

Libbytown Traffic Circulation and Streetscape Study

Background

“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 to re-connect Libbytown to its surroundings.”

Connecting Libbytown-2009

Libbytown has seen tremendous change in the past 50 years, largely related to the construction of I-295. The historic center of Libbytown is coincident with the center of the Congress Street-I-295 interchange.

Goals and Purpose of the Study

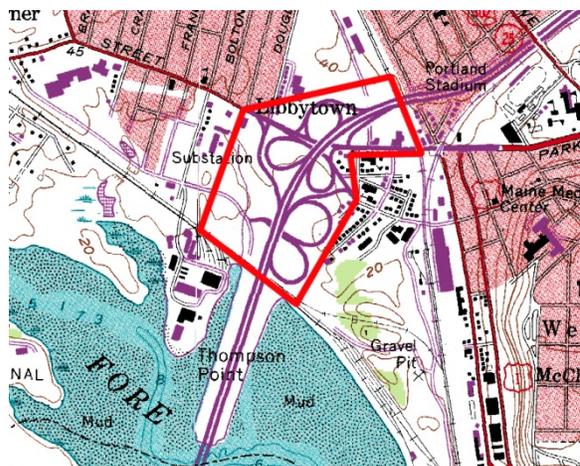
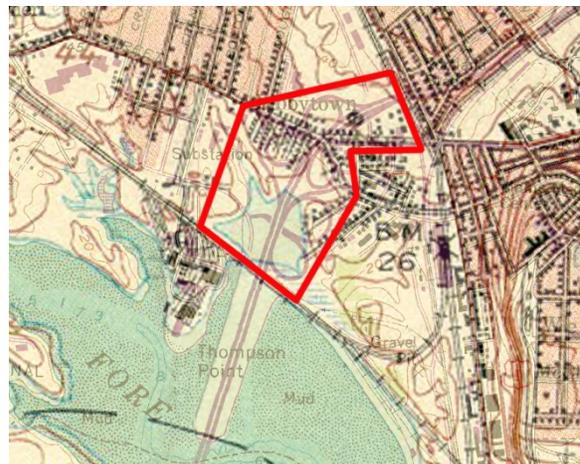
“The goal of the study is to comprehensively assess and make recommendations regarding the multi-modal transportation network, circulation pattern and supporting streetscape within the eastern portion of the Libbytown Neighborhood.”

Libbytown Streetscape and Traffic Circulation Study RFP-2012

The following are priorities for this study.

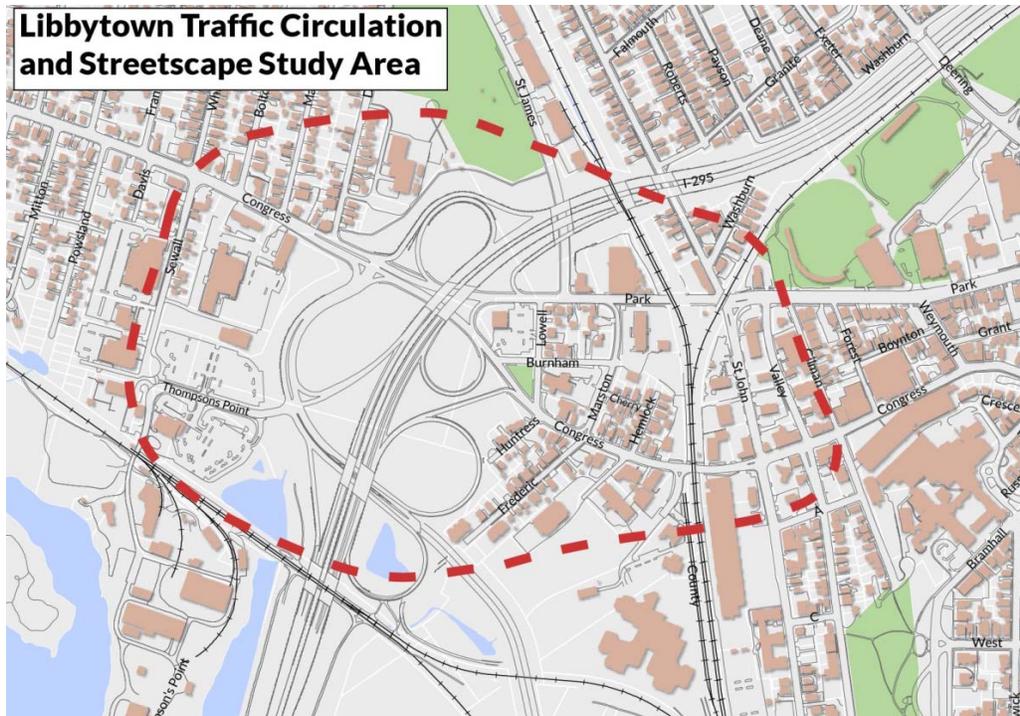
- Build on the work in *Connecting Libbytown*, to improve neighborhood connectivity and function for all modes and users.
- Consider the opportunities to re-think traffic circulation arising from the completion of the Fore River Parkway.
- Create a more attractive, inviting and accessible streetscape.
- Identify investments that will support economic development and growth that is compatible with the community’s vision and viable (with Portland Planning Department staff).

