Davol Street East and President Avenue, and realign it to the east adjacent to Davol Street East (see Figure ES-5). It would provide one-way frontage roads on either side of Route 79 for local access. Route 79 would carry two through lanes in each direction separated by a landscaped median. East-west

connections would be provided via signalized intersections at the U-turn near Cedar Street, Turner Street, Taylor Street/Fall River Depot Driveway, President Avenue, and Cory Street which . Left turns from Route 79 would be prohibited and local access would be accomplished via ramps at the northern and southern ends of the Focus Area. New parcels would be created between Route 79 and southbound frontage road. The U-turn near Brightman Street would be eliminated in order to open up an additional parcel of land near the old Brightman Street Bridge. Similar to Alternative 2, the Route 79 northbound ramp to Veterans Memorial Bridge would be modified and Brightman Street would be restored to two-way operation.

A 15-foot wide shared-use path would be provided along the eastern side of Davol Street East connecting to the Veterans Memorial Bridge shared-use path, and along the western side of Davol Street West. Connections between the two paths would be provided along all east-west roadways with the exception of the U-turn near Cedar Street.

Federal Highway Administration Review

The Federal Highway Administration (FHWA) after reviewing Alternatives 1, 2 and 3 provided additional input on the alternatives development process. Through this review, it was recommended to consider modifying Alternative 2 to provide a narrower cross-section and smaller intersections along Route 79. It was also recommended that Davol Street West be removed or shortened. From this input, Alternative 2 – Modified was developed (see Figure ES-6).

Alternative 2 – Modified was based on Alternative 2 with the following changes:

- The Route 79 mainline would be reduced from three lanes to two lanes in each direction.
- Davol Street West would be truncated to provide only local access and discontinued as a through roadway with isolated segments providing access to existing parcels and businesses.

In addition to the long-term alternatives, a number of short-term and medium-term improvements have been identified through the alternatives development process and input from the Working Group. The focus of these improvements was primarily on enhancing safety and bicycle circulation within the Focus Area. These improvements are as follows:

Short-Term Improvements

- Davol Street U-turn near Cedar Street: clear vegetation to improve sight distance and provide striping and singing to better warn delineate merging maneuvers
- President Avenue at Davol Street East and Lindsey Street Intersection: install signs and pavement markings to improve pedestrian visibility and safety. Upgrade accessible ramps and traffic signals to ADA standards.

