

Connecting Libbytown



Pedestrian and Bicycle Improvements for a Dynamic Neighborhood

Prepared for
City of Portland
Portland Area Comprehensive Transportation Committee

Prepared by
Portland Trails
with
Oak Engineers

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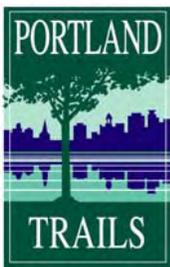


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I. Executive Summary

This report details the findings and recommendations of a study to determine a priority bicycle and pedestrian route between The Portland Transportation Center in the Libbytown neighborhood of Portland, and Deering Oaks (a municipal park). The report also provides findings and recommendations for pursuing an off-street, multi-use trail link between these same points, as well as describing challenges and opportunities for improving bicycle and pedestrian improvements in the Libbytown area.

Background

In September of 2008, the Portland Area Comprehensive Transportation System (PACTS), the metropolitan planning organization (MPO) for the federal urbanized area around and including Portland, selected **Portland Trails** to perform an analysis of a potential trail link between the Fore River Parkway Trail and Deering Oaks. Funding for this project was facilitated by PACTS from Federal Highway Administration Planning funds, in combination with local matching funds from the City of Portland. The study was undertaken with assistance from the City of Portland. Portland Trails has engaged **Oak Engineers** as consultants to assist with the technical aspects of the analysis and report.

Goals

- Establish an effective, safe and attractive connection between the Portland Transportation Center and Deering Oaks
- Minimize cost of construction
- Minimize impervious area
- Use existing curb to curb width where possible
- Retain on-street parking where possible
- Accommodate all users
- Reuse existing infrastructure to the greatest degree possible
- Use creative and cost-effective solutions to achieve goals
- Create a route that feels safe, and encourages use by pedestrians and cyclists of all abilities, and creates an option to driving.

Priority Route Analysis

After consulting with area landowners, residents, state, county, and local agencies Portland Trails has determined that at this time the most cost-effective and feasible connection between the Portland Transportation Center and Deering Oaks consists of a largely on-street route using the Fore River Parkway, Frederic Street, Marston Street, and Park Avenue; illustrated in MAP 1 below:



MAP 1 - Priority Route

Major Recommendations for Priority Route

1. Crossing of Fore River Parkway at Frederic Street

A critical component of the Priority route is an at-grade crossing of the Fore River Parkway. There is an existing below-grade crossing of the Parkway approximately 500 feet east of Frederic Street. This route, while useful for some bicyclists and potentially a key link in a future rail-trail co-located corridor, is not ideally located for pedestrians, and has elicited some safety concerns from current users. Because the underpass is not suitable for all users at all times; and because many users are currently choosing to cross the FRP at-grade, we conclude that an at-grade crossing of the Parkway is necessary for the Priority Route to provide a viable connection between the Portland Transportation Center and Deering Oaks.

2. Re-configure Marston Street as a two-way street

In addition to allowing for safe and direct on-street bicycle accommodation, re-configuring Marston Street as a typical two-way street will begin to repair the urban fabric of this part of Libbytown by creating a more pedestrian friendly environment, and de-emphasizing the highway interchange and its associated impacts.

3. Install a one-way bicycle lane with a barrier, to allow for contra-flow bicycle traffic on Park Avenue west of Saint John's Street

This report recommends that the city work with the MaineDOT to re-configure Congress Street and Park Avenue as typical two-way streets. Until this is achieved, it will be necessary for bicyclists using the priority route to travel opposite auto traffic on this section of Park Avenue. Installing an appropriate barrier between the travel lanes and the bike lane will allow this to occur safely. The barrier would ideally be relatively inexpensive and/or reusable so that it can be removed if Park Avenue is re-configured.

4. Re-configuration of Park Avenue east of Saint John's to a two-lane road, with medians and center turn lanes as needed.

Though further study will be necessary, it appears that Park Avenue has excess vehicle capacity, and could safely accommodate current and future volume with one lane in each direction, and a center turn lane where needed. This would allow for the installation of bike lanes, a median and pedestrian refuge, and streetscape improvements. Treating Park Avenue as a "Great Street" will further define the ballpark district as a vibrant, pedestrian friendly area, and capitalize on existing infrastructure.

Rail Corridor Route Analysis

In addition to the route described above, this report analyzes the desirability and feasibility of a specific multi-use trail configuration extending from the Fore River Parkway at Frederic Street to Deering Oaks. The trail is envisioned as a co-located rail/trail corridor. This alignment follows two designated rail corridors, and was part of the original scope of this study. The route uses a segment of the existing trail under the Fore River Parkway, and is illustrated in **MAP 2 – Rail Corridor Route**.

Area-wide Pedestrian System Analysis

In conjunction with this study Portland Trails has endeavored to look comprehensively at the entire Libbytown area in an effort to determine what other trails, linkages, facilities, or infrastructure improvements may be desirable to compliment or supplement a specific linear connection between Fore River Parkway and Deering Oaks. This additional planning work has been undertaken by Portland Trails at their own expense, in order to augment the study and provide additional information to policy makers and others seeking to improve connectivity in the Libbytown area. This study describes locations of current challenges and potential infrastructure improvements in the area. These suggested improvements are derived from comments by the public, area residents, city staff, and other interested parties. While this report does not attempt to determine costs or feasibility of these various improvements, it establishes recommendations for implementation. Many of the recommendations are simple crosswalk or trail connections, and few would require right of way changes or other costly measures. See **MAP 3 – Libbytown Area**

II. Introduction

The partners involved in this study share a common goal of increasing neighborhood connectivity in Portland, while maintaining mobility for all modes and achieving cost effective, sustainable and buildable solutions.

Portland Trails is a nonprofit land trust that preserves green space for public access and connects people with places. Our goals are to:

- Create and maintain a 50-mile network of trails in greater Portland.
- Engage the participation of neighborhoods, schools, and the business community in trail use and land stewardship.
- Make Greater Portland a model for people-powered recreation and transportation.

Portland Trails has a long history of partnering with the City of Portland to achieve shared goals and create a more livable city. Portland Trails is currently participating in several other collaborative efforts that will augment the improvements recommended in this report, including;

- The Bayside Trail project; linking the Eastern Promenade Trail to Deering Oaks
- The MaineDOT Veteran's Bridge replacement project
- The Franklin Street Re-Design Study
- A MaineDOT trail easement along the I-295 peninsula east of Thompson's Point that will connect Thompson's Point and the PTC to the trails owned by Mercy Hospital along the Fore River
- Planning for a West Commercial Street pedestrian link, between Veteran's Bridge and the Casco Bay Bridge
- Bicycle Network planning committee work, developing strategies and designs for bicycle facilities on priority routes throughout the city (including Congress Street and Park Avenue)
- Implementation of the Outer Congress Street Corridor study recommendations.

Portland Trails has worked with many city neighborhood groups, including the Libbytown Neighborhood Association, to identify opportunities and challenges for improving pedestrian connectivity, trail network expansion, and greater livability.

Oak Engineers is a local engineering firm committed to creative design and development of sustainable transportation systems that meet the needs of all users. Located on Commercial Street in Portland's Old Port; Oak specializes in infrastructure, transportation, drainage and site design as well as stakeholder coordination.

Oak is currently working with the **Trust for Public Land, Portland Trails** and the **City of Portland** as project administrator for the Bayside Trail. Coordinating the efforts of the many stakeholders on the technically and politically complex project has provided the Oak team with insight into the transportation needs of the Portland peninsula.

This study reflects a commitment by the **City of Portland** to expand bicycle and pedestrian options throughout the city. Portland's Transportation Plan is very supportive of efforts to achieve greater connectivity between neighborhoods and decrease reliance on the Single Occupant Vehicle. City staff in both the Planning Department and the Department of Public Services have been working diligently to realize these community goals, and have had much recent success in implementing transportation projects and other components of the Comprehensive Plan. By focusing on mobility challenges in Libbytown, Portland will realize tremendous progress towards these goals.

PACTS has funded multiple projects with the aim of achieving a better balance of transportation choices for the region. As one example; currently the **Regional Bicycle and Pedestrian Plan** is being updated with input from Portland Trails, the City and other local stakeholders; this will help make the local improvements recommended in this report part of a more comprehensive regional effort to provide better transportation options.

Greater Context

This study is undertaken with the recognition that Libbytown is part of a greater context; Portland, the region and indeed the entire planet is at something of a crossroads. Nationally there seems to be a growing consensus that our transportation choices affect our quality of life and the health of our environment. With a greater understanding of climate change, public health, and other global issues we can begin to see our individual choices as part of a greater whole. Providing more choices for individual mobility is a significant part of the solution as we move towards a more efficient and sustainable way of meeting our daily transportation needs.

As people respond to issues such as climate change, obesity and increased traffic and congestion, many recognize the underlying theme of quality of life. Recent trends indicate more people are moving back into cities to take advantage of the inherent efficiency of the urban infrastructure. This, along with higher gas prices and other economic trends compels us to maximize our available assets and provide the transportation choices people desire. Improving the transportation and recreational options in Libbytown presents a significant opportunity for Portland to move towards this goal.

III. History and Existing Conditions

In order to provide some context for the recommended projects and improvements, it is helpful to understand some of the history that created the Libbytown neighborhood as we see it today.

Historically Libbytown was a neighborhood roughly between Massachusetts Avenue to the West, Saint John's Street to the East, and between Brighton Avenue, and the Fore River. Tavern-keeper George Libby and his descendants give the area its name, having settled in the early 19th century at the intersection of Park and Congress Streets, known as

Libby's Corner. The corner was the center of a small but thriving business district for many years, and the families that worked, shopped and lived there gave Libbytown its identity.

When Interstate 295 was built in the late 1960's Libbytown as a distinct neighborhood was effectively destroyed. Over 15 businesses and 200 families were displaced for the highway and large cloverleaf interchanges that so clearly define the area today. There are still several hundred Libby families living in the Portland area; though Libby's Corner no longer exists.

Recently the construction of the Portland Transportation Center, the Fore River Parkway, and several hotels has shaped the form and function of the Libbytown area. These projects, while largely beneficial, all continue an auto-centric design pattern, with large parking lots, wide street setbacks and a lack of connectivity for bicycles and pedestrians. Though these developments have altered the landscape, they still allow opportunity for infrastructure and programming changes that would greatly enhance mobility. Several of these changes are already in planning, or awaiting construction.



Formerly Libby's Corner

IV. Priority Route Analysis

Connecting the Portland Transportation Center to Deering Oaks via the Fore River Parkway, Frederic Street, Marston Street and Park Avenue

Introduction

The primary goal of this study is to identify a single, continuous pedestrian and bicycle route between the Portland Transportation Center (PTC) Trail and Deering Oaks. After researching the feasibility of an off-street option (as described in section VI), receiving feedback from members of the public, assessing right of way requirements and assessing the likely timeline required for each option, **it was determined that an on-street route was the most cost-effective and expedient option to pursue in the short-term.** As noted elsewhere, the off-street option is still desirable, and the two are not mutually exclusive, in fact they would compliment each other. We recommend working with rail stakeholders to pursue a rail/trail co-location on the Union Branch railroad corridor as a medium to long-term project. Eventually having the two routes in place would greatly enhance pedestrian connectivity in the area, and meet the needs of most travelers to and from the two destinations, as well as others making trips within the area. However, it should be noted that the rail corridor option is by no means certain, and should not be assumed to be a viable alternative to the on-street option without further study.

The on-street option described below will afford the most cost-effective and expedient connection between the PTC and Deering Oaks. Much of the route already exists, and with relatively minor financial investment the entire route could be constructed in the near term.

The recommended Priority Route would follow the Fore River Parkway to an at-grade crossing to Frederic Street. From Frederic Street the route would cross Congress Street to Marston Street, follow Marston to Park Avenue, and follow Park Avenue to Deering Oaks.

As an example, the route described below follows the path of a visitor arriving in Portland via the Downeaster from Boston, and proceeding on foot to Deering Oaks. [New infrastructure is in **bold** type, bicycle route is in *italics*]

The route begins at the Portland Transportation Center (PTC):

- At end of Thompson's Point Road sidewalk turn right onto Fore River Parkway (FRP) multi-use trail along south edge of FRP
- Proceed eastward to I-295 southbound on-ramp (for autos traveling east on FRP)
- Utilize existing crosswalk with motion activated ped signal (yellow blinkers)
- Proceed eastward, passing under I-295, to I-295 northbound on-ramp (for autos traveling east on FRP)
- Utilize existing crosswalk and **motion-activated ped signal (yellow blinkers)**
- Proceed eastward to I-295 on northbound on-ramp (for autos traveling west on FRP)
- Turn left, utilize **crosswalk** across eastbound FRP to **pedestrian refuge** within existing median with **ADA tip-down ramps and offset crossing** (to encourage visual contact with westbound autos)

- Proceed across westbound FRP via **crosswalk to north edge of FRP**
- Turn right and proceed eastward along **12' paved multi-use trail through Avesta property at terminus of Frederic Street** (as shown on Plan 1)
- Turn left at existing sidewalk at junction of terminus of existing multi-use trail from FRP and the “wye” underpass
- *Bicyclists utilize Frederic Street northbound travel lane*
- Proceed northwards along existing sidewalk to intersection of Congress Street (as shown on Plan 2)
- Proceed across Congress Street via existing crosswalk with ped-activated button (yellow blinkers above roadway)
- *As an alternate route Bicyclists may turn right onto Congress Street bike lane and proceed to Valley Street shared roadway to access Park Avenue*
- Proceed northward along existing Marston Street sidewalk
- *Bicyclists share Marston Street travel lane. Shared roadway signage and striping*
- Turn right onto Park Avenue using existing sidewalk (as shown on Plan 3)
- *Bicyclists utilize single- direction 6-foot separated bike lane*
- Proceed east under mainline rail overpass with **bollard style pedestrian lighting and other aesthetic and safety improvements to be determined**
- Proceed east (as shown on Plan 4) to the junction of Park Avenue and St. John’s Street via existing crosswalk to eastern edge of St. John’s Street. **Remove slip lane for northbound autos turning right onto Park Avenue eastbound** (not shown)
- *Bicyclists leave separated bike lane to cross St. John’s Street to eastbound 5-foot bike lane along Park Avenue Use bicyclist-activated signal to gain bike phase*
- Proceed east along existing sidewalk to intersection of Park Avenue and Deering Avenue (as shown on Plan 5)
- As an alternate route bicyclists and pedestrians may turn left into the Portland Sports Complex to follow an **upgraded pedestrian and bicycle facility connecting Park Avenue to Deering Avenue via the Sports Complex road network**
- Cross Deering Avenue via existing crosswalk with ped phase
- Cross Park Avenue via existing crosswalk with concurrent pedestrian phase
- *Bicyclists merge from bike lane into left-turn lane, and onto Deering Avenue westbound. Sharrow markings in left turn lane to alert drivers*
- Turn left onto existing sidewalk along eastern edge of Deering Avenue
- Turn right onto existing pedestrian trail into Deering Oaks
- Bicyclists turn right and enter Deering Oaks via an existing trail.

In general the pedestrian infrastructure along the route already exists, though several improvements are noted above.

Much of the bicycle infrastructure already exists, though new on-street markings (“sharrows” and/or bike lanes) will be required in some locations. Additionally sections along Park Avenue will require construction of separated bike lanes.

The most significant and costly components of infrastructure required to construct the route described above would be the installation of appropriate barriers for the contra-flow bicycle lane along Park Avenue, and intersection reconfigurations at Park/St. John’s and Park/Deering Ave. Costs for these components are detailed in Section V of this report.

One of the primary goals of creating a *distinct* route for pedestrians and bicyclists between the Portland Transportation Center and Deering Oaks is to provide a safe, direct, and logical path for people to follow when traveling between these two locations, or elsewhere along the route. Though there are currently other ways to travel between these two locations, there are significant shortcomings with the existing conditions. It is for this reason that this study has been undertaken.

A. Crossing of the Fore River Parkway

The Fore River Parkway is a two lane road which connects West Commercial Street and Veteran’s Bridge to the Portland Transportation Center (PTC) and Exit 5 of I-295. The parkway is officially designated a Limited Access Principal Arterial and is posted with a 40 mph speed limit. The Priority Route requires pedestrians and bicyclists leaving the PTC to cross the parkway to get to Deering Oaks.