Libbytown in Transition



Libbytown Study Area

The primary study area for the traffic circulation and transportation components is shown in the map below. However, considerations of stakeholders and traffic impacts from a broader impact area will be included in the study.



Baseline Conditions Assessment

The Libbytown study area was evaluated for its transportation, safety and streetscape features and conditions. The following sections provide a summary of the key findings of this inventory.

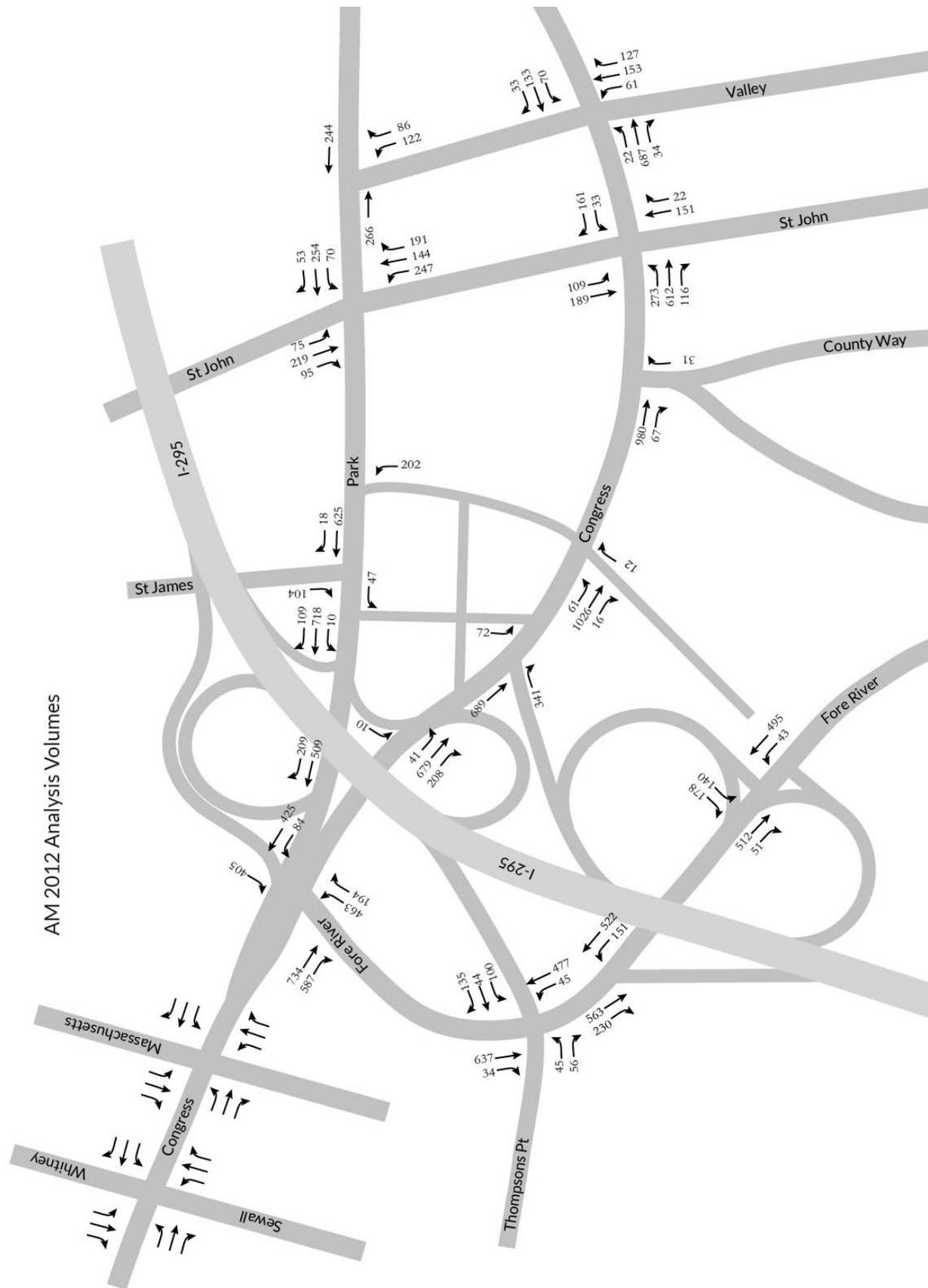
Traffic Circulation and Safety

The traffic analysis began with a review of available data and observations by the consulting team and included volumes, operations and safety.

Traffic Volumes

Traffic volumes were obtained through a variety of sources, including Maine DOT, recent traffic studies and reports, and collection of new data where required. Pages 3 and 4 show the morning and afternoon peak hour traffic movements in the study area. (Morning peak volumes from Massachusetts and Sewall intersections with Congress Street is forthcoming).

In addition to determining current traffic volumes, the changes in traffic volumes since the completion of the Fore River Parkway in 2008 was evaluated. The charts on page 5 compare volumes on each leg of the Congress/St. John and Park/St John intersections from 2007 (before construction of Fore River) with recent MDOT data (2010) and the most recent counts conducted by DuBois & King in October, 2012. These charts show general consistency between 2010 and the present, but a significant reduction in the volume on St. John, Park and Congress Streets since 2007.



AM 2012 Analysis Volumes



PM 2012 Analysis Volumes



The October 2012 traffic counts included bicycles and pedestrians, and the data is summarized in the table below.

Intersection	Pedestrians		Bicycles	
	AM (7 to 9 a.m.)	PM (3 to 6 p.m.)	AM (7 to 9 a.m.)	PM (3 to 6 p.m.)
Congress/St John	47	150	4	16
Park/St John	54	161	12	44