Figure ES-3: Final Alternative 1 Used for Analysis

Figure ES-4: Final Alternative 2 Used for Analysis

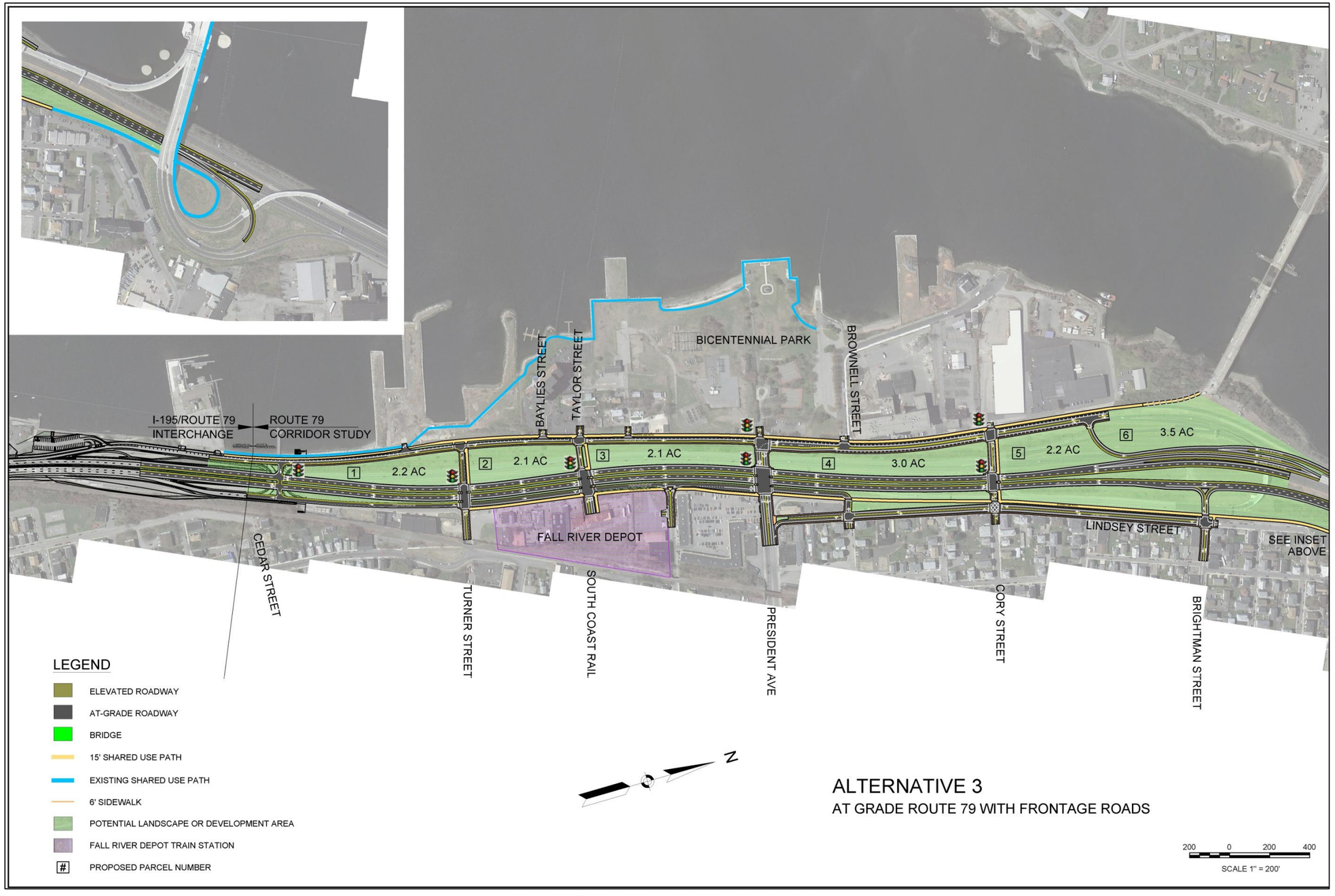

Figure ES-5: Final Alternative 3 Used for Analysis

Figure ES-6: Alternative 2 – Modified

- President Avenue at North Main Street: modify lane configuration and traffic signal phasing to introduce protected left turns. Upgrade accessible ramps and traffic signals to ADA standards.
- Lindsey Street at Brownell Street: install pavement markings and signage to emphasize crosswalks. Upgrade accessible ramps to ADA standards.
- Davol Street Bicycle Accommodations: modify pavement markings and install signs to provide bicycle lanes.

Medium-Term Improvements

- Shared-Use path on Davol Street West: reconstruct Davol Street West to reallocate space within existing right-of-way and provide a 10-foot shared-use path, 5-foot grass strip, 8-foot parking lane, and a 14-foot travel lane.

Alternatives Analysis

Four long-term alternatives were developed and refined based on preliminary planning, engineering, and Working Group input. Alternatives 1, 2, 2 – Modified, and 3 were analyzed in detail using forecasts developed by the CTPS travel demand model and evaluated using the established criteria. Alternatives 2 and 2 – Modified were based on the same forecasting scenario.

As summarized in Table ES-2, all four alternatives would meet the study goals and objectives to varying degrees and constitute an improvement over the No-Build. In addition to President Avenue, all alternatives would introduce three (four in case of Alternative 3) new east-west connections between the Fall River neighborhoods and the Taunton River waterfront, enabling safe access for vehicles, bicyclists, and pedestrians. This access would be limited to President Avenue under the No-Build conditions.