There are currently two at grade crossings of the Fore River Parkway for the new Mercy Hospital development. One crossing is signalized and the second is un-signalized. Additionally, people currently cross the fore River Parkway at-grade at Fredric Street as indicated by the wear path through the service gate at the end of Fredric Street. This service gate is apparently intended for access to electrical equipment.

Currently the only legal way for a pedestrian or bicyclist to reach Frederic Street from the Fore River Parkway is via the wye underpass of the FRP. At several public meetings held by Portland Trails, and through other community outreach efforts it has been made clear that this underpass is not perceived as safe by some residents, and is sometimes avoided due to these concerns. People cited lack of visibility, nearby homeless encampments, proximity to the correctional facility, and lack of “escape routes” as reasons for avoiding this facility. Many people noted that they would not be comfortable using the underpass at night. Residents did cite its usefulness as an alternate route, for bicyclists, and as a potential future route connecting to a new rail/trail. **Because the underpass is not suitable for all users at all times; and because many users are currently choosing to avoid this route by crossing the FRP at-grade, we conclude that an at-grade crossing of the Parkway is necessary for the Priority Route to provide a viable connection between the PTC and Deering Oaks.** Several options to achieve this goal are outlined below.

In preparation for this report, Portland Trails and Oak Engineers met with the Maine Department of Transportation (MaineDOT), as well as the City of Portland’s Crosswalk Committee to discuss options for an at-grade crossing of the Parkway at Fredric Street. Both MaineDOT and the Crosswalk Committee expressed a desire to facilitate the Libbytown Trail Link and indicated that providing a safe crossing while minimizing delays to parkway traffic will be critical. The following three crossing options were developed in large part from the productive dialog at these meetings.

All three options are shown on Plan 1 and summarized in the table below. *Note that these options assume a common starting point at the terminus of Frederic Street, proceeding towards the Portland Transportation Center (PTC).*



Looking Across the Fore River Parkway from the Fore River Apartments

Option 1: Terminus of Fredric Street

Users would transition from Fredric Street to a multi-use trail by way of a pedestrian peninsula located in the parking area of the Fore River Apartments as shown in Plan 1. Users would then continue westerly along the Parkway, for approximately 70 feet, on a newly constructed multi-use trail section and cross the parkway through the existing grassed median at the beginning of the I-295 northbound onramp for eastbound parkway traffic.

The 15-foot median provides a substantial queuing area for pedestrians and bicycles. This median also provides an opportunity to construct an offset crossing. The offset crossing encourages pedestrians to turn and look to the right into oncoming traffic before beginning the second leg of the crossing, minimizing conflicts with vehicles.

This option is further away from the decision point for eastbound vehicles to exit the parkway onto I-295 North than Option 2. This additional distance has the potential to provide drivers with more time to focus on the upcoming crossing.

This Option is the most direct route, particularly for eastbound users. A crossing in this location would be visually connected to Fredric Street and likely be the most intuitive crossing point for trail users. Additionally, this option is the least expensive.

This location is un-signalized and the City has no plans to install a traffic signal. Additionally, pedestrians crossing eastbound parkway traffic will also have to watch for turning left from the I-295 off-ramp.

Option 2: Terminus of the Exit 5 Off-ramp for Eastbound Parkway Traffic

Users would exit Fredric Street as in Option 1 and continue westerly along the FRP for an additional 110-feet, cross the northbound I-295 off-ramp for eastbound parkway traffic, then immediately turn left and cross the parkway via a new crosswalk to connect with the existing Fore River Parkway Trail.

This option segregates the crossings of eastbound parkway traffic and I-295 off-ramp traffic which has the potential to reduce conflicts with vehicles. Additionally, the parkway has been designed for a signal in this location should future traffic conditions warrant a signal.

The median at this location only 4-feet wide and may not provide an adequate refuge for cyclists. Additionally, users traveling eastbound on the parkway would need to travel additional 200 feet to cross at this location.

Option 3: Intersection of the Parkway and the Access Road to the Portland Transportation Center

Users would exit Fredric Street as in Option 1 and continue westerly along the FRP under I-295 for a distance of 1,200-feet and cross the Fore River Parkway at the signalized intersection of the Fore River Parkway and the access road to the Portland Transportation Center (Thompson's Point Road).

This option provides a signalized crossing which has the potential to minimize conflicts with vehicles. Additionally, this option offers the potential for collaboration and cost sharing with an existing PACTS proposal to *Improve Trail and Transit Connections at I-295, Exit 5*.

Option 3 is not a viable option for users wishing to travel eastbound from Fredric Street, and would also be significantly more expensive than Options 1 or 2. Additionally, Option 3 would require crossing the I-295 off-ramp at a skewed angle. Vehicle speeds are typically higher on off-ramps than onramps which may increase the likelihood of vehicle conflicts.

Summary of Options for Crossing the Fore River Parkway

Crossing Option	Advantages	Disadvantages
Option 1: Terminus of Fredric Street	<ul style="list-style-type: none"> - Most direct route - Wide median - Further away from northbound onramp than Option 2 - Visual Connection to Priority Route - Lowest cost 	<ul style="list-style-type: none"> - Un-signalized location - Potential conflict with left turning traffic
Option 2: Terminus of the Exit 5 Offramp for Eastbound Parkway Traffic	<ul style="list-style-type: none"> - Potential future signalization - Minimizes conflict with left turning traffic 	<ul style="list-style-type: none"> - Narrow Median - Not as direct for eastbound pedestrians
Option 3: Intersection of the Parkway and the Access Road to the Portland Transportation Center	<ul style="list-style-type: none"> - Signalized location - Potential for coordination with pedestrian improvements proposed for the PTC 	<ul style="list-style-type: none"> - Higher cost due to construction requirements - Not a viable option for eastbound pedestrians - Users must cross I-295 off-ramp at a skewed angle - May not be well suited for bicycles

Recommendations

We recommend that the City move forward with **Option 1**. The wide median combined with the direct and intuitive route outweigh the potential conflict with eastbound parkway traffic turning left from the I-295 off-ramp.

MaineDOT indicated that an unsignalized crossing of the Parkway would likely necessitate a reduction of the speed limit from 40mph to 35mph. MDOT also indicated that this speed reduction and the installation of a crossing were seen as potentially desirable actions and warranted further study. We recommend that the City work with MaineDOT to **reduce the speed limit on the Fore River Parkway to 35mph**.

Future signalization: if, in the future, traffic conditions warrant a signal at the location of Option 2; the crossing could be relocated as shown in Option 2. It should be noted that the majority of infrastructure required for Option 1 could be reused to facilitate Option 2.

We recommend that, in addition to Option 1, the City should investigate the possibility of collaborating and cost-sharing with the existing PACTS proposal to *Improve Trail and Transit Connections at I-295, Exit 5*. This opportunity could enhance pedestrian connectivity by providing a sidewalk along the northern edge of the Parkway, as described in Option 3.

B. Fredric Street

Existing Conditions

Fredric Street is a dead end road running from the parcel of land encompassing the Fore River Apartments to Congress Street as shown on Plan 1. Fredric Street has two travel lanes with on-street parking along the west side. As typical for a dead end street, vehicle traffic was observed to be light and speeds were observed to be slow. Additionally, youths were observed to be playing street hockey with minimal interruption from vehicular traffic

The right of way width on Fredric Street is 50 feet and the curb to curb width is 29 feet. See Plans 1 & 2 as well as Section 1.



Street Hockey on Frederic Street

Proposed Design

The existing conditions on Fredric Street are conducive to multimodal traffic and only minor changes are proposed here. Due to the light traffic and slow speeds we propose to **create shared roadway conditions on Fredric Street**. On a typical shared roadway, bicycles are encouraged to use the full travel lane through pavement markings, striping and signage. Because of very low volumes and speeds on Frederic Street it may not be necessary to include pavement markings, though wayfinding and “share the road” signage would likely be desirable.

Pedestrians will continue to use the existing sidewalks on both sides of Fredric Street. Bicycles and automobiles will share the two travel lanes and on-street parking will be maintained.

Accessing Frederic Street

In order to reach the Frederic Street Right of Way from the Fore River Parkway one must cross the Fore River Apartments property owned by Avesta Housing. Avesta has

indicated in a letter to Portland Trails that they have an obligation to the City to provide an easement for a bicycle-pedestrian connection through their property. Additionally, they have indicated a desire to partner with the City and Portland Trails facilitate this connection as it will benefit the residents of the Fore River Apartments as well as the Greater Portland Community.

Crossing Congress Street

Existing Conditions

The section of Congress Street between Park Avenue terminus and St. John's Street is a two-lane, one-way road heading east. There are on and off-ramps accessing I-295. The off-ramp merges with Congress Street with a wide radius, allowing autos to maintain a fairly high rate of speed. The remainder of the road is characterized by high-speed auto traffic, limited sight lines due to curvature of the road, and vehicles making significant weaving movements. Lane widths are up to 16', and the curb to curb width is approximately 40'.



Congress Street Traffic: Looking from the I-295 interchange towards Marston Street.

Analysis

Speed is the most significant challenge on this section of road. Due to vehicles exiting I-295, the two-lane, one-way configuration, and the wide roadway width, there are few cues for drivers to reduce their speed. Neighbors cite this area as one of the most intimidating and dangerous parts of Libbytown for bicycles and pedestrians. For the Priority Route the immediate concern is the crossing of Congress Street to access Marston Street. There is an existing crosswalk with a ped-activated yellow blinker above the roadway. Despite these facilities, residents cited this crossing as dangerous.

Proposed Design

There are many ways to reduce speeds on this section of roadway, and further analysis should be undertaken to consider which of these will be most productive and cost-effective. Ultimately **re-establishment of two-way traffic should be considered**. For this reason, we do not recommend changing the curb to curb width of the road at this time. In regards to the Priority Route, we recommend **the installation of curb extensions at the existing crosswalk**. As vehicles approach the crosswalk further visual cues should be provided to encourage slower speeds. West of Marston Street, **travel lane widths to 11' should be made by striping and curb extensions at Lowell Street**. **Cars exiting I-295 should be required to come to a stop (or slow to less than 10mph) before merging with traffic on Congress Street, and signage indicating neighborhood speeds should be installed.**

It should be noted that METRO has expressed a preference for an 11.5 foot minimum travel lane width on all bus routes. METRO stakeholders should be involved in the design development process so the geometric needs for buses can be balanced with the need to calm traffic.

Alternate Route

At this point more experienced bicyclists may choose to turn right onto Congress Street, where the City plans to install a **5 foot bike lane** inbound to St. John's Street. Merging with traffic at St. John's Street, bicyclists may turn left onto either St. John's, or Valley Street to access Park Avenue. Despite a slight elevation gain, Valley Street may be the preferable route due to dangerous conditions on St. John's Street.

C. Marston Street

Existing Conditions

Marston Street connects Congress Street to Park Avenue. Vehicular traffic is one way from Congress to Park. Marston Street appears to have been re-designed at some point as an extension of the I-295/Congress Street interchange. The southern end of Marston Street (Plan 2) has a slip-lane for traffic exiting Congress Street, while the northern end (Plan 3) has a curbed peninsula with a large radius intended to funnel traffic onto Park Avenue. On-street parking is generally allowed on the east side of Marston Street. Although gathering traffic data is beyond the scope of this report, vehicle traffic was observed to be moderate and speeds in the range of 20 to 25 mph. It was also observed that the Hood milk company trucks use Marston Street with some regularity to access their distribution facility on the north side of Park Avenue.

Marston Street-*south* has a 65-foot right of way and a 28-foot curb to curb width between Congress Street and Burnham Street (see Typical Section 2 and Plan 2); while Marston Street-*north* has a 47-foot right of way and a 22-foot curb to curb width between Burnham Street and Park Avenue (See Plan 3 and Typical Section 3).



Marston Street Looking Towards Deering Oaks

Analysis

The most challenging aspects of the Marston Street design are providing for two way bicycle traffic on a one way street and maintaining on street parking.

The option of routing south bound bicycles through Lowell Street was considered as a way to eliminate the need for two way bike traffic on Marston Street. This option was not pursued because of the potential for bicycle/automobile conflicts resulting from the need for bicycles to cross two lanes of Congress Street traffic in close proximity to the I-295/Congress Street off-ramp. Also, this route is somewhat circuitous and would require two additional turns. We also considered separated bike lanes along Marston Street, but based on public comment and discussions with the City, we determined that a two-way street would be of greater benefit to multi-modal connectivity.

The Hood milk company will be an important stakeholder in any redesign efforts. Hood, La Quinta and other area residents, as well as MDOT should be engaged early in the public process.

Proposed Design

We recommend Marston Street be re-configured as a typical two-way street.

“Sharrows”¹ should be used to provide on-street bicycle facilities in both directions on Marston Street. Using sharrows instead of standard bike lanes would minimize the required curb to curb width, and therefore impervious surface, costs and impacts.

¹ See “Sharrows” description in section X. Once consideration for bike lanes versus sharrows on Marston Street is the likelihood that large trucks (such as Hood trucks in the area) will likely stray into a bike lane with some regularity. This may be a reason to consider sharrows, which will allow for a wider, shared lane, and perhaps a better understanding that both autos and bicycles will be using the lane.



Example of a “Sharrows” stencil on a two lane road

Additionally a sidewalk should be constructed on the west side of Marston Street between Congress and Burnham Street where none exists. Also, the curb radius at the north corner of Congress and Marston is proposed to be reduced to shorten the crossing distance for pedestrians, though the effective radius for turning trucks would be maintained. A tip-down ramp opposite Cherry Street is proposed for pedestrians wishing to access the sidewalk on the west side of Marston.

The sidewalk and curb on the on the west side of Marston Street between Burnham Street and Park Avenue will need to be reconstructed further to the west to provide the necessary width.

It appears that the curb radius on the west side of the Park/Marston intersection could be reduced to shorten the crossing distance for pedestrians. We recommend contacting Hood and other commercial users when design development begins so that we can develop roadway geometry that meets the needs of all users. Additionally, reconfiguring the geometry of Marston Street may Require MDOT approval due to the potential for impacts on the I-295/Congress Street interchange.

D. Park Avenue west (one-way / western section)

Existing Conditions

Park Avenue, between its terminus at Congress Street and St. John’s Street, is a two-lane, one-way street for autos traveling west. There is a 5’ bike lane along this entire length of road. Because the section of Congress Street running parallel to Park Avenue is also one-way in the opposite direction (eastbound), all westbound traffic from Congress Street must divert, via St. John’s Street, to this stretch of Park Avenue. For this reason this section of Park Avenue carries significant volumes of traffic.

This section of Park Avenue is characterized by a national hotel chain (La Quinta), a large milk distribution facility (Hood) generating significant truck traffic, and a national

fast food chain (Denny's). There are also several blocks of residences remaining from before the construction of I-295, and an on-ramp to I-295 north. Traffic on Park Avenue is fairly high-speed on this stretch, and there is significant weaving as cars change lanes to access cross streets, and the I-295 on-ramp.

The right of way width is 66-feet, and the curb to curb width is 43' as shown on Plan 3 and Typical Section 4



Park Avenue west - Looking towards Deering Oaks

Analysis

Park Avenue as a one-way street presents challenges for bicyclists traveling east towards Deering Oaks, as they would be riding opposite the direction of auto traffic. Installation of a two-way multi-use path was considered as a solution, but there are inherent problems of how multi-use paths interface with intersections and crossings. In this case the interface with two-way traffic on Park Avenue at the intersection of St. John's Street was deemed problematic.

There is sufficient sidewalk width for pedestrians traveling in both directions, though the streetscape needs improvement.

Proposed Design

Create a separated bike lane for eastbound bicycle traffic. This connection should be achieved with limited permanent infrastructure changes, to allow for future conversion of Park Avenue to a two-way street. Installation of an appropriate physical barrier will need to meet MaineDOT and other requirements for contra-flow bicycle facilities. Based on

preliminary research, a wide range of barrier treatments have been utilized around the country, as can be seen in the images below. Interruptions and terminus points of the barrier will require appropriate end treatments. If possible the two existing curb-cuts in this road section (La Quinta's secondary driveway, and a utility station access drive) should be eliminated or controlled.