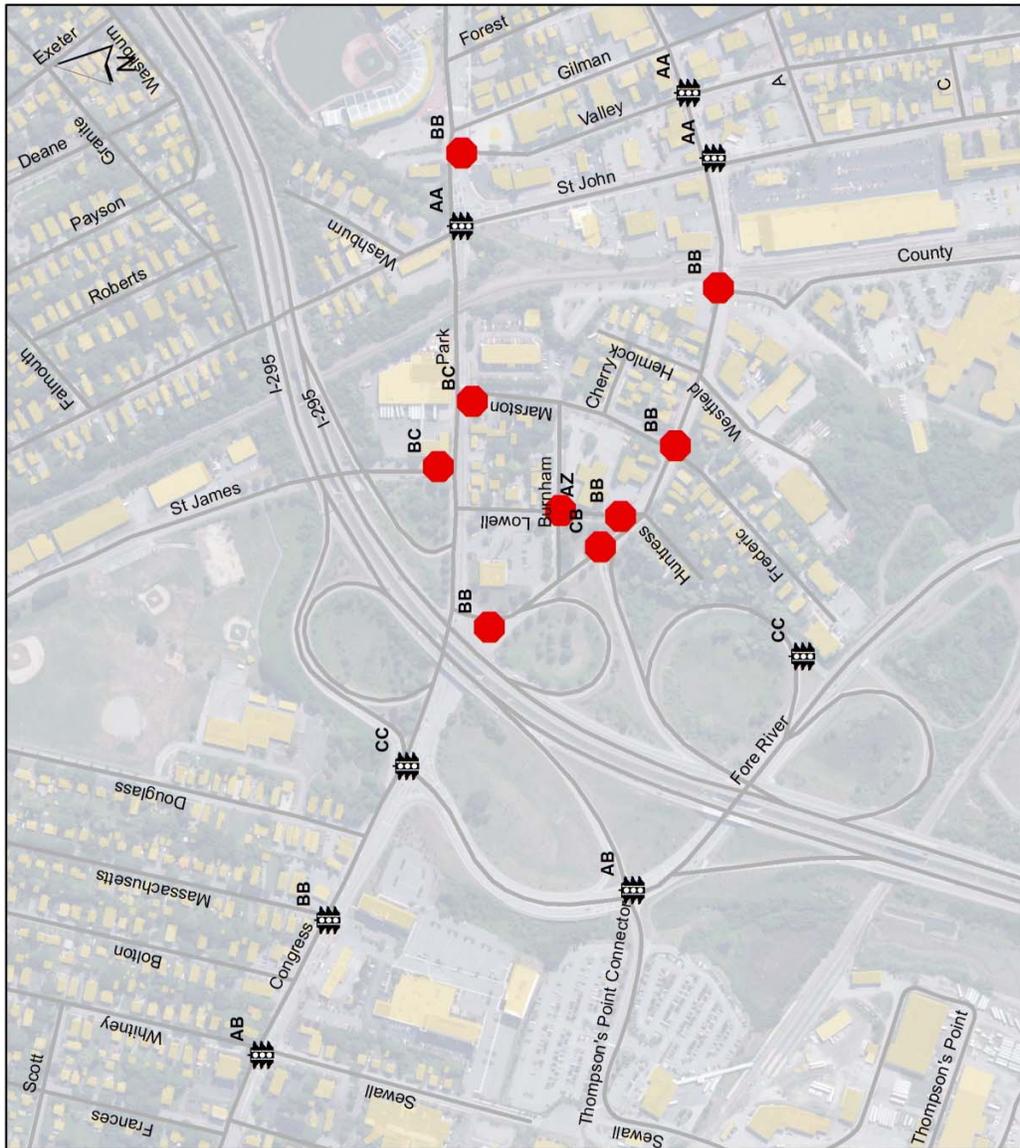
During the counts, numerous instances of wrong way bicycle travel on Park Street was observed, which may indicate that is viewed as preferable to right-way travel on Congress Street. Rainy weather during the morning peak hour may have contributed to lower bicycling during the count.

Traffic Operations

Using the above turning movement traffic counts, an analysis of intersection level of service was conducted for the morning and afternoon peak hour. Level of service is a grade rating of A through F to indicate the level of congestion for an intersection or roadway. In an urban downtown area, peak hour levels of service of D or E are generally considered acceptable.

In the Libbytown study area, traffic levels of service (LOS) in the study area range from A through C during the peak hour, as shown on page 6. These are high for a central urban area, and indicate that traffic congestion is not a significant problem for transportation in the study area.

The analysis also indicates that the intersection of Fore River Parkway and Congress is the most critical in terms of Volume/Capacity ratio. This situation is exacerbated due to the lack of street connectivity and alternate routes in the area, which has the effect of concentrating traffic at this location.