All four alternatives would equally provide direct access to and from the South Coast Rail Fall River Depot Station via the Taylor Street/Fall River Depot Driveway. Under the No-Build scenario, such access would be circuitous via Davol Street East, requiring vehicles approaching the station from the north to use the U-turn near Cedar Street and vehicles leaving the station and heading south to actually travel north towards President Avenue where they could reverse the direction. Pedestrian connection between the station and the waterfront would be limited to the President Avenue route.

While the No-Build scenario would maintain efficient regional and local operation in terms of vehicular level of service, it would lack connectivity afforded by the four Build alternatives. Alternative 1 would offer the most balance between regional and local traffic operation by maintaining high levels of service for through traffic on limited access Route 79 while adding east-west connections. Of all the alternatives it would also provide the shortest walking times between the neighborhoods and the waterfront since pedestrians would proceed under Route 79 without stopping.

Alternatives 2, 2 - Modified and 3 would introduce traffic signals along Route 79, increasing delay to through traffic. Under Alternative 2 all intersections within the Focus Area would operate at LOS C or

better. Alternative 2 – Modified would experience longer delays due to reduced Route 79 cross section with all intersections within the Focus Area operating at LOS D or better, although individual approaches may experience long queues and LOS E or LOS F during peak hours. Under Alternative 3 most of the intersections within the Focus Area would operate at LOS D or better with the exception of Route 79 intersection with President Avenue, which would operate at LOS E during the afternoon peak hour. While traffic signals would somewhat impede the through traffic, slower speeds and improved accessibility would be consistent with the redefined character of the corridor.

Pedestrian travel times would be greatly reduced under the four Build alternatives. For example, under the No-Build scenario an average person walking from Turner Street to City Pier along designated areas would have to travel circuitously via President Avenue for a distance of 3400 feet taking approximately 17 minutes. All of the Build alternatives would reduce this distance to less than 600 feet resulting in travel time saving of 12-13 minutes. Alternative 1 would offer the shortest travel times, followed by Alternative 2 – Modified, then Alternative 2, and finally Alternative 3. Bicycle accommodations would be very similar among all four Build alternatives, as well as opportunities to optimize bus transit service by connecting it to the Fall River Depot Station.

Table ES-2: Evaluation of Alternatives versus Study Objectives

Study Objective	Future No-Build	Alternative 1	Alternative 2	Alternative 2 Modified	Alternative 3
Provide better connectivity between Fall River and the waterfront	■	●	●	●	●
Enhance access to South Coast Rail	▬	●	●	●	●
Balance local and regional mobility	□	●	○	○	○
Improve and enhance safety conditions	□	●	●	●	●
Increase opportunities for economic development and land use	◇	◒	●	●	○
Minimize potential impacts to the environment and community	□	○	●	●	●

LEGEND:	Some	Moderate	Substantial
Benefits	○	◒	●
Impacts	□	▬	■
Neutral	◇		

While the No-Build scenario would not improve safety conditions within the Focus Area, all four alternatives, in addition to short-term improvements, would enhance vehicular, bicycle and pedestrian safety by reconfiguring high crash locations and providing dedicated ADA accessible facilities for non-motorized modes.

The No-Build alternative would present limited opportunity for economic development within the Focus Area. Such development could only happen within the existing parcels and would be hindered by lack of local connectivity and provisions for multimodal access. While economic development could happen elsewhere in the city, it would do little for enhancing the Fall River waterfront. The Build alternatives would introduce new development parcels which would shift anticipated spending, income, residents and jobs to the waterfront.

The level of development would vary among the alternatives. It would depend on the amount of newly created land, compatibility with regional forecasts established for the City of Fall River, and capacity of supporting infrastructure. Based on these parameters, Alternative 1 could support approximately 1.3 million square feet of new development. Alternatives 2 could support a slightly lower level of 1.2 million square feet due to reduced capacity of Route 79. Since travel demand forecasting was not performed for Alternative 2 – Modified, the analysis assumed the same development level as Alternative 2. Alternative 3 could support a significantly lower level of development, in the range of 0.3 million square feet. The roadway configuration under this alternative presents a substantial limitation to the amount of traffic that could be adequately processed.