Striping only in Minneapolis, MN (bike lane left of bus only lane)



Plastic delineators in Santa Cruz, CA



Raised Median in Madison, WI



Concrete barrier with railing in NYC

Move curb to retain on-street parking. In order to retain existing on street parking spaces; it will likely be necessary to reset the existing curb and expand the shoulder in front of the Hood facility.

Install curb extensions and “jug-handle” style bicycle access at crosswalk to Marston Street. In addition to shortening the crossing distance and providing better sight lines for pedestrians crossing Park Avenue, curb-extensions have the potential to slow traffic moving along Park Avenue, right at the point where there is currently a noticeable increase in speed. The jug-handle design has been implemented in other cities where bicyclists using a bike lane need to cross multiple lanes of traffic to turn onto an adjacent street. The jug-handle allows a bicyclist to depart from the bike lane, and approach the crosswalk perpendicular to traffic. Other cyclists may choose to simply merge into the left lane and turn onto Marston Street.

Install pedestrian signalization at crosswalk. In addition to curb extensions, we recommend installing pedestrian signalization at Marston Street for the existing crosswalk. This could be similar to the pedestrian-activated blinking yellow lights currently located on Congress Street at the other end of Marston Street.

E. Park Avenue from Railroad Underpass to intersection of St. John's *Existing Conditions*

Park Avenue passes under two bridges; the active multi-track Pan Am Maine Line bridge and the defunct Union Branch rail trestle. The Maine Line bridge is approximately 100 feet wide solid concrete, with supporting concrete posts between the travel lanes and the sidewalk on both sides. As such it creates a dark and imposing underpass. The sidewalk width between the granite abutments of the mainline bridge and the posts adjacent to the travel lanes is 9 to 10 feet. The trestle bridge is a relatively narrow clear-span, and its steel truss frame allows light to filter through.



Rail underpass looking towards Deering Oaks

The intersection of Park Avenue and St. John's Street is a high-volume location, with most traffic coming north on St. John's Street to turn west onto Park Avenue, followed by traffic heading continuing west from Park Avenue east. There is a slip lane for cars turning right (east) onto Park Avenue.

The right of way width is 66-feet, and the curb to curb width is 42' as shown on Plan 3 and Typical Section 5

Analysis

The Maine Line railroad underpass presents a psychological barrier for bicycles and pedestrians. There is no lighting under the bridge, and it is dark even in the daytime. The supporting posts along the roadway edge and the vertical abutments adjacent to the sidewalk create a narrow, somewhat intimidating passage.

The intersection of Park and St. John's is critical for the success of the primary route. Currently bicyclists ride with traffic through the intersection. The slip lane presents a hazard for both pedestrians and bicyclists heading east on Park Avenue.

Proposed Design

Add lighting and paint to underpass area. By adding pedestrian scaled bollard-style lighting under the bridge (as shown in Typical Section 5), and painting the bridge "ceiling" and posts, (perhaps allowing a local artist to paint a mural), this passage will become safer and more welcoming. The lane structure will be similar to the lane structure described above for Park Avenue west, but without the on street parking.

Improve signalization at Park Avenue / St. John's Street intersection. The signal phasing for the intersection of Park Avenue and Saint John's Street would need to be adjusted to allow bicycles to travel eastbound on Park Avenue across this intersection. A complete analysis of this intersection is beyond the scope of this report; however we offer the following suggestions: The Phase for eastbound bicycle traffic could potentially be concurrent with westbound Park Avenue traffic. A "leading bicycle interval" may help to reduce the potential for conflicts with westbound Park Avenue traffic turning left. Depending on the existing phasing, it may make sense to consider a bicycle phase concurrent with parallel pedestrian traffic. The bicycle phase could potentially be activated by video detectors installed an appropriate distance from the intersection, or manually by the bicyclist via a push button mounted at the bicycle stop bar. Such phasing would minimize delays for bicycles and motorists alike.

The slip lane for traffic turning right from Saint John Street onto Park Ave should be eliminated in order to improve pedestrian and bicycle safety.

F. Park Avenue east (two way or eastern section)

Existing Conditions

The section of Park Avenue between St. John's and Deering Avenue at the entrance to Deering Oaks is a wide, two-way road with 2 travel lanes in each direction. The road is characterized by the presence of the City of Portland sports complex, the King Middle School, and several large private institutions, as well as a number of multi-story mixed use structures along the southern side of the road.

This stretch of Park Avenue is markedly different in form and function than the one-way section of road described above. During events at the sporting complex the area is bustle of activity with thousands of pedestrians and vehicles sharing the Right of Way. Notably, during large events such as baseball games when the road is used at its peak volume, the right westbound travel lane is closed for through-traffic for use by busses and vehicular drop-offs. This may indicate that the number of travel lanes is in excess of that needed to efficiently move auto traffic. The south side of the road and the connecting street network is largely residential, though several small businesses occupy the ground floor along Park Avenue.



Pedestrians at the Portland Expo

The sports complex consists of a large campus which includes Hadlock Field (home of the Portland Sea Dogs minor league baseball franchise), the Portland Expo which hosts sporting and other events year-round, Fitzpatrick Stadium which hosts track and field and football events, and the Portland Ice Arena. There are several interconnected parking lots and an internal road and sidewalk network connecting to King Middle School and Deering Avenue, directly across from the main entrance to Deering Oaks.

The intersection of Park Avenue and Deering Avenue is an extremely busy location fronted by the King Middle School, the corner of Deering Oaks, and two large parking lots on the south side. The heavy volume of traffic, coupled with the presence of a middle school, and a nearby institute for the blind make this intersection a high-priority for pedestrian improvements. The intersection is already signed as “No Turn on Red”, and has audible pedestrian phase crosswalk signals.

Curb to curb width is 66’, and ROW is 98’ as shown in Plans 4 and 5, and Section 6

Analysis

Park Avenue east of St. John’s Street has many positive attributes as described elsewhere in this report. The wide Right of Way allows for flexibility in how the road is designed, and even on how the lanes function on a daily basis; such as allowing for use of the rightmost lane as a drop-off area during events at the sports complex. There is sufficient sidewalk width for pedestrians traveling in both directions, though the streetscape needs improvement. There are no dedicated bicycle facilities on this section of Park Avenue.

The bicycle and pedestrian network within the Sports Complex is not well-defined or inviting. The configuration of the existing road network and parking area within the sports complex focuses on auto movement and storage, which presents challenges to the smooth flow of bicycles or pedestrians through the area.



Intersection of Park Avenue and Deering Street: Looking Towards Deering Oaks

Proposed Design

Re-configure Park Avenue as a two-way street with a median / center turn lane as needed. The addition of a striped 16 foot center turn lane along Park Avenue allows for left turns without impeding through traffic, which in turn increases the effective capacity of the two-lane road. In addition the center turn lane reduces lane changes for cars attempting to maneuver around left-turning vehicles. The center turn lane also mitigates the reduction in vehicle capacity caused by reducing the number of through travel lanes from two in each direction to one in each direction. Creation of this center turn lane provides a location(s) to construct raised medians in the appropriate locations in the future as funding and need allows. These raised medians could act as pedestrian refuges, and be designed to allow for left turn pockets where needed. The interim step of creating striped medians would provide a template for experimentation without installing expensive curbing until the best solution is determined.

Install 5-foot bike lanes in both directions, and create shared roadway conditions at intersections. The addition of typical 5-foot bike lanes in both directions will enhance the safety of bicyclists using the corridor and connect to the planned bicycle network on Park Avenue in both directions. Bike lane treatments at intersections vary. At the intersection of Park Avenue and St. John's Street we recommend continuing the bike lane to the intersection. At the intersection of Park Avenue and Deering Avenue we recommend terminating the bike lane in advance of the intersection due to the inherent conflict with the through-right, and through-left lanes. Shared roadway conditions should be created at both intersections. In addition, where bike lanes end, a wider right lane should be provided to prevent bicyclists from being "squeezed" at the intersection. Sharrow markings and signage will be essential to educate drivers and cyclists that they must share the travel lanes when moving through the intersections.

Additionally, we understand that Deering Avenue and Park Avenue between Deering and Forest Avenue are currently being restriped to create bicycle facilities. The final design of

the Libbytown Trail Link should connect to and be compatible with these bicycle facilities.

Provide a welcoming, cohesive pedestrian and bicycle route through the Sports Complex. This large public campus deserves a proper circulation network for those attending events as well as those who may wish to pass through between Park Avenue and Deering Oaks. A wide sidewalk, raised or brightly painted crosswalks, benches, lighting and other amenities should be provided throughout. Public art and thematic elements from Park Avenue should continue through the complex. The road network should be designated and designed as a shared use roadway.

Install curb-extensions at the intersection of Park Avenue and Deering Avenue. By providing curb-extensions or “bump-outs” at appropriate locations this intersection will function more effectively for all users. In addition to shortening crossing distances and improving sight lines for pedestrians, this treatment has the potential to slow auto traffic moving through the intersection.

Construct new path spur and sidewalk tip-down for bicycles exiting Deering Oaks. Bicyclists entering Deering Oaks will use an existing tip-down located on Deering Avenue. In order to provide safe egress from the park, it will be important to provide a route that allows bikes to enter the bike lane system heading in the right direction. It should be clearly indicated through signage that this path is the beginning of the bicycle route to Portland Transportation Center.

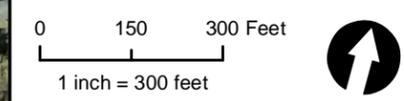
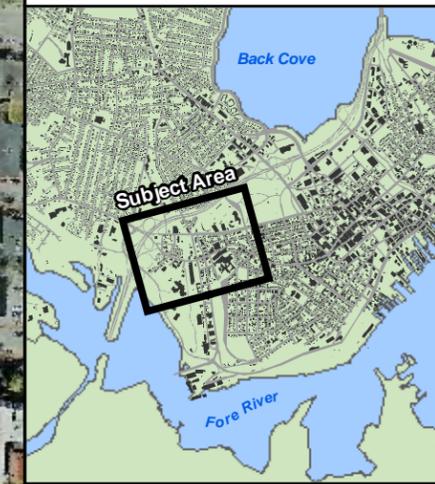
-  Priority Route Alignment Plan Extents
-  Alternate Route



Alternate Route to Deering Oaks Through The Hadlock Field Complex

Priority Route

Alternate Route for Eastbound Cyclists: Congress Street to Valley Street



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056 DATE: 07/09/2009

-  Property Boundary
-  Curb Bumpout
-  Bike Lane
-  Shared Roadway
-  ADA Ramp
-  New Pavement
-  Remove Existing Infrastructure
-  Bike Lane Barrier



0 20 40 Feet
1 inch = 40 feet



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



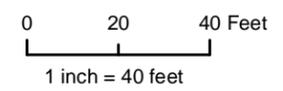
Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056

DATE: 07/09/2009



-  Property Boundary
-  Curb Bumpout
-  Bike Lane
-  Shared Roadway
-  ADA Ramp
-  New Pavement
-  Remove Existing Infrastructure
-  Bike Lane Barrier



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056 DATE: 07/09/2009



-  Property Boundary
-  Curb Bumpout
-  Bike Lane
-  Shared Roadway
-  ADA Ramp
-  New Pavement
-  Remove Existing Infrastructure
-  Bike Lane Barrier



0 20 40 Feet
1 inch = 40 feet



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056

DATE: 07/09/2009



- Property Boundary
- Curb Bumpout
- Bike Lane
- Shared Roadway
- ADA Ramp
- New Pavement
- Remove Existing Infrastructure
- Bike Lane Barrier



0 20 40 Feet
1 inch = 40 feet



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056

DATE: 07/09/2009



-  Property Boundary
-  Curb Bumpout
-  Bike Lane
-  Shared Roadway
-  ADA Ramp
-  New Pavement
-  Remove Existing Infrastructure
-  Bike Lane Barrier



0 20 40 Feet
1 inch = 40 feet



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine



Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056

DATE: 07/09/2009



Typical Section

6

Bike Lane Ends,
Transition to
Sharrows With
Wider Right Lane

Early Stop to Allow
Access For Bike Lane
From Deering Oaks

Curb Bumpout

Reconstruct Curb

Deering Avenue

Connection For West Bound
Bicycle Traffic to Portland
Transportation Center

Park Avenue

Park Avenue

Bike Lane Ends,
Transition to
Sharrows With
Wider Right Lane

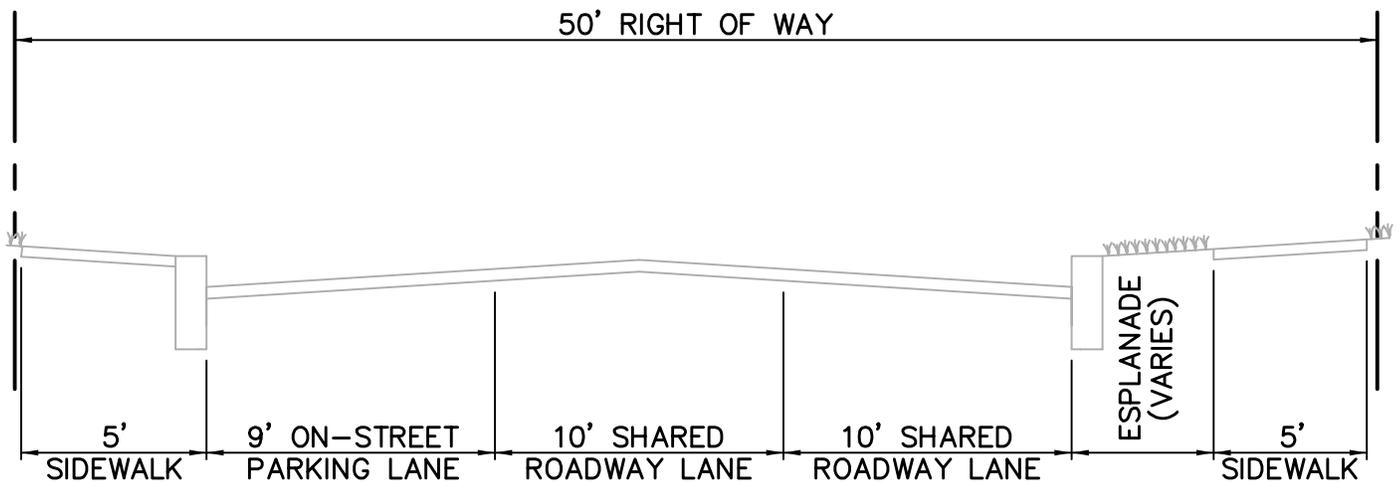
Bike Lane Ends,
Transition to
Sharrows With
Wider Right Lane

Change Left / Straight
Lane to Left Only

Enhance Existing 4-Way
Crossing With Zebra Striped
Crosswalks

Deering Avenue

TYPICAL SECTION 1



LEGEND

- EXISTING INFRASTRUCTURE
- PROPOSED INFRASTRUCTURE

FREDRIC STREET

NOT TO SCALE



400 Commercial Street
Suite 404
Portland, ME 04101
Tel. (207) 772-2004

PREPARED FOR:

CITY OF PORTLAND CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101

DATE: 10-07-09

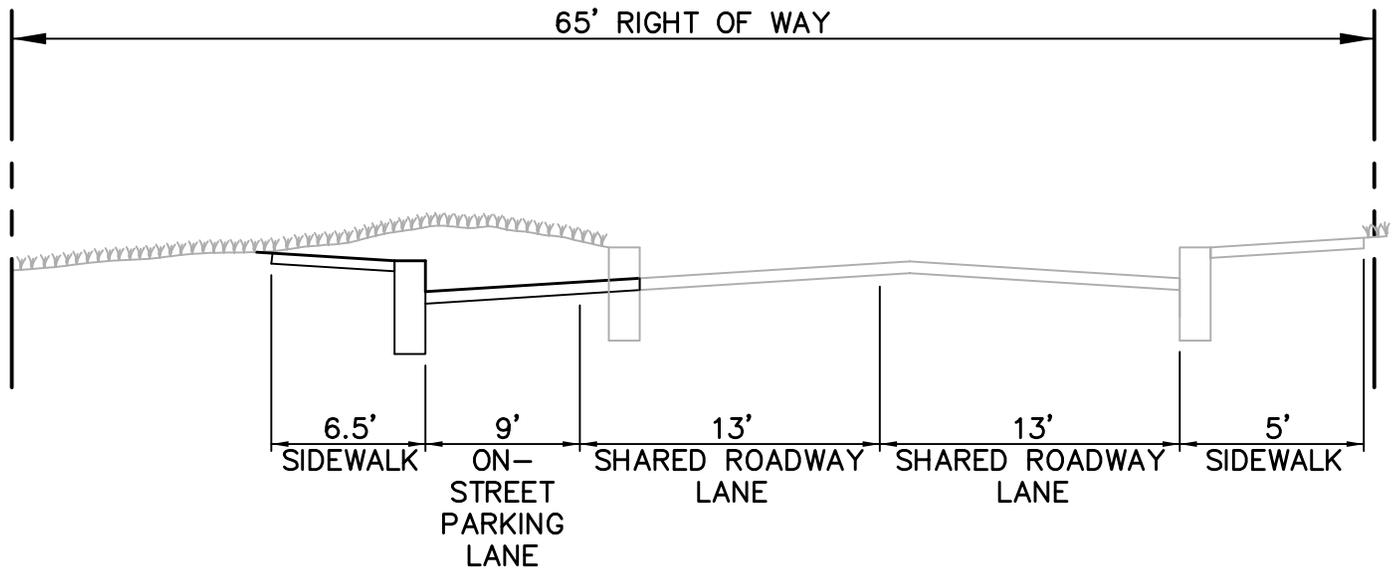
PROJECT: 083056

SECTION: 1

SITE:

LIBBYTOWN TRAIL LINK
FORE RIVER PARKWAY TO DEERING OAKS
PORTLAND, MAINE

TYPICAL SECTION 2



LEGEND

- EXISTING INFRASTRUCTURE
- PROPOSED INFRASTRUCTURE

MARSTON STREET-SOUTH

NOT TO SCALE

(CONGRESS ST TO BURNHAM ST)



400 Commercial Street
Suite 404
Portland, ME 04101
Tel. (207) 772-2004

PREPARED FOR:

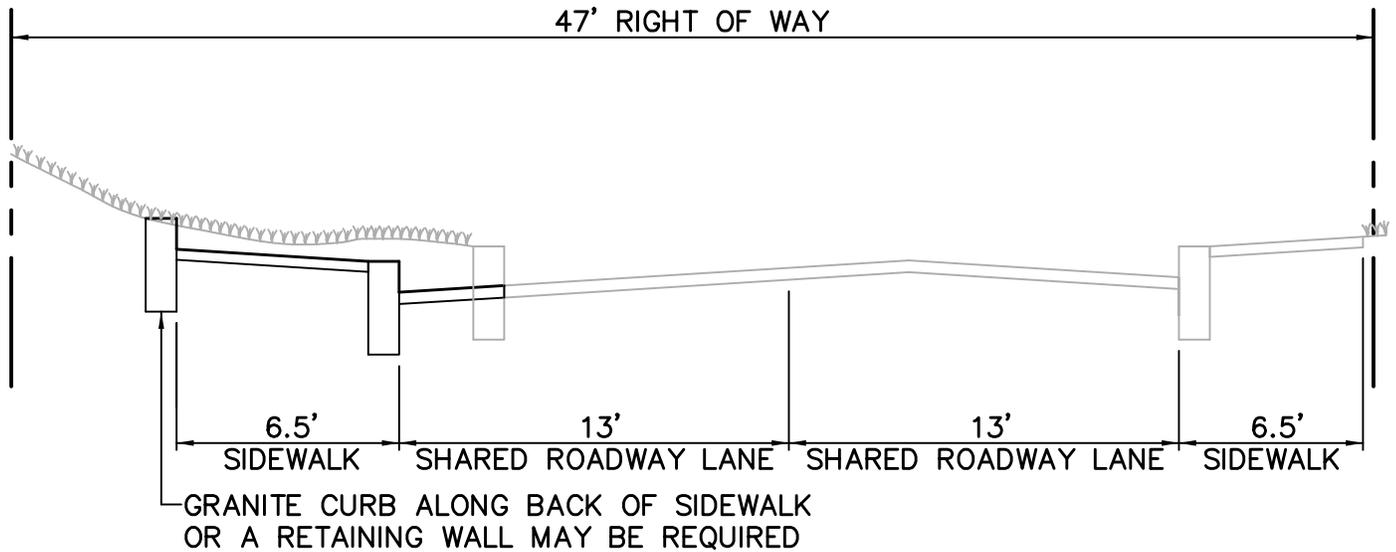
CITY OF PORTLAND CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101

DATE: 10-07-09
PROJECT: 083056
SECTION: 2

SITE:

LIBBYTOWN TRAIL LINK
FORE RIVER PARKWAY TO DEERING OAKS
PORTLAND, MAINE

TYPICAL SECTION 3



LEGEND

- EXISTING INFRASTRUCTURE
- - - - PROPOSED INFRASTRUCTURE

MARSTON STREET-NORTH

NOT TO SCALE

(BURNHAM ST TO PARK AVE)



400 Commercial Street
Suite 404
Portland, ME 04101
Tel. (207) 772-2004

PREPARED FOR:

CITY OF PORTLAND CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101

DATE: 10-07-09

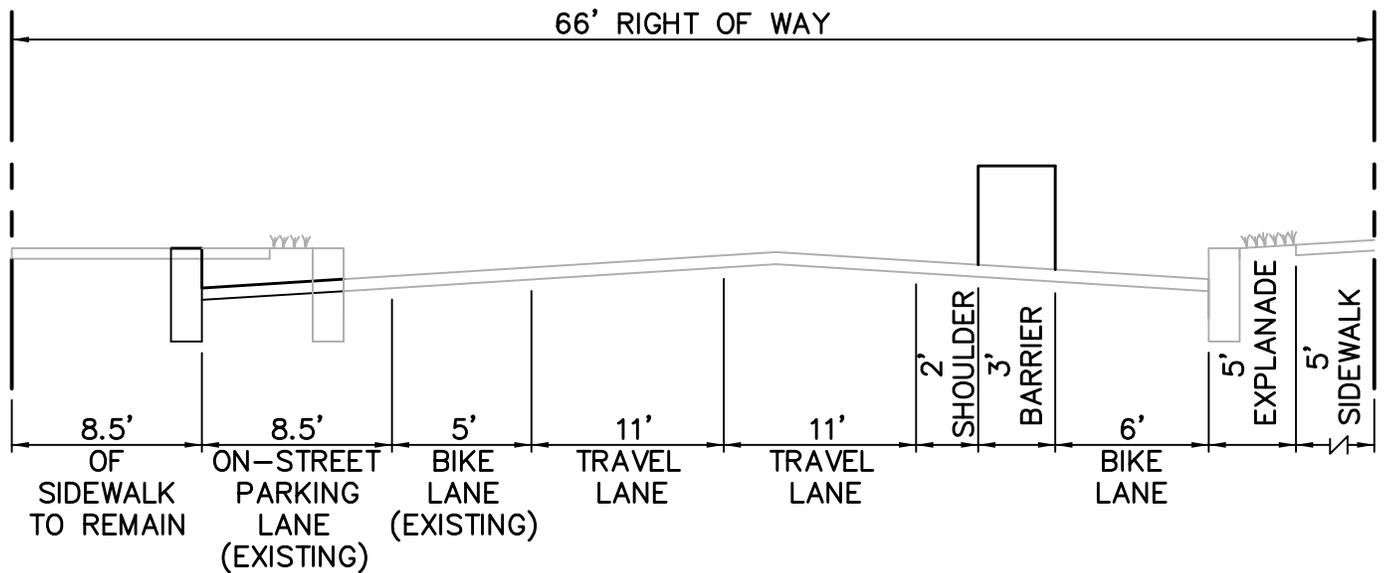
PROJECT: 083056

SECTION: 3

SITE:

LIBBYTOWN TRAIL LINK
FORE RIVER PARKWAY TO DEERING OAKS
PORTLAND, MAINE

TYPICAL SECTION 4



LEGEND

- EXISTING INFRASTRUCTURE
- PROPOSED INFRASTRUCTURE

PARK AVENUE-WEST

NOT TO SCALE (MARSTON ST TO ST JOHN INTERSECTION)



400 Commercial Street
Suite 404
Portland, ME 04101
Tel. (207) 772-2004

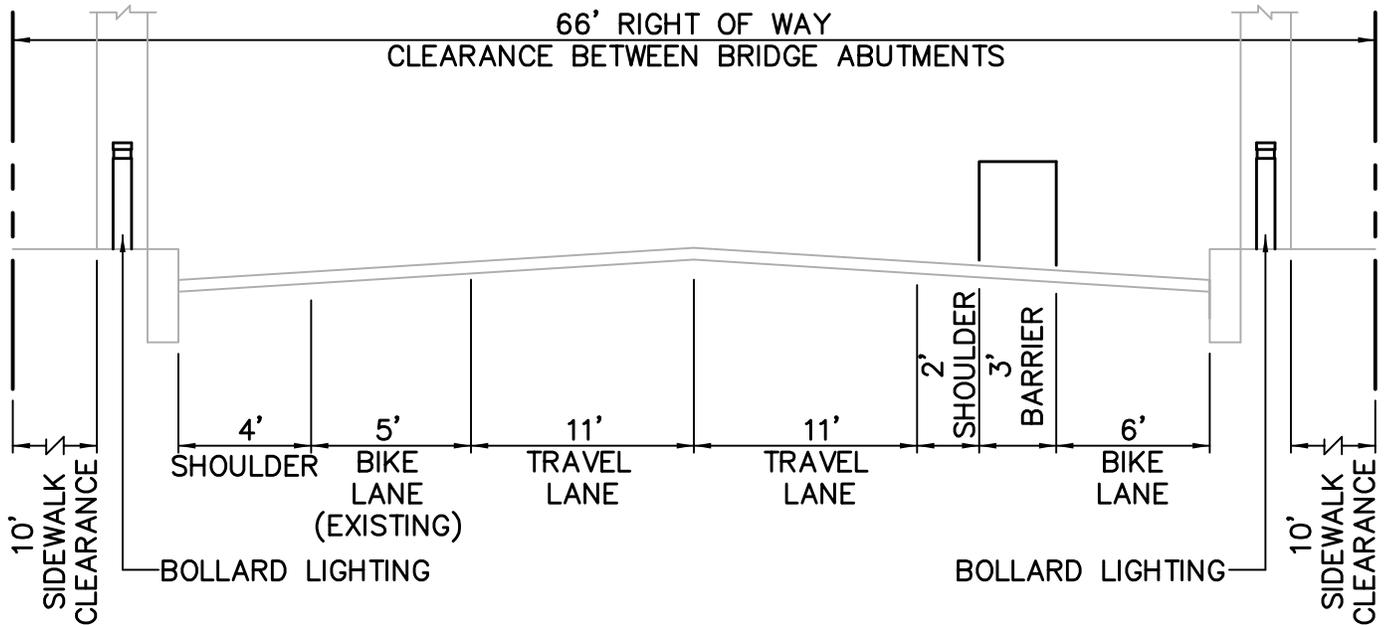
PREPARED FOR:

CITY OF PORTLAND CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101

DATE: 10-07-09
PROJECT: 083056
SECTION: 4

SITE:
LIBBYTOWN TRAIL LINK
FORE RIVER PARKWAY TO DEERING OAKS
PORTLAND, MAINE

TYPICAL SECTION 5



LEGEND

- EXISTING INFRASTRUCTURE
- - - - PROPOSED INFRASTRUCTURE

PARK AVENUE AT RAIL UNDERPASS

NOT TO SCALE



400 Commercial Street
Suite 404
Portland, ME 04101
Tel. (207) 772-2004

PREPARED FOR:

CITY OF PORTLAND CITY HALL
389 CONGRESS STREET
PORTLAND, MAINE 04101

DATE: 10-07-09
PROJECT: 083056
SECTION: 5

SITE:
LIBBYTOWN TRAIL LINK
FORE RIVER PARKWAY TO DEERING OAKS
PORTLAND, MAINE

V. Opinion of Probable Cost

Based on the concepts and ideas presented in this report, the cost to design and construct the Primary Route for the Libbytown Trail Link will likely be approximately \$537,000. This opinion of probable cost is based on a 25% contingency and 10% design cost. The following table breaks down the project costs by section and an itemized cost estimate can be found in Appendix D.

It should be noted that, based on comments from the City and PACTS on the draft design, certain changes were made to the concept design that are not reflected in this cost estimate. The option of a two-way Marston Street eliminates the need for 600 feet of barrier for a separated bike lane. Additionally, the report now recommends a less expensive barrier than the concrete planters originally proposed. A two way Marston Street with on street parking will, however, will require additional pavement and curbing. Also, curb extensions and pedestrian actuated signals are proposed at various intersections to calm traffic.

In general, we believe that the increases and decreases in cost from these design changes will in large part balance each other such that the cost of the project will be roughly similar. However, due to uncertainties, the contingency will be increased from 15% to 25%.

These changes will greatly improve the Libbytown Trail Link as well as bicycle/pedestrian connectivity and safety throughout the Libbytown area.

Libbytown Trail Link DRAFT Summary Estimated of Costs by Section

Section	Description	Cost
1	Fore River Parkway Crossing (Option 1)	\$40,096.88
2	Fredric Street	\$8,951.25
3	Marston Street	\$157,300.50
4	Park Avenue West (one way road)	\$207,102.53
5	Park Avenue East (two way road)	\$74,166.75
	Total:	\$487,617.90
	Design Cost at 10%:	\$48,761.79
	Grand Total:	\$536,379.69

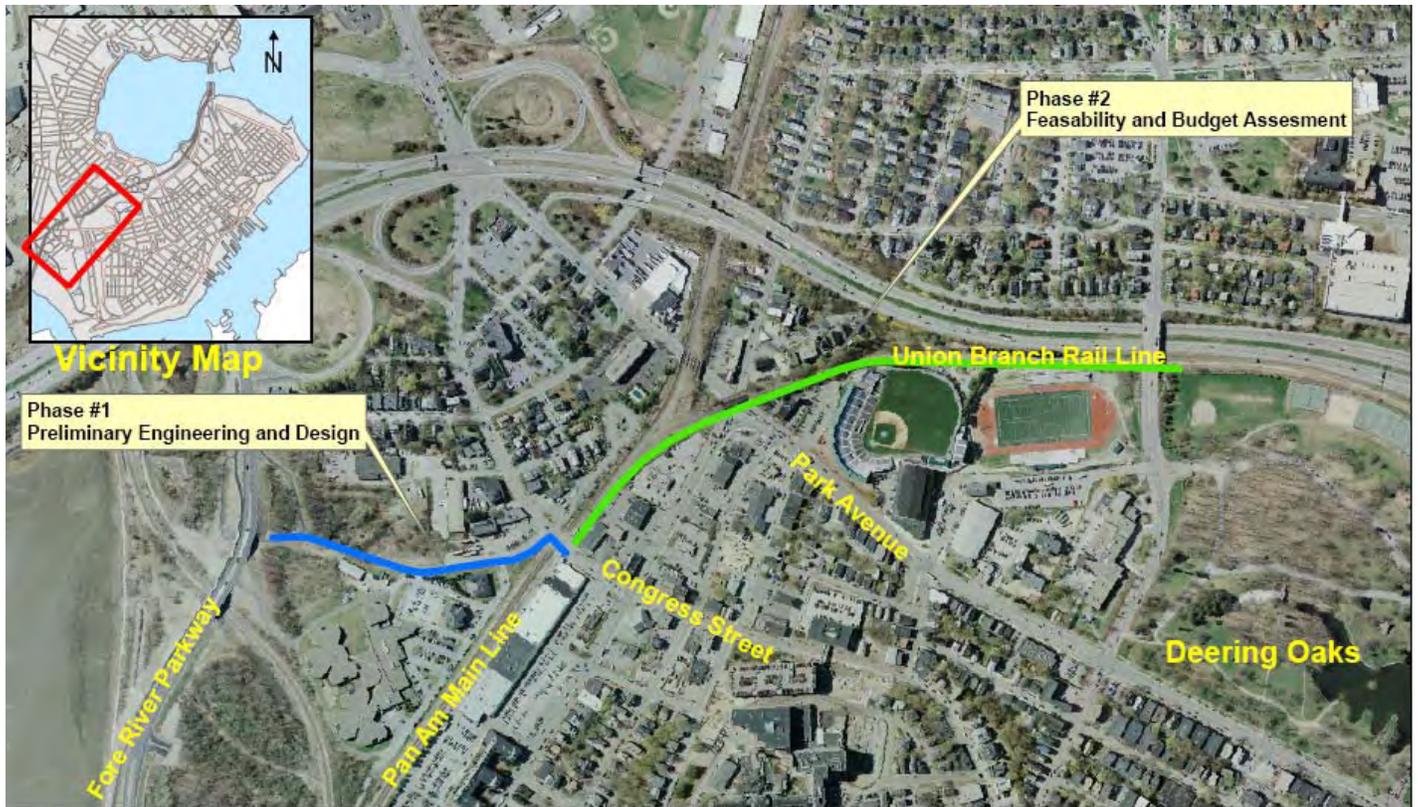
VI. Rail Corridor Analysis

Connecting the Portland Transportation Center to Deering Oaks via the Mainline and Union Branch Rail Corridors

The original scope of this study was to investigate the feasibility of constructing an off-road, multi-use trail between the Fore River Parkway and Deering Oaks. Though we have recommended the on-street route as the priority, it is still desirable to complete an off-road option. These two routes are not redundant for the reasons described above, and will serve different users in different ways. Though many trips will only use a portion of this route, depending on the origin and destination, we will describe a specific route from the perspective of a visitor, perhaps arriving to Portland by train and walking to a festival at Deering Oaks.