The economic impacts associated with these alternatives would be proportional to the extent of development they could support. Table ES-3 presents a rough estimate of jobs that could be generated within the Focus Area under each development scenario. Alternative 2 – Modified is not shown as its level of development is identical to Alternative 2.

Table ES-3: Jobs & Residents Shifted to the Focus Area due to Route 79 Alternatives

Alternative	Land Use			Total Jobs & Residents
	Retail (SF)	Office (SF)	Residential (Units)	
Alternative 1 – Elevated Route 79				
Development	266,500	266,500	724	
Total New Jobs or Residents	666	1,066	1,448	3,180
Alternative 2 – At Grade Route 79				
Development	238,500	238,500	649	
Total New Jobs or Residents	596	954	1,298	2,848
Alternative 3 – At Grade Route 79 with Frontage Roads				
Development	51,000	51,000	137	
Total New Jobs or Residents	128	204	274	606

By creating significant amounts of open land within the proposed parcels, all alternatives would promote the use of sustainable design and incorporation of Best Management Practices (BMPs). The community would benefit greatly from the prospect of introducing extensive landscaping and aesthetic treatments, such as lighting and street amenities. Alternatives 2, 2 – Modified and 3 would provide the greatest benefit as lowering Route 79 would maximize these opportunities. Alternative 1, while still exhibiting a substantial improvement over the No-Build, would accomplish this to a lesser extent by retaining the visual barrier of elevated Route 79.

A preliminary costs estimate was compiled for each of the alternatives. The estimate includes the construction cost, the cost of environmental permitting and engineering, and right-of-way reclamation costs. Right-of-way reclamation constitutes the requirement to compensate FHWA for the value of land within the state highway layout originally funded by the federal government that is repurposed or sold for non-transportation purposes. These estimated values do not reflect fair market value analysis. They are based on a synthesis of existing assessed values, recent waterfront sales comparisons and local and regional benchmark commercial properties. The costs are summarized in Table ES-4.

Table ES-4: Estimated Grand Total Costs per Alternative

Cost	Alternative 1	Alternative 2	Alternative 2 – Modified	Alternative 3
Construction Cost	$100 Million	$55 Million	$55 Million	$55 Million
Environmental Permitting and Design	$15 Million	$8 Million	$8 Million	$8 Million
Right-of-Way Reclamation*	$2.7 Million	$2.7 Million	$3.5 Million	$4.2 Million
Grand Total Cost	$117.7 Million	$65.7 Million	$66.5 Million	$67.2 Million

*Right-of-way reclamation costs do not reflect fair market value and are based on synthesis of existing assessed values, recent waterfront sales comparisons and local and regional benchmark commercial properties

Recommendations

The purpose of this study is to develop alternatives that will foster economic development along the Fall River waterfront while improving multimodal accessibility between the waterfront and the neighborhoods. The framework for accomplishing this purpose is identified through the study's goals and objectives. The assessment of alternatives developed throughout the study was conducted with respect to their ability to achieve these goals and objectives. While alternatives that best meet these goals and objectives were determined in this study through a combination of analytical methods and an extensive public participation process, the policy context will aid in the decision making going forward. This report concludes the planning process and sets the stage for advancing the study's recommendations into the project development phase.

Assessment of the alternatives with regard to their performance and measures of effectiveness coupled with early and continuous community input and guided by the FHWA and MassDOT policies led to a determination that Alternatives 2 and 2-Modified would be the most advantageous in addressing the study goals and objectives. As such, these alternatives are recommended for advancing to the next step. Figures ES-7 and ES-8 present three-dimensional renderings of Alternative 2.

Figure ES-7: Rendering of Alternative 2 – Aerial View (Looking North)

Figure ES-8: Rendering of Alternative 2 – Street View (Davol Street Looking Northeast)

In addition to the long-term alternatives, a number of short-term and medium-term improvements are recommended for implementation. Although they do not fulfill the overall study goals and objectives, they improve safety and multimodal accessibility and can be implemented within a shorter time frame than the long-term alternatives due to lesser permitting and design requirements and lower construction costs. The next steps for the recommended long-term, short-term and medium-term improvements are listed in Table ES-5.