Description of Route

- Leaving Portland Transportation Center, turn right onto **existing** Fore River Parkway (FRP) multi-use trail
- Utilize **existing** “wye” rail underpass to connect to County-owned land adjacent to the Cumberland County Jail property
- Follow **new 12’ wide multi-use trail** (to be constructed in conjunction with rail expansion project)
- Connect to **new 12’ wide multi-use trail** along County Way, to Congress Street
- Travel approximately 400’ east along Congress Street (see options below)
 - **new 12’ wide multi-use trail** on south (inbound) side of road
 - existing sidewalks and **new bike lanes** (outbound lane separated due to one-way auto traffic)
- Cross Congress Street at **new mid-block crosswalk**
- Travel along a **new 12’ wide multi-use trail** - need easement or license from Pan-Am Rail
- Cross MaineDOT owned trestle over Park Avenue – **retrofit bridge for pedestrian traffic**
- Follow Union Branch rail corridor to Deering Oaks
 - Multiple access points should be provided for safety and ease of use
 - Trail users should have option of either continuing along Union Branch Line or utilizing Deering Oaks road/trail network to reach Forest Avenue and the Bayside Trail.



Libbytown Trail Link

Map produced by the City of Portland
 Planning Division from GIS Workgroup
 2006 data. For study purposes only.
 April 2008

0 125 250 500 750 1,000
 Feet
 Graphic Scale



Rationale for Multi-use Trail

Though this report recommends the on-street option as the priority route, there are many reasons to pursue the off-street option, and the eventual construction of this option is recommended, provided land-use and other logistical issues are resolved. A multi-use trail has many unique qualities that certain segments of the population can appreciate. That said, there are many others who prefer to use the street network for their travel needs. As Portland seeks to expand bicycle and pedestrian options it will be important to recognize the different types of users, which may prefer different facilities.

- Recreational cyclists may prefer to travel off-street, and along scenic corridors when possible.
- Certain commuting cyclists may prefer the rail corridor route as well, as it will allow fairly direct and high-speed travel through congested areas.
- Families with children will likely prefer the off-street option for recreational walking and biking
- Tourists and other visitors may prefer an off-street option linking major scenic or other destinations

- In combination with the Bayside Trail (currently under construction on the Union Branch corridor); this multi-use trail will create an active transportation corridor which has the potential to reduce automotive traffic demands on Portland’s roads. For example, a nurse living in Falmouth could bicycle to work at Mercy Hospital.

Compatibility with Rail

Rail corridors have many advantages that also benefit co-located trails; they are generally as flat and straight as possible, they have fewer intersections and conflict points with the street network, and they are often owned by a single entity, theoretically making acquisition of easements simpler. Though the “wye” has been reserved for future rail expansion, there is not yet a definitive route determined. The Union Branch Line also has been discussed as a possible route for future local or regional rail, though again, no route or timeline is in place.



Newly constructed section of the Mountain Division multi-use trail in Greater Portland

There is some concern that the presence of a trail would preclude the use of the corridor for rail. An often cited rule of thumb is that trails adjacent to active rail lines require one foot of setback for every mile per hour the train will travel. If this corridor were to be considered for high-speed rail this would make co-location unlikely. However, there are other considerations that would likely not preclude co-location:

- High-speed rail would likely be moving slowly through this urban area, particularly from the “wye” to the Maine Line
- A MaineDOT rail policy specifically allows trails within fifteen feet of active rails, and closer with a fence or other barrier, and there are many precedents for co-location in Maine and around the country
- It is likely that any near term rail expansion would accommodate existing trains such as the Downeaster with much slower speeds; any inter-urban or local service would likely be “light rail”, which has different parameters, and generally more tolerance for co-location

A trail can easily be designed around a given rail alignment, but rails have very specific geometric needs, such as minimal grades and large turning radii. Though it is likely the trail and rail could co-locate along this corridor, until the rail plans are established, it would not be prudent to invest significant resources in trail construction. Any future trail alignment through this corridor must explicitly allow for future co-location with rail. Though rail is the priority use in the corridor, an opportunity would be lost if either use were to preclude the other.

Though the realization of a fully developed off-street trail may be a longer term endeavor there are many willing partners who have expressed interest in moving this option forward.

- Representatives from the County have expressed willingness and desire to grant easements, assist in construction and promote the development of this trail.
- Representatives from the Northern New England Passenger Rail Authority (NNEPRA) have expressed a willingness to accommodate a future trail, and in fact, the “wye” underpass of the Fore River Parkway was built specifically with sufficient width to accommodate both the rail and a trail.
- MaineDOT has expressed support for co-location along this corridor.
- The City of Portland has long envisioned a multi-use trail encircling the peninsula
- Portland Trails looks forward to collaborating on the eventual design and construction of this segment of the multi-use corridor
- Many residents of Libbytown have shown enthusiasm for linking to Deering Oaks via a multi-use trail.

Peninsula Loop Trail

In addition to offering an off-road option for the specific trip between the PTC and Deering Oaks, the multi-use corridor would be an extension of an eventual trail encircling the entire Portland peninsula. This trail has been a goal of the City and Portland Trails for many years, beginning with the construction of the Eastern Promenade Trail in the early 1990’s, and continuing with the ongoing construction of the Bayside Trail. Once the Bayside Trail is built to the eastern entrance to Deering Oaks, the Libbytown rail-corridor trail would be the logical extension of a multi-use trail, allowing an off-road connection to the Fore River Parkway multi-use trail, and thus West Commercial Street. A planned West Commercial Street bicycle/pedestrian connection is another ongoing collaborative project between the City, Portland Trails, PACTS and MaineDOT. Though there are no current plans for a multi-use trail along Commercial Street between the

Casco Bay Bridge and the Eastern Prom Trail, this last section of the circum-peninsular route does have excellent pedestrian facilities, and slow moving traffic which does accommodate bicycle traffic well.

Local rail advocates, as well as the operators of the Maine Narrow Gauge Railroad have expressed a desire to work towards a multi-use corridor with rail and trail co-located to move people around the peninsula. Such a corridor has tremendous economic development potential, and could spur Transit Oriented Development, as well as being a marketable commodity in itself.

Recommendations for Implementation

While the priority option is being pursued, the City should continue to advance the effort off a multi-use off-road trail between the PTC and Deering Oaks via the Maine Line and Union Branch Rail Corridors. Specifically, the following steps should be taken to move the project forwards:

- Work with NNEPRA to locate a trail corridor that will not conflict with future rail
- Negotiate an easement from Cumberland County Jail
- Establish location for multi-use trail within County Way ROW
- Design and fund bicycle and pedestrian facilities within Congress Street ROW
- Design and fund Crosswalk at Congress near Maine Line tracks
- Pursue easement from Pan-Am Rail along Maine Line
- Plan for co-location with future train on UB Line
- Establish temporary trail along UB line from Trestle to Deering Oaks

Temporary Trail

The last item; “Establish temporary trail along Union Branch line from Trestle to Deering Oaks” has the potential to be a stand-alone project. The current deed for the section of the UB Line from the trestle to Forest Avenue specifically allows a “recreational trail” along the entire corridor. There are very few physical hurdles to establishing a temporary trail along the UB line, from Park Avenue to Deering Oaks. A MaineDOT owned strip of land on the north side of the rail line, from the corner of St. John’s and Park Avenue would likely allow a 5% grade approach to the UB line. A slightly steeper approach seems to be possible within the MaineDOT ROW on the Park Avenue side of the tracks. Once the elevation of the UB line is achieved, there is a useable surface for a trail all the way to Deering Oaks. Minor removal of vegetation and creation of several perpendicular access points into the Hadlock/Expo complex would improve visibility, access and safety. This temporary trail alignment would serve many users with very little cost, until the rail usage potential is realized, at which point a rail/trail co-location should be pursued.



Existing wear path on Union Branch corridor, Deering Street underpass

It may also be possible to construct a temporary trail from the Fore River Parkway to Congress Street. This route would use the existing wye underpass trail, then follow an existing wear path along the edge of Cumberland County Jail property to connect to County Way and Congress Street. Such a temporary trail would allow the public to legally use an existing route, which is already used informally. Though it may take many years for the uncertain future of these rail corridors to be determined, the public should not have to wait to use these corridors. Portland Trails would likely be a willing partner with the City Department of Public Services to undertake the construction and maintenance of these temporary trails. This type of public/private partnership has many successful precedents in Portland.



County Way looking south towards existing wear path to Fore River Parkway at right of red building

VII. Opportunities and Assets

Despite many challenges to bicycle and pedestrian mobility and connectivity, Libbytown is well positioned to benefit from improvements to the system. Its geographic location at the edge of downtown Portland and its “gateway” function for residents and visitors from the west ensures that system improvements will be well-used. Indeed, despite the many obstacles currently in place, Libbytown currently has a significant bicycle and pedestrian presence. Existing destinations and facilities that will benefit from and contribute to an enhanced bicycle and pedestrian system include the following:

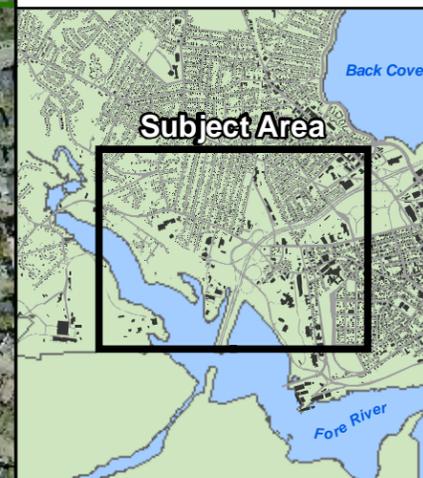
Congress Street

Congress Street is Portland’s “Main Street”. Running from the western town line, through Libbytown, the West End, the Arts District, and Munjoy Hill; Congress Street forms a spine that links the city together. From end to end Congress Street is a linear business district, and provides numerous neighborhoods, including Libbytown, with their identity and their commercial hub. In Libbytown over 20,000 cars a day use “Route 22”, as it is a significant commuting route connecting downtown Portland to the western suburbs. Served by METRO for its length, it is also a transit corridor. There is great opportunity to enhance the streetscape, development pattern, and vitality of Congress Street as it passes through Libbytown.

Libbytown Trail Link

Opportunities and Challenges

-  Pedestrian / Auto Danger Area
-  Challenge Area
-  Crossing Desired
-  Future Trail Connection Desired
-  On-Street Improvements
-  Priority Route
-  Rail Line
-  Potential Rail Extension
-  Sidewalk Needed
-  Suggested Traffic Calming
-  Trail



0 300 600 Feet



Prepared For:
Portland Trails
305 Commercial Street
Portland, Maine

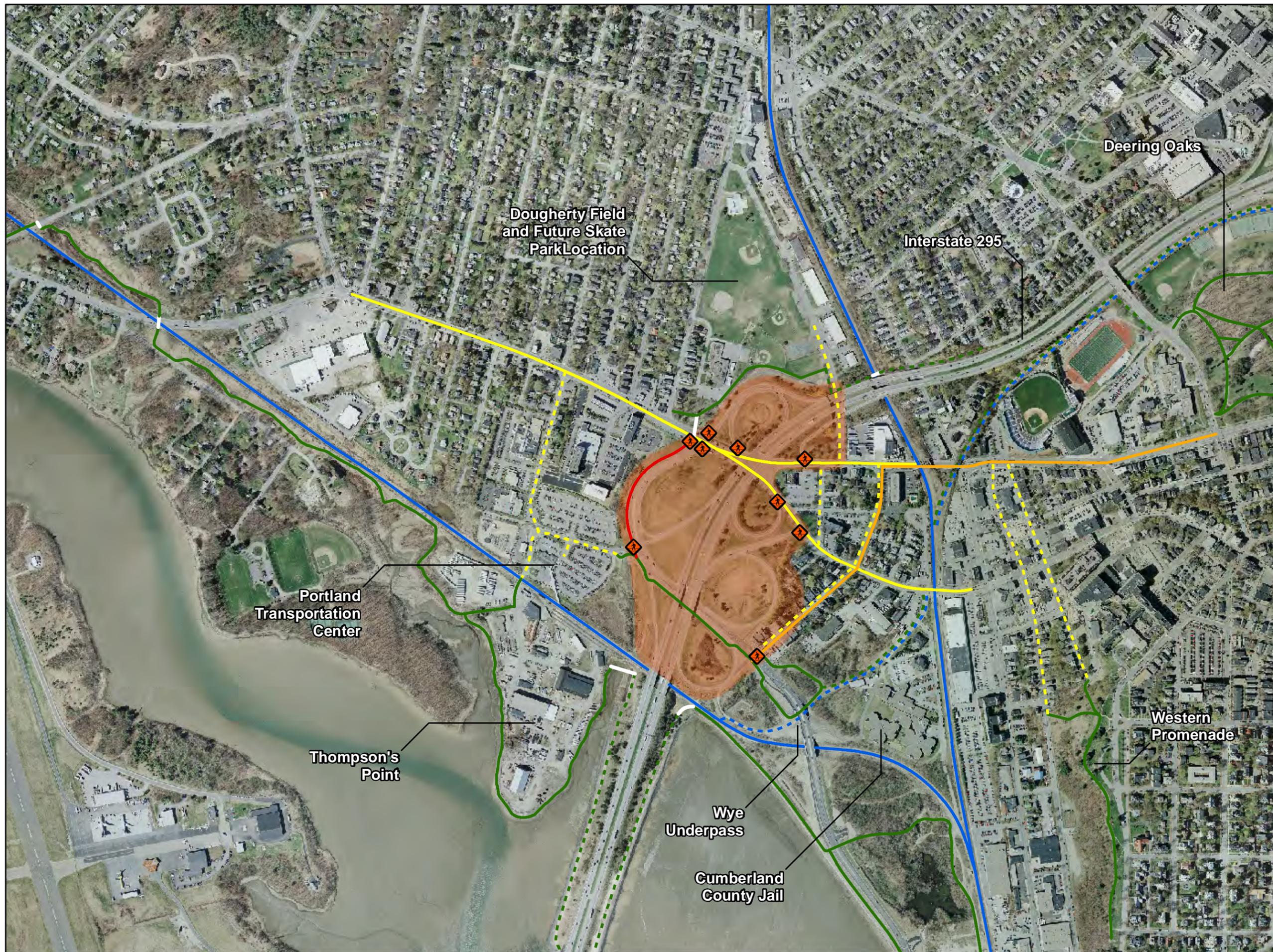


Site Address:
Proposed Trail Link
Libbytown Area
Portland, Maine

PROJECT: 083056

DATE: 07/09/2009

Opportunities and Challenges



Park Avenue

The streetscape and bicycle/pedestrian infrastructure on Park Avenue in the Hadlock Field area is already much improved, and the complex generates a significant amount of foot traffic during games and other events. With a very wide Right of Way and existing streetscape amenities, the Park Avenue corridor has potential to become a Great Street (see section X). The use of Park Avenue east of St. John's Street as a pedestrian corridor was an original goal of the Olmsted Plan², which envisioned a green necklace connecting Portland's Parks. In addition, this corridor including Park Avenues' continuation as Oxford Street, has the potential to be an attractive pedestrian link from Libbytown all the way to Washington Avenue at the foot of Munjoy Hill.

Fore River Parkway

The Fore River Parkway (FRP) connects the Portland Transportation Center (PTC) to West Commercial Street, as well as the Frederic Street neighborhood. By connecting Frederic Street more directly to the FRP, non-auto trips to and from the PTC will become more attractive. While technically a limited-access principle arterial, the FRP benefits from good streetscape elements, a relatively narrow travel way, and the natural beauty of the Fore River.

Portland Transportation Center

The Portland Transportation Center was built in 2001 to accommodate the re-introduction of passenger rail service between Boston and Portland. Concord Trailways Bus Line also operates from the PTC. The success of the Downeaster and Concord Trailways has been a tremendous boon to Portland and the region. Currently there is a significant demand for more auto parking on site, and this will grow as interest in rail travel increases. Expansion of passenger rail service to the north is a high priority for the state, which may add to the congestion at the PTC.

Envisioned as a multi-modal facility, the PTC is a significant generator of auto-trips. Despite a lack of continuous sidewalks and other facilities the PTC also generates many foot traffic trips. Nearby transportation enhancements will enable and encourage the expanded use of other modes.

The PTC is also served by taxi and METRO bus, and thus functions as a transit "hub" where various modes converge. This creates the potential for the area around the PTC to be developed as a Transit Oriented Development area. This type of development would further spur the revitalization of Libbytown, increase pedestrian and bicycle use, decrease the percentage of auto trips, and provide opportunity for mixed-use development.

Hadlock Field and Portland Exposition Center (Portland Sports Complex)

Though not technically in Libbytown, this city owned complex sits directly adjacent to the neighborhood, and is an extremely important trip generator. The hotels and

² In 1905, Mayor Percival Baxter commissioned the Olmsted Brothers firm (sons of Frederick Law Olmsted) to draw up a comprehensive plan for a park system which would link the Eastern Promenade, Back Cove, Deering Oaks, and the Western Promenade by a series of "parkways." The Olmsted Brothers' plan *City of Portland, Maine, General Plan for Park System* has been the foundation for the City's park system ever since.

businesses in the Libbytown area have consistently worked to better connect to the Hadlock area, including the formation of a Friends of the Ballpark District group which advocated for better lighting and pedestrian facilities on Park Avenue west of St. John's Street. Connecting Libbytown to the Hadlock field area will be beneficial to both areas, with potential to expand economic development opportunities and increased livability of the surrounding neighborhoods.

Dougherty Field/Skatepark

Recent completion of the Dougherty Field Master Plan ensures that there will be significant future investment in this city-owned and operated facility, which includes an outdoor pool, fields and courts, as well as a funded and soon to be built skatepark. The planned programmings at this complex are highly compatible with non-auto modes, and a significant percentage of users will access the facility on foot, bicycle, skateboard or other mode.

Rail Corridors and Rail/Trail co-location

Though rail corridors are difficult to cross, their continuous linear alignment provides tremendous potential to co-locate local and regional trails which can provide efficient and direct links to area destinations. The Mountain Division rail line originates in Libbytown, where it peels off "The Main and Montreal line" (Maine Line) and heads west through Libbytown on its way to Sebago Lake and beyond. The Maine Line itself runs along the eastern edge of Libbytown, eventually crossing Congress Street at grade, and above Park Avenue on a concrete bridge. This line continues parallel with St. James Street until it crosses Brighton Avenue. These lines are active with freight and passenger trains. The Amtrak Downeaster uses the Maine Line along the Fore River Parkway and part of the Mountain Division Line at The Portland Transportation Center. There is an active effort to expand the Downeaster to the north, using a new section of track known as the "wye", connecting the Mountain Division Line to the Maine Line between the Fore River Parkway and Congress Street.

Already much of the mountain Division Trail west of Portland has been developed as a multi-use trail. MaineDOT has acquired much of the line and has stated they intend to promote trains and the trail as compatible features of the corridor. Existing and planned rail through Libbytown has potential to develop multi-use transportation corridors which may eventually encircle the Portland peninsula. The precedent for this type of shared corridor exists along the Eastern Promenade Trail, shared with the Maine Narrow Gauge Railroad.

Redundant ramps

With the construction of new on and off ramps to serve the Fore River Parkway, several of the older cloverleaf ramps to Congress Street may prove to be redundant and could potentially be removed. Due to the large amount of land these ramps require, and the difficulty of crossing the ramps for bicycles and pedestrians, any ramp closures would present tremendous opportunities to expand development along the street, and provide a safer more pleasant travel experience and neighborhood context.

Trail System

Portland Trails has established a significant trail network throughout the city and beyond. The Libbytown area benefits from several miles of this system. Trails from the Stroudwater River and Fore River Sanctuary connect directly to Thompson's Point and the Transportation Center, and continue along the Fore River Parkway to West Commercial Street. Expansion of the trail network between Deering Oaks and Commercial Street is a long held goal of Portland Trails. Portland Trails also seeks to further bicycle and pedestrian connectivity in general, and recognizes that trail users are bicyclists and sidewalk users too.

Wear paths and desire lines

Existing human traffic patterns in Libbytown give us valuable clues as to various origins and destinations throughout the area. Portland Trails has learned from years of experience that it is very difficult to encourage people to use a route that is not safe, direct, and intuitive. Even a slight curve in a trail, if not well designed, can result in abandonment of the formal trail and the creation of wear paths or "desire lines" along the route most convenient for pedestrians. These desire lines are evident across the city where sidewalks or trails end, or deviate from the direction people are traveling.

The routing of sidewalks and trails is not always a simple matter, and it may be difficult to anticipate every trip someone may take from a given point of origin. Many expensive infrastructure projects have been undertaken that are underutilized where people have sought out a more direct route to their destination. There may be many good reasons that a particular route was chosen, but to ignore existing patterns of pedestrian movement is often a missed opportunity to provide the infrastructure that people will truly use and appreciate. In many cases it may be worth the extra engineering or creative thinking to accommodate the movement that people are already making. Conversely, "looking the other way" and designing a route which ignores these desire lines may result in further shortcuts, unsafe crossings, or other unintended consequences. With this in mind Portland Trails has made it a priority to formalize traditional neighborhood shortcuts, and improve upon the connectivity offered by existing infrastructure wherever possible.



Wear path in use behind Hadlock Field

IX. Challenges and Obstacles

In many ways Libbytown has never recovered from the construction of I-295; and thus many of the physical connections and patterns of foot traffic created by the daily life of a neighborhood remain broken or damaged. Of course, new businesses and other destinations have been developed and some new patterns have emerged. If there is a “center” of Libbytown today, it may be the intersection of Congress and Bolton Streets, defined by Anania’s Market, Tony’s Donuts, and the Mobil Mart, though the area has more of a “suburban strip” feeling than a village center. Area residents repeatedly cite safety concerns, and bemoan the lack of a true “neighborhood”. Many residents do not feel comfortable accessing area destinations on foot or bike, thus most of the short trips in the area are taken by auto.

The construction of the Portland Transportation Center on Thompson’s Point, housing the Amtrak Downeaster and Concord Trailways bus line, has created a significant “attraction” within Libbytown, as have several new hotels and fast-food restaurants. These destinations, and the large number of residences adjacent to the Congress Street corridor do generate some level of foot-traffic, though the numbers of trips on foot or by bike is significantly lower than other parts of town that have better pedestrian facilities and fewer obstacles.



Libbytown Center?

Challenges to pedestrian mobility in the Libbytown area include the following:

I-295 and associated highway infrastructure

Along with increased automotive mobility and access, I-295 has had tremendous impact on Portland, effectively separating “outer Portland” from the peninsula. Nowhere is this separation more pronounced than Libbytown. Though Libbytown officially extends east to St. John Street, in many ways the neighborhood ends a few blocks west of the highway. The development pattern outside of 295 is decidedly more suburban and auto-centric, with “strip style” businesses, limited pedestrian amenities, copious surface parking, and significant volumes of higher speed commuter traffic concentrated on Congress Street. A few blocks east of I-295, a more urban Portland begins to emerge, though one-way streets and continued high-speed traffic persist until St. John’s Street where the impact of the interstate finally dissipates.

As it passes through the Portland peninsula I-295 forms a linear barrier with only a handful of locations to cross. Crossings at Congress Street/Park Avenue, St. James Street, Deering Avenue, Forest Avenue, Preble Street Extension, and Tukeys Bridge are the only points currently allowing passage onto of off of the Portland peninsula. With these limited options it is crucial that each of these provide a safe, effective and attractive passage. Unfortunately the crossings located in Libbytown are neither safe, effective nor attractive. For this reason it makes sense to pay close attention to how these crossings can be improved.

Railroad Infrastructure

The Libbytown area is home to several active rail lines, as well as former and potential future rail corridors. These rail lines are an important part of the transportation infrastructure of the city of Portland, but they do present challenges to other modes of transportation as they can only be crossed at specific locations, and thus often present linear barriers to mobility similar to the highway. Additionally, rail operators and owners are not always eager or willing to allow co-location or crossing options, thus efforts to achieve these goals are often long-term endeavors with no guarantee of a successful outcome.

Fore River Parkway

The Fore River Parkway was built in 2005 to provide an alternate route for auto and truck traffic between I-295 and Commercial Street, the Old Port, and South Portland via the Casco Bay Bridge, as well as an access road for the new Mercy Hospital complex. The Parkway is classified as a Limited Access Principal Arterial, with a speed limit of 40mph. The road was built with a paved bicycle pedestrian trail along its western edge, which then crosses to a sidewalk on the eastern side as one approaches Veterans Bridge. Though the trail provides good mobility from the Transportation Center to West Commercial Street, it did not provide any access to Congress Street. This oversight is soon to be remedied with a sidewalk or trail having been funded by PACTS.

The Parkway also provides a connection to Frederic Street, via an underpass built to accommodate the “wye” rail line extension, which would connect the Mountain Division Line to the Maine Line. Though this link may work for some bicyclists and pedestrians, it has significant challenges, and currently many users choose to cross to Frederic Street at grade. This connection is addressed elsewhere in this report.

One-way streets

With the construction of I-295 the street network in the Libbytown area was significantly altered as many streets were eliminated, truncated, or reconfigured. Several Streets were designated as one-way, including Park Avenue (between St. John’s Street and the intersection of Congress Street), Congress Street (between Park Avenue and St. John’s Street), and Marston and Lowell Streets (between Congress Street and Park Avenue). This configuration enables higher speed auto traffic in the area, and extends the influence of the highway into the surrounding neighborhood. These one-way streets are of particular concern for bicyclists, who must travel in the same direction as auto traffic, and therefore may be routed out of their way. It is worth noting that City policy (Portland Transportation Plan and other documents) and best practices in urban design favor two-way streets for the reasons mentioned above.

High-speed, High-volume traffic

Current speeds on Congress Street, the Fore River Parkway and other area roads are higher than other parts of the city. Congress Street is posted at 30mph, but cars regularly travel at speeds in excess of 40mph. In particular, the stretch of Congress Street from the

intersection of Fore River Parkway to Frederic Street is often cited as a dangerous area for pedestrians and bicyclists, with high speeds and significant weaving of cars. The Fore River Parkway is posted at 40mph.

Speeds on urban streets generally should not exceed 30mph, and should be lower in dense areas. Auto speeds above 40mph are shown to result in over 80% fatality for pedestrians involved in pedestrian/auto collisions, and thus the perception and reality of significant risk for pedestrians traveling along these streets now (where cars regularly exceed 40mph) present significant deterrents to pedestrian use.

Incomplete Streets

Many of the streets in the Libbytown area are built primarily to serve auto traffic. Multiple curb-cuts, slip lanes, lack of shoulders or bike lanes, narrow sidewalks, few crossing points and few if any pedestrian amenities such as street trees, benches, or esplanades create an unwelcoming environment for pedestrians. Best practices in urban design and planning continue to focus on the importance of “Complete Streets” that are built to accommodate all modes of transportation and encourage human-powered modes as the preferred choice for short trips. These practices also have the potential to produce neighborhood vitality and economic development. These objectives are also reflected in the City of Portland’s Comprehensive Plan. Complete streets have facilities for pedestrians and bicycles built-in, they have streetscape elements such as esplanades, street trees, street furniture and other features which not only accommodate, but welcome pedestrian activity. While Libbytown and the Congress Street corridor will continue to move high volumes of auto traffic, it is possible and desirable to reduce the negative impacts these facilities have on the surrounding community.

Non human-scaled development

Much of the current development on Congress and Park has surface parking in the front of the building, and is one-story single use development catering to commuters living outside of the city. In addition to appropriately designed streets, adjacent land uses and building design have significant impact on pedestrian and bicycle use. Buildings that front the street and have an entrance on the sidewalk are more likely to encourage the presence of pedestrians.

Summary of challenges

Due to the many challenges described above, Libbytown is currently one of the most difficult areas in Portland to navigate as a pedestrian or bicyclist. Though there have been recent improvements, and more are in the works, the City would do well to invest in significant improvements in the area in order to re-connect Libbytown to its surroundings. The funding of this study makes clear that the City and PACTS recognize the importance of providing better connections to and through the Libbytown area, and other ongoing efforts will further this goal.

X. Area-Wide Pedestrian System Analysis

There are many ways to improve upon the existing conditions for bicycles and pedestrians in the Libbytown area, these include:

Building Complete Streets

As described above; a complete street is simply a street that accommodates all users, and encourages pedestrian activity. Instead of a focus strictly on auto mobility, Complete Streets seek to balance all modes by providing infrastructure for all modes.

Traffic Calming

Reducing auto speeds is one of the most consistent priorities cited by the public for improving their neighborhoods. Recent Planning documents such as the Outer Congress Street Corridor Study and the Peninsula Transit Study also cite the need to reduce speeds along major traffic routes through the city. Speed may be the single biggest influence on the ability of cyclists and pedestrians to comfortably use the same facilities that so many autos use on a daily basis.

“Sharrows”

Cities around the country have begun to utilize an on-street marking stencil known as “sharrows” to designate a shared roadway. Sharrows consist of a double “chevron” arrow on top of a bicycle icon, stenciled onto the center of the travel lane. These markings are generally used on streets where bicycles are intended to share the travel lane with other vehicles. Typically sharrows are used on streets without bike lanes, and where the speed differential between autos and bicycles is not significant. The intent of sharrows is to educate both drivers and cyclists that bicycles are encouraged to use the travel lane, and thus drivers will need to be aware of the possible presence of bicycles and drive accordingly. In some sense sharrows can be a traffic calming device, giving drivers a visual cue that the intended speed on the road should be low enough that a cyclist can safely travel with traffic. They also serve to remind cyclists that they have the right to use the travel lanes, and don’t necessarily need to keep to the far right.

The City of Portland is planning to implement sharrow markings as part of upcoming improvements to the city’s bicycle network. Sharrows, though widely used, are not listed as pavement markings in the current MUTCD guidebook, and thus are deemed an “experimental” marking. The next version of the MUTCD will include sharrow stenciling as an “official” pavement marking. It should be noted that, until officially approved, shared roadway markings or sharrows are considered experimental and may require experimental authorization by FHWA. The City is currently working with FHWA to implement sharrow treatment on Forest Avenue.

Mitigating the Impacts of I-295

Any measures that can be taken to lessen the negative affects of the highway interchange on the neighborhood will increase the ability of bicycles and pedestrians to safely and comfortably navigate through the Libbytown area.

Encouraging the Grid Pattern and Connectivity

Best practices in urban design currently favor a traditional grid pattern; providing multiple options for all trips. The grid serves auto and non-auto users well, and better balances compatible uses. Street connectivity, whether for autos or pedestrians only, is proven to decrease auto usage for short trips. By providing multiple options for short trips, the grid establishes a neighborhood context, and has potential to increase economic development opportunities.