The Route 79 / Davol Street Corridor study has also been conducted in the context of transportation policy and planning principles that are significantly different from those that were in place when Route 79 and Davol Streets East and West were built. The planning environment for infrastructure in Massachusetts and around the country has changed, in terms of evolving policy positions and in local and regional priorities. The recommendations for this study were not determined strictly by how much vehicular traffic can be moved, but were also developed in accordance with the following state and Federal policies and regulations:

- MassDOT's GreenDOT Policy and the GreenDOT Implementation Plan, which embraces the goals that will include the design of a multi-modal transportation system, promote healthy transportation and livable communities, and triple the share of travel demand by bicycling, transit, and walking.
- MassDOT's Complete Streets Policy, which requires balancing the use of the public right-of-way for all transportation modes, and requires that MassDOT projects provide safe and accessible options for all travel modes for all ages and abilities, and emphasizes a multi-modal philosophy.
- The Massachusetts Healthy Transportation Compact and MassDOT's Healthy Transportation Policy Directive, an agreement between MassDOT, Massachusetts Health and Human Services, the Secretary of Energy and Environmental Affairs, and the Massachusetts Department of Public Health, which requires that all MassDOT projects not only accommodate, but actively promote healthy transportation modes. This legislation is designed to facilitate transportation decisions that balance the needs of all users, expands mobility, improves public health and supports a cleaner environment.
- Federal regulations, which include Moving Ahead for Progress in the 21st Century (MAP-21) which is FHWA's national surface transportation plan, that, among many other things, seeks to increase the emphasis on non-auto users and encourages opportunities for alternative travel modes including transit, bicycle and pedestrian.

All of these policies reflect the fact that roadways are part of an infrastructure that must serve all users, while being an integral part of the surrounding neighborhoods. Providing access for all modes and travelers, considering vulnerable roadway users, enhancing transportation choices, fostering community connectivity and economic development, and ensuring the public health of adjoining residents are important considerations that are recognized through the policies and initiatives described above.

The recommended alternatives will implement these goals, themes, policies and regulations by:

- Allowing for increased green space
- More trees in the median, along each side of Route 79, along the east side of Davol Street West, and along each side of the east-west connecting roads
- Improved bicycle and pedestrian access
- Improved access to bus and rail facilities

Table ES-5: Summary of Recommended Alternatives and Major Milestones

Recommended Improvement	Major Milestones	Responsible Party	Implementation Cost
Long-Term			
Alternative 2 and Alternative 2 - Modified	• Prepare and submit PNF, PIF and TEC • Determine NEPA and MEPA review requirements • Coordinate with SRPEDD to include project in the region's TIP • Coordinate with FHWA regarding Route 79 being part of NHS • Coordinate with City of Fall River regarding study area master plan • Coordinate with South Coast Rail on access to Fall River Depot • Coordinate with SRTA regarding options of modifying bus routes • Complete environmental permitting and preliminary engineering • Determine project delivery method • Procure and complete final design and construction	MassDOT	$66,500,000
Short-Term			
Davol St. U-turn near Cedar St.	• Implement upon substantial completion of I-195/Route 79 Interchange	City of Fall River	$9,000
President Ave. at Davol St. East and Lindsey St.	• Perform engineering • Procure and complete construction	City of Fall River	$55,000
President Ave. at North Main St.	• Perform engineering • Procure and complete construction	City of Fall River	$89,000
Lindsey St. at Brownell St.	• Perform engineering • Procure and complete construction	City of Fall River	$22,000
Davol St. Bicycle Accommodations	• Implement upon substantial completion of I-195/Route 79 Interchange	City of Fall River	$22,000
Medium-Term			
Davol St. Shared-Use Path	• Initiate project development: prepare and submit PNF and PIF • Coordinate with SRPEDD to include project in the region's TIP • Obtain survey • Complete environmental permitting and engineering • Procure and complete construction	City of Fall River	$1,320,000