Building Great Streets

The concept of a Great Street, as developed by Allen Jacobs and other planners, has begun to gain momentum among communities around the country. A Great Street is designed intentionally to create a sense of place that is welcoming, safe, vibrant and reflects the character of the community. A Great Street goes beyond being a Complete Street, in that it is designed with a specific character in mind, and focuses more on expanding the economic and social vitality of an area through unique streetscape and building design; including public art, complimentary architecture, color, landscape and other design elements that create a specific identity. Redesigning segments of major streets to become Great Streets has many benefits, which are a natural outcome of the following attributes:

Multi-modal Streets

Great Streets segments provide safe, comfortable, and visually attractive streets and neighborhoods for walking, bicycling, using transit or driving.

Land Use/Transportation Connection

Mixed-use development along a Great Street provides better access to transportation choices and contributes toward reducing traffic congestion.

Economic Vitality

Businesses prosper when they can be accessed by various transportation modes. They also benefit from locations where there is an enhanced sense of place, beautiful streets, and a wide shaded place to walk.

Health & Welfare

Many recent studies make the link between land use and a healthy population. Great Streets provide street-scale urban design and land use policies that support physical activity in small geographic areas. Every transportation mode begins and ends with walking. The Great Streets concept supports all transportation modes when it supports the pedestrian environment.

Quality of Life

Great Streets help people travel safely and comfortably from their homes to shopping, work, and play. Small shops, interesting activities, well-designed buildings, multi-modal transportation access, on-street parking and shaded sidewalks all contribute to an environment that nurtures people.

Park Avenue as a Great Street

Park Avenue in the vicinity of Hadlock Field already has many of the elements of a Great Street including an expansive public realm, historic, architectural and artistic elements, and a unique identity. There is abundant opportunity to expand the themes already present along this section of Park Avenue towards Deering Oaks and into Libbytown.

Recommendations

As discussed above, the Libbytown area is significantly challenged from a bicycle and pedestrian perspective. There are many challenges, but also many opportunities to improve this condition. The presence of the I-295 interchange is probably the single biggest barrier, though here too there are opportunities for improvement. Congress Street itself may be the biggest asset for the area, serving as a major transportation corridor, business district, and the center of much of the vitality of the neighborhood. The following recommendations will help improve the connectivity, vitality, and quality of life for Libbytown residents and visitors.

Transform Congress Street into a Complete Street, serving all users

- Implement the Portland Bike Network recommendations
- Re-configure Congress Street between Park Ave. and St. John's Street as a two-way street
- Re-configure Congress Street west of Park Ave. from 4-lanes to 3-lanes (with a center turn lane / raised median) where possible
- Prioritize repairing /adding ADA ramps at all intersections
- Expand sidewalk widths to 10' wherever possible
- Provide and maintain bus shelters for transit users
- Provide more crossing points on Congress Street
- Provide more street trees along the corridor
- Provide better pedestrian amenities, such as benches and pedestrian scale lighting
- Encourage mixed-use, pedestrian scale development
- Move parking to the back of buildings where possible
- Implement design standards for prominent corners (such as Libby's Corner) and other locations which can become visual and functional neighborhood focal points

Expand Upon Existing Great Streets elements of Park Avenue

- Extend some of the thematic elements of Park Street east of St. John's to the length of Park Avenue
- Extend the pedestrian realm and Great Streets features through the Sports Complex
- Provide more opportunities for public art along the corridor
- Expand sidewalk widths wherever possible
- Provide and maintain bus shelters for transit users
- Provide more crossing points
- Provide more street trees along the corridor
- Provide better pedestrian amenities, such as benches and pedestrian scale lighting

- Encourage mixed-use pedestrian scale development
- Move parking to the back of buildings where possible

Calm traffic on Congress and Park

- Narrow travel lanes where possible
- Provide on-street parking where possible
- Install curb extensions (bump-outs) at crossings
- Use Zebra Stripe crosswalk markings
- Reduce posted speed limits to 25 mph

Reduce the impact of the I-295 interchange

- Reconfigure or use signage on off-ramps to force entering autos to stop or slow down
- Remove on-or off ramps found to have redundant functions
- Reconfigure neighborhood streets such as Marston and Lowell as two-way streets
- Provide pedestrian scale lighting under the highway overpass
- Add landscaping under the overpass
- Add signage and other visual clues, such as colored or grooved pavement, to alert autos that they are in an urban setting and should expect the presence of bicyclists and pedestrians
- Work with MaineDOT to investigate the potential for a diamond interchange
- Work with MaineDOT to allow access to edge of ROW for trails

Provide better connectivity to the Portland Transportation Center

- Construct a sidewalk on the western edge of the Fore River Parkway between Congress Street and Thompson's Point Road
- Implement planned improvements on Sewall Street between the PTC and Congress Street
- Expand the trail network on Thompson's Point in the vicinity of the PTC
- Encourage Transit Oriented Development at Thompson's Point

Utilize Creative, low-cost, and temporary methods to achieve short term goals

- Experiment with traffic calming measures and other street improvements. Large planters at key locations can add beauty and slow traffic, and they can be re-used.
- Capitalize on in-house resources. The Department of Public Services has many examples of successful projects done "in-house" with limited funding, including the "road diet" on Westbrook Street in Stroudwater Village
- Capitalize on public/private partnerships such as adopt-a-block, Friends of the Ballpark district, or trail-building with Portland Trails
- Continue to work with neighborhood groups and other constituents to identify priority improvements and remove barriers to connectivity

Construct a temporary trail along the publicly owned sections of the Union Branch rail corridor

- Work with MDOT and Portland Trails to allow this connection in the near term
- Work with Portland Sports Complex management to located connection points to the corridor to enhance safety and access

- Limit financial and resource investments to minimum required to establish safe passage until rail/trail co-location can be permanently established.

Construct a temporary trail along the wye intersection and County Way to Congress Street

- Work with Cumberland County and Jail officials to locate and construct a safe and accessible trail
- Limit financial and resource investments to minimum required to establish safe passage until rail/trail co-location can be permanently established.

Improve Connections to Dougherty Field and future skatepark

- Improve existing paved path along perimeter of City property
- Provide a link to paved path from Congress Street
- Provide a crossing of Congress Street at Fore River Parkway
- Investigate possibility of rail crossing, allowing access from St. James Street to St. John's Street
- Improve pedestrian environment at Brighton/Dartmouth/St. John's intersection

Recommendation for Further Study

Rail Corridor Option

As described above

Sufficient funding should be allocated for planning, so that when and if rail expansion moves forward, the trail option is cued up to be constructed concurrently. PACTS and the City should work with rail interests to develop the Union Branch Corridor.

One-way streets

The one-way configuration of Park and Congress Streets, as well as Marston and Lowell Streets, are not conducive to a neighborhood setting. One-way streets encourage higher-speed auto traffic, and make crossing these streets a dangerous and intimidating prospect. City planners, elected officials and residents have all indicated a desire to study the potential for re-designing these streets as traditional two-way streets. PACTS and the City should begin to study the feasibility of two-way Park Avenue and Congress Street.

I-295

Several of the on and off-ramps connecting I-295 to the Fore River Parkway and Congress Street perform the same function. City planners, elected officials and residents have all indicated a desire to study the potential for reducing the number of ramps if they are proven to be “redundant”. Removing one or more ramps has the potential to significantly improve bicycle and pedestrian safety, create economic opportunities by opening up land for development, and to minimize the impact of the highway on the neighborhood. The City should begin discussions with the MaineDOT to determine whether removal of one or more ramps is feasible.

XI. Conclusions

Priority Route

The Priority Route identified in this study provides a safe, feasible, cost-effective and buildable pedestrian and bicycle route between the Fore River Parkway and Deering Oaks via the **Fore River Parkway, Frederic Street, Marston Street and Park Avenue**. In addition, the report provides recommendations on short and long-term actions to advance the concept of an off-street trail between the Parkway and Deering Oaks. Finally, the report provides recommendations to improve the overall pedestrian and bicycle environment in the Libbytown area.

The Priority Route was identified after extensive public outreach, multiple site-visits, assessment of existing conditions, and analysis of the feasibility and timeline for various options. By utilizing existing infrastructure coupled with low-cost infrastructure improvements the City of Portland could save money and construct the route in a timely manner.

The Priority Route provides multiple benefits to the Libbytown neighborhood as well as visitors to the area, including;

- An on-street route that can be used in whole or part to connect neighborhood destinations with safe and welcoming conditions for bicyclists and pedestrians
- Aesthetic and safety improvements to the existing conditions that will allow more people to access neighborhood destination via bike or foot.
- Improving the physical character and livability of the entire neighborhood
- Using existing infrastructure, saving money for other important projects in the area
- Does not require Right of Way acquisition

Rail Corridor

- Pursue a long-term collaborative effort to co-locate a rail/trail along the rail corridor route as described in section VI.
- Work with Portland Trails to facilitate a temporary trail along the publicly-owned rail corridor route in the short term

Area-wide Improvements

- Pursue short and long term goals to achieve significant improvements to the pedestrian and bicycle network, and the streetscape and livability of the Libbytown area
- Work with MaineDOT to mitigate the negative impacts of I-295
- Pursue Transit Oriented Development and other development opportunities that will strengthen the character and vitality of the area
- Enact zoning and design standards that will encourage a vibrant development pattern throughout the neighborhood

Possible Funding sources

The primary source of funding for the improvements described in this report could be through federal programs administered by the State of Maine. The Maine Department of Transportation has recently consolidated some of its funding opportunities under the

“Quality Improvement Program,” including the Transportation Enhancement Program and the Safe Routes to School program.

The Transportation Enhancement Program is a Federal/municipal match program (typically 80/20) offering a funding opportunity to help communities revitalize their economies by expanding their transportation and livability choices. This program supports pedestrian and bicycle facilities and downtown revitalization initiatives, and would be a good match for the projects recommended for the Libbytown neighborhood. The Safe Routes to School program offers an opportunity for infrastructure improvements (up to 100% funding) that will improve safety or increase the number of children walking or bicycling to school or after school activities (projects within 2 miles of an elementary or middle school). Project improvements typically include sidewalks, traffic calming, pedestrian crossings, and *off-road* bicycle and pedestrian facilities. Although the grants would not pay for the separated bike lanes on Park Avenue, the area around King Middle School would be eligible for traffic calming and other safety improvements.

The Transportation Equity Act for the 21st Century (TEA-21) also provides funding for bike/pedestrian facilities through its “Congestion Mitigation and Air Quality Improvement program” (CMAQ) which was created specifically to fund projects to improve air quality. The CMAQ program provides funds for reducing congestion and for developing transportation alternatives such as bicycle and pedestrian services. The program continues as part of the new Federal Transportation bill, but funding levels are still being determined.

Another possible source of funding is the City of Portland’s Community Development Block Grant (CDBG) Program. The program supports community development projects targeted to benefit Portland’s low and moderate income residents, funding neighborhood facility improvements such as sidewalk reconstruction. Funding priorities include: 1) Mobility and Accessibility—creating the connection between home, work, shop, education and services, and 2) Safe Neighborhoods--creating safe and livable neighborhoods. The Libbytown neighborhood is within a City of Portland HCD Eligible area.

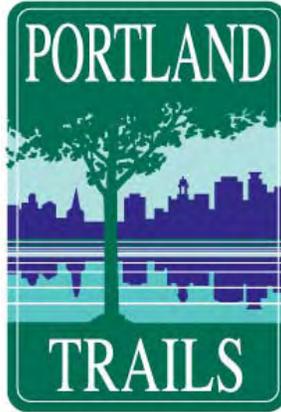
TIGER Discretionary Grants

An immediate priority for funding is the recently announced federal “Grants for Transportation Investment Generating Economic Recovery” (or TIGER Discretionary Grants). The deadline for first round applications was September 15, 2009, but second round funding may be applicable. The program runs for two additional years, as projects must be completed by February 17, 2012. State and local governments are eligible to apply. TIGER Discretionary Grants are a good fit for the Libbytown projects:

- Primary selection criteria are long-term outcomes (including livability), job creation and economic stimulus. Quick jobs, especially those that benefit small businesses or economically distressed areas, will be valued.
- Secondary criteria are innovation and partnerships, with value put on co-benefits such as energy efficiency and environmental improvement.
- Applicants who demonstrate intermodal connectivity (such as a bike/ped connection to the Portland Transportation Center) will be considered highly competitive.

APPENDICIES

Summary of April 9, 2009 Public meeting



Libbytown Area multi-modal connections

April 9, 2009 Public Meeting Notes

21 people attended (see Appendix A)

Welcome: Facilitator Jaime Parker of Portland Trails described the specific scope of the current PACTS funded project; **to identify and present feasibility and cost concepts for a pedestrian link between the Fore River Parkway and Deering Oaks.**

Mr. Parker then explained that Portland Trails is augmenting the study (using its own funds) by studying more general neighborhood connectivity, and that Portland Trails is seeking input on this component as well.

Attendees saw a slideshow presentation of some existing conditions in the Libbytown Area, from a pedestrian and bicycle perspective.

Also presented were comments from a 2007 Public Meeting (see appendix C), and discussed the general public sentiment that there are many challenges to pedestrian mobility in the area, many of which were specifically mentioned at the 2007 meeting.

Mr. Parker briefly described several projects underway which attempt to remedy or influence some of the mobility issues, including:

- Sewall Street sidewalk improvements and connection to Portland Transportation Center (PTC)
- PTC connector road trail or sidewalk construction
- Outer Congress Street Corridor Study
- Dougherty Field Master Plan, including a new skatepark

Three conceptual routes between Fore River Parkway (Portland Transportation Center) and Deering Oaks were then presented. Attendees divided into 3 groups, and were instructed to use the concepts presented as starting points for discussion, and to feel free to hybridize, or otherwise alter the routes. Groups were asked to spend some time discussing and identifying a preferred route from Fore River Parkway (PTC) to Deering Oaks; and some time identifying other obstacles and opportunities to pedestrian mobility in the area.

In summary; Specific comments are listed below (see appendix B).

- People expressed a desire for a direct, intuitive, and well marked route
- All three groups favored using the street/sidewalk network for at least part of the connection from the Parkway to Deering Oaks
- All three groups identified Park Avenue as a primary route needing improvements, particularly from the Parkway to St. John's Street.
- Most people supported the concept of a trail along the rail corridor, provided trains could share the corridor, and that safety and feasibility concerns could be alleviated.
- All three groups identified both Congress Street and Park Avenue as needing far better pedestrian facilities.
- Speed of autos, and lack of safe crossing points were identified as primary concerns
- There was a desire for fewer one-way streets to enable better bicycle mobility.
- There was a desire to lessen the negative impact of the highway infrastructure (i.e. removing redundant ramps, better integrating with streets)
- There was a desire for better lighting, and beautification under all bridges in the area

Groups reported back informally, and presented notes and marked up maps for reference. Portland Trails thanked attendees for their participation, and meeting adjourned.

Libbytown Public Meeting – 4/9/09 list of attendees

Anne Pringle
Patrick Banks
Judy Bruenjes
Dave Marshal
Fred Dillon
Bill Needelman
Sue Davis
Chris Small
Nan Cumming
Alex Jaegerman
Christian McNeil
Tony Donovan
Erik J Hayes

Dan Skolnik
Fred Jeffery
Carl Eppich
Channing McDaniels
Daniel Stewart
Tom Civiello
John Mahoney
Jaime Parker

Libbystown Public Meeting – 4/9/09 public comments

Comments are divided into 2 groups: Fore River Parkway to Deering Oaks, and General Area Improvements

Fore River Parkway → Deering Oaks:

“Use rail line, most pleasant”
“Yellow line brings people closer to the other side of the highway, lessening the negative impact of the highway – Links communities”
“Lowell Street better, slower, safer (than Marston) for connecting Park and Congress –“
“—but only if you can then cross Congress and cut along cloverleaf ramp to FRP”
“If Lowell, use west side”
“Frederic Street a good route if you can’t access FRP behind Huntress/along cloverleaf”
“would need to cross FRP at Frederic Street”
“UB line to trestle, then descend”
“[using yellow line] connects 3 existing green spaces; Dougherty Field, Lowell Street Park, and [Cloverleaf Park-jp] – via St. James Street (lines up nicely)”
“Sea Dogs should sponsor lighting on the trail”
“concerned about liability of rail/trail co-location”
“Federal rule of thumb - 1’ of distance per mph of train”
“MaineDOT has written a rule allowing only 15’ separation, or 10’ with fence”
“MNGRR should co-locate with Trail easily (now happens at E.Prom)”
“trail should use Park Street all the way to DO (corner Deering and Park)”
“Rail alignment preferable since one-way streets problematic for bikes”
“Opportunity for a 2-way on Marston”
“Stretch behind Hadlock is sketchy and not defensible-”
“- but, connect between Hadlock and track field would help”
“Opportunity to use Washburn to connect to UB line”
“Mainline bridge over Park St. is an obstacle”
“Both Park and Congress should be 2-way streets”
“Rail with trail is possible”
“Option #3 (red) is too circuitous for a primary route”
“Park Street the whole way”
“- may need bike lanes in both directions”
“Do we really need 4-lanes on Park Street”
“Connection from the wye to Park is difficult”
“Safety of Union Branch is not a hinderance”
“- it is without frequent access points”
“Hood uses Marston heavily – would a 2-way interfere?”
“lighting and good access from Marston to Hadlock”

“sidewalk improvements throughout”
“keep off the rail corridor”
“preference is to stay off the sidewalks (bikes on road) –vs. multi-use trails”
“should follow Park Ave from Marston Street to Deering Oaks”
“great signage is needed along the entire route”
“route should be direct and intuitive”
“the rail trail would be a better commuter route”

General Area Improvements:

“Re-stripe Park Ave. to 1 lane each way with a center turn lane, add bike lanes”
“Lighting under Park Ave bridges (City has \$60k...not sure why project on-hold)”
“Nice green space/pocket park at Lowell/Congress....should be better connected”
“Marston and Lowell both need sidewalks completed”
“Remove redundant ramps”
“Crossing needed at Frederic Street”
“Slower speeds, traffic calming on Congress inbound”
“2-way streets would make links easier and travel safer”
“Loud, fast, unsafe, no crosswalks [Congress inbound]”
“Lighting under St. James bridge, 295 bridges”
“Pedestrian access to PTC critical!”
“Bikes are vehicles and follow road rules”
“Sidewalks should be on both sides of PTC access road”
“Sidewalk improvements on Gilman and Valley to connect to Western Prom”
“Crosswalk across St. John’s at A Street”
“Connect Deering Oaks paths to corner of Deering St. and Park Ave.”

Comments from 2007 Libbytown Public Meeting hosted by Portland Trails

- Desire trail from hotels to Transportation Center and Hadlock Field
- There should be a Xwalk at Frederic Street...the route provided is an additional 5-minute walk through an area with no eyes on it, no nearby houses, not visible from the street, and it's right behind the jail.
- Bike lanes/trail along Outer Congress Street
- Need a way to cross the tracks between St. James and St. John's Streets
- Xwalk at Douglas Street
- How to get between Concord Trailways to Greyhound Stations
- Crossing at Frederic Street
- Trail along train tracks
- Sidewalk to PTC
- Trail along Hooper Street (between Powsland and Sewall)
- Paint and lights below RR bridge on Park Street
- Trail out along I-295 peninsula connecting to new Mercy site
- Better lighting along outer Congress sidewalks
- Best Xwalk in Portland is at Hadlock Field across Park Street
- Horrific, dangerous crosswalks with no pedestrian refuge islands [across Congress]
- It's all so car-centric!
- Scary to cross at USM 5-way intersection
- No sidewalk to train/bus station
- Narrow sidewalk on Congress Street
- No sidewalk along St. James Street
- Dangerous Xwalks at Fessenden Square
- Libby's Corner under I-295 is a big, ugly concrete area, should be beautified with trees and shrubs
- Need to advertise where trails are



E N G I N E E R S

Civil Engineers & Land Surveyors

Libbytown Trail Link DRAFT Opinion of Probable Cost

Date: October 10, 2009
Project No: 083056
By: J. Mahoney
Checked By: Steve Bradstreet

DRAFT Summary of Costs by Section

Section	Description	Cost
1	Fore River Parkway Crossing (Option 1)	\$40,096.88
2	Fredric Street	\$8,951.25
3	Marston Street	\$157,300.50
4	Park Avenue West (one way road)	\$207,102.53
5	Park Avenue East (two way road)	\$74,166.75
Total:		\$487,617.90
Design Cost at 10%:		\$48,761.79
Grand Total:		\$536,379.69



E N G I N E E R S

Civil Engineers & Land Surveyors

Libbytown Trail Link DRAFT Opinion of Probable Cost

Date: October 10, 2009

Project No: 083056

By: J. Mahoney

Checked By: Steve Bradstreet

Fore River Parkway Crossing Option 1 Terminus of Fredric Street

Item	Description	Quantity	Unit	Unit Price	Cost
1	Bituminous Sidewalk	150	SY	\$40.00	\$6,000.00
2	Install ADA Ramp	5	EA	\$3,000.00	\$15,000.00
3	Remove and Reset Existing Fence	70	LF	\$15.00	\$1,050.00
4	Landscaping for Fore River Apartments	1	Allowance	\$3,000.00	\$3,000.00
5	Crosswalk Painting	2	EA	\$250.00	\$500.00
6	Traffic Control	1	LS		\$5,000.00
7	Mobilization at 5%	1	LS		\$1,527.50
Project Total:					\$32,077.50
25% Contingency:					\$8,019.38
Grand Total:					\$40,096.88

Fore River Parkway Crossing Option 2 Terminus of I-295 Exit 5 Offramp

Item	Description	Quantity	Unit	Unit Price	Cost
1	Bituminous Sidewalk	230	SY	\$40.00	\$9,200.00
2	Install ADA Ramp	6	EA	\$3,000.00	\$18,000.00
3	Remove and Reset Existing Fence	70	LF	\$15.00	\$1,050.00
4	Landscaping for Fore River Apartments	1	Allowance	\$3,000.00	\$3,000.00
5	Crosswalk Painting	3	EA	\$250.00	\$750.00
6	Traffic Control	1	LS		\$6,000.00
7	Mobilization at 5%	1	LS		\$1,900.00
Project Total:					\$39,900.00
25% Contingency:					\$9,975.00
Grand Total:					\$49,875.00

Fore River Parkway Crossing Option 3 Signalized Intersection at Thompson's Point Road

Item	Description	Quantity	Unit	Unit Price	Cost
1	Bituminous Sidewalk	1,600	SY	\$35.00	\$56,000.00
2	Install ADA Ramp	5	EA	\$3,000.00	\$15,000.00
3	Remove and Reset Existing Fence	70	LF	\$15.00	\$1,050.00
4	Landscaping for Fore River Apartments	1	Allowance	\$3,000.00	\$3,000.00
5	Crosswalk Painting	3	EA	\$250.00	\$750.00
6	Traffic Control	1	LS		\$10,000.00
7	Mobilization at 5%	1	LS		\$4,290.00
Project Total:					\$90,090.00
25% Contingency:					\$22,522.50
Grand Total:					\$112,612.50



E N G I N E E R S

Civil Engineers & Land Surveyors

Libbytown Trail Link DRAFT Opinion of Probable Cost

Date: October 10, 2009

Project No: 083056

By: J. Mahoney

Checked By: Steve Bradstreet

Fredric Street

Item	Description	Quantity	Unit	Unit Price	Cost
1	Striping	1,400	LF	\$0.80	\$1,120.00
2	Crosswalk Painting	2	EA	\$250.00	\$500.00
3	Bike Lane, Shared Roadway or Turning Lane Stencil	7	EA	\$200.00	\$1,400.00
4	Install ADA Ramp	0	EA	\$2,000.00	\$0.00
5	Reset Existing Granite Curb	0	LF	\$25.00	\$0.00
6	Install Concrete Planter	0	EA	\$530.00	\$0.00
7	Remove Raised Island	0	SY	\$8.00	\$0.00
8	Install Bituminous Sidewalk	0	SY	\$40.00	\$0.00
9	Reconstruct Travel/Parking Lane	0	50	\$50.00	\$0.00
10	Repair Existing Sidewalks and ADA Ramps	1	Allowance	\$3,000.00	\$3,000.00
11	Bollard Lighting for Railroad Underpass	0	LS	\$20,000.00	\$0.00
12	Painting and Enhancements for Railroad Underpass	0	Allowance	\$10,000.00	\$0.00
13	Adjustments to Park Saint John Intersection	0	Allowance	\$50,000.00	\$0.00
14	Traffic Control	1	LS		\$800.00
15	Mobilization at 5%	1	LS		\$341.00
Project Total:					\$7,161.00
25% Contingency:					\$1,790.25
Grand Total:					\$8,951.25

Marston Street

Item	Description	Quantity	Unit	Unit Price	Cost
1	Striping	2,560	LF	\$0.80	\$2,048.00
2	Crosswalk Painting	2	EA	\$250.00	\$500.00
3	Bike Lane, Shared Roadway or Turning Lane Stencil	7	EA	\$200.00	\$1,400.00
4	Install ADA Ramp	5	EA	\$2,000.00	\$10,000.00
5	Reset Existing Granite Curb	420	LF	\$25.00	\$10,500.00
6	Install Concrete Planter	100	EA	\$530.00	\$53,000.00
7	Remove Raised Island	140	SY	\$8.00	\$1,120.00
8	Install Bituminous Sidewalk	532	SY	\$40.00	\$21,280.00
9	Reconstruct Travel/Parking Lane	200	50	\$50.00	\$10,000.00
10	Repair Existing Sidewalks and ADA Ramps	1	Allowance	\$6,000.00	\$6,000.00
11	Bollard Lighting for Railroad Underpass	0	LS	\$20,000.00	\$0.00
12	Painting and Enhancements for Railroad Underpass	0	Allowance	\$10,000.00	\$0.00
13	Adjustments to Park Saint John Intersection	0	Allowance	\$50,000.00	\$0.00
14	Traffic Control	1	LS		\$4,000.00
15	Mobilization at 5%	1	LS		\$5,992.40
Project Total:					\$125,840.40
25% Contingency:					\$31,460.10
Grand Total:					\$157,300.50



E N G I N E E R S

Civil Engineers & Land Surveyors

Libbytown Trail Link DRAFT Opinion of Probable Cost

Date: October 10, 2009

Project No: 083056

By: J. Mahoney

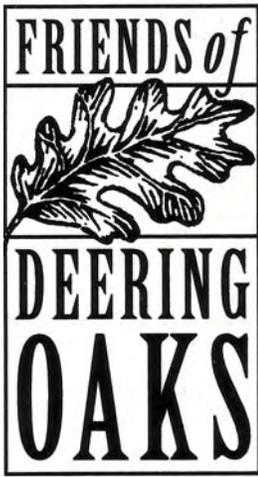
Checked By: Steve Bradstreet

Park Avenue West (one way section)

Item	Description	Quantity	Unit	Unit Price	Cost	
1	Striping	3,028	LF	\$0.80	\$2,422.40	
2	Crosswalk Painting	6	EA	\$250.00	\$1,500.00	
3	Bike Lane, Shared Roadway or Turning Lane Stencil	8	EA	\$200.00	\$1,600.00	
4	Install ADA Ramp	0	EA	\$2,000.00	\$0.00	
5	Reset Existing Granite Curb	130	LF	\$25.00	\$3,250.00	
6	Install Concrete Planter	84	EA	\$530.00	\$44,520.00	
7	Remove Raised Island	0	SY	\$8.00	\$0.00	
8	Install Bituminous Sidewalk	100	SY	\$40.00	\$4,000.00	
9	Reconstruct Travel/Parking Lane	70	50	\$50.00	\$3,500.00	
10	Repair Existing Sidewalks and ADA Ramps	1	Allowance	\$10,000.00	\$10,000.00	
11	Bollard Lighting for Railroad Underpass	1	LS	\$20,000.00	\$20,000.00	
12	Painting and Enhancements for Railroad Underpass	1	Allowance	\$10,000.00	\$10,000.00	
13	Adjustments to Park Saint John Intersection	1	Allowance	\$50,000.00	\$50,000.00	
14	Traffic Control	1	LS		\$7,000.00	
15	Mobilization at 5%	1	LS		\$7,889.62	
					Project Total:	\$165,682.02
					25% Contingency:	\$41,420.51
					Grand Total:	\$207,102.53

Park Avenue East (two way section)

Item	Description	Quantity	Unit	Unit Price	Cost	
1	Striping	13,760	LF	\$0.80	\$11,008.00	
2	Crosswalk Painting	9	EA	\$250.00	\$2,250.00	
3	Bike Lane, Shared Roadway or Turning Lane Stencil	32	EA	\$200.00	\$6,400.00	
4	Install ADA Ramp	0	EA	\$2,000.00	\$0.00	
5	Reset Existing Granite Curb	50	LF	\$25.00	\$1,250.00	
6	Install Concrete Planter	0	EA	\$530.00	\$0.00	
7	Remove Raised Island	0	SY	\$8.00	\$0.00	
8	Install Bituminous Sidewalk	140	SY	\$40.00	\$5,600.00	
9	Reconstruct Travel/Parking Lane	0	50	\$50.00	\$0.00	
10	Repair Existing Sidewalks and ADA Ramps	1	Allowance	\$20,000.00	\$20,000.00	
11	Bollard Lighting for Railroad Underpass	0	LS	\$20,000.00	\$0.00	
12	Painting and Enhancements for Railroad Underpass	0	Allowance	\$10,000.00	\$0.00	
13	Adjustments to Park Saint John Intersection	0	Allowance	\$50,000.00	\$0.00	
14	Traffic Control	1	LS		\$10,000.00	
15	Mobilization at 5%	1	LS		\$2,825.40	
					Project Total:	\$59,333.40
					25% Contingency:	\$14,833.35
					Grand Total:	\$74,166.75



MISSION STATEMENT

The Friends of Deering Oaks is a non-profit citizen organization committed to preserving, protecting and enhancing the physical condition of Portland's historic Deering Oaks Park and promoting its use by residents and visitors. The 1994 Deering Oaks Master Plan will guide the activities of the Friends of Deering Oaks.

Friends of Deering Oaks

P.O. Box 10416

Portland, Maine 04104

(207) 774-0437

April 15, 2009

Ms. Nan Cumming, Executive Director
Portland Trails
305 Commercial Street
Portland, ME 04101

Dear Nan:

I am writing on behalf of the Friends of Deering Oaks to convey our thoughts on trail connections to Deering Oaks.

Trails will be coming to Deering Oaks from two directions, from Bayside and from the west. We believe that both approaches should bring people into the park itself, not deliver them to a trail at the edge, especially along the rail corridor at the north end of the park, abutting noisy I-295. Deering Oaks is one of Portland's premier open spaces and should be enjoyed by those using the trail system, not bypassed by a trail at a perimeter.

At the meeting the other night, mention was made of the desire for off-road trail experiences, which we can appreciate and which are certainly available in many other areas of the city. We do not believe that desire should override the choices as to where the trail enters and traverses Deering Oaks, as the park should be a focal element of the trail system.

We believe that the entrance from Bayside should come in at the point where the historic Forest Avenue entrance was located. This entrance should be restored as a pedestrian-only entrance to the park. This will require a significant investment in infrastructure to make a safe crossing and to reestablish the historic entrance. With financial resources limited, we believe that any available funds would be better spent on this link rather than creating an expensive trail at the I-295 perimeter.

From the west, we believe that the trail should enter at the Deering and Park Avenue intersection, and that the trail should come along a redesigned Park Avenue corridor, with investment in trees and other pedestrian amenities. This will put in place the original Olmsted vision, a connection to the Western Prom by improved Park, Valley, and Gilman Streets. People would traverse the park via Farmers' Market Road, exiting the newly-established Bayside pedestrian entrance.

We hope that Portland Trails will take these views into consideration as it advances the various trail route alternatives.

Very truly yours,

Anne B. Pringle
President

City of Portland, Maine Bicycle Network Map



Legend

- Bicycle Network Group's Priority Phase 1 Routes
- Alternate Priority Routes
- Proposed Phase 1 Routes
- Existing Bicycle Route - designated with painted lane and signs
- Existing Bicycle Route - designated with signs only
- Areas of Opportunity
- 1. Congress St. Study
- 2. Deering Ave. Paving Project
- 3. Morrill's Crossing Development
- 4. Forest Ave. Streetscape Project
- 5. Washington Ave. Streetscape Project
- 6. Auburn St. CSO & Paving Project
- 7. Commercial St. MDOT Paving Project
- Challenge Areas

September 2007

0 2,500 5,000 10,000 Feet