PEAK HOUR LEVEL OF SERVICE AT INTERSECTION

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- Legend**
- Signalized
 - Unsignalized
 - Level of Service
 - AM Peak PM Peak

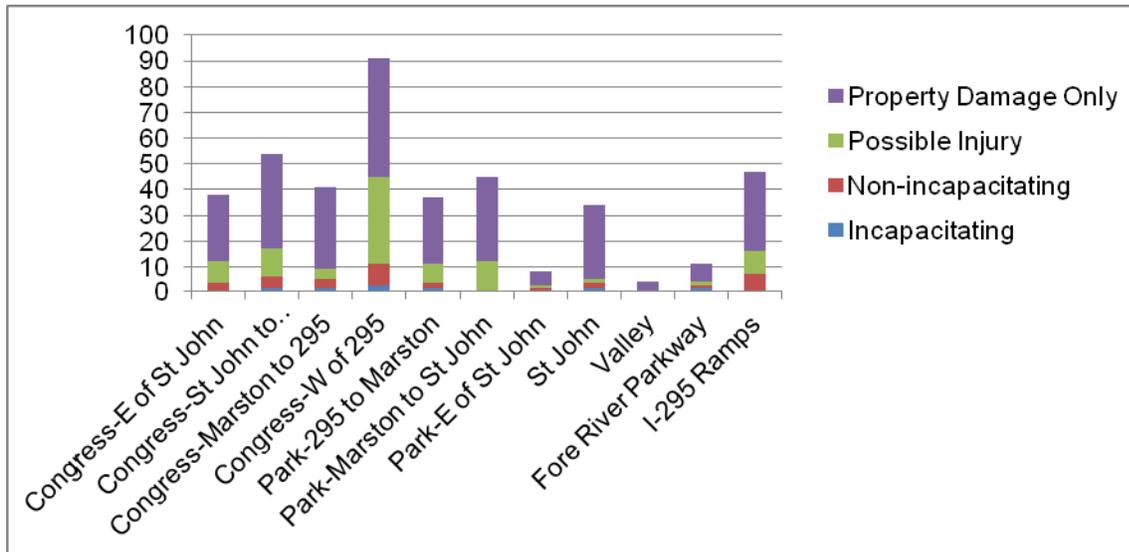
DuBois & King inc.

ANSOM
Consulting Engineers and Scientists

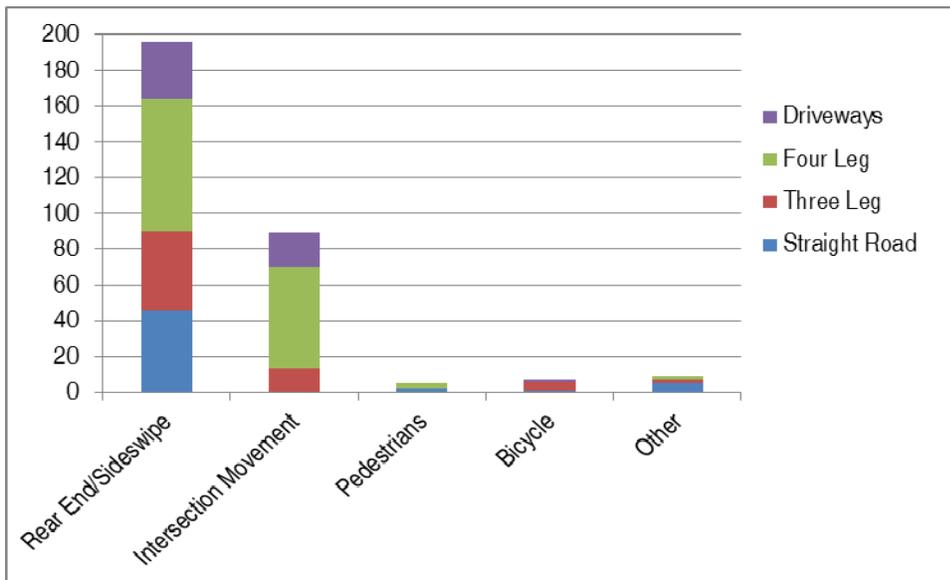
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Safety

The Maine DOT maintains records of vehicular crashes, and has provided this data for the years 2009 through 2011. An analysis of this data indicates that there are numerous street segments in the study area that are “High Crash Locations” shown on the map on page 8. The following table summarizes the total crashes in the study area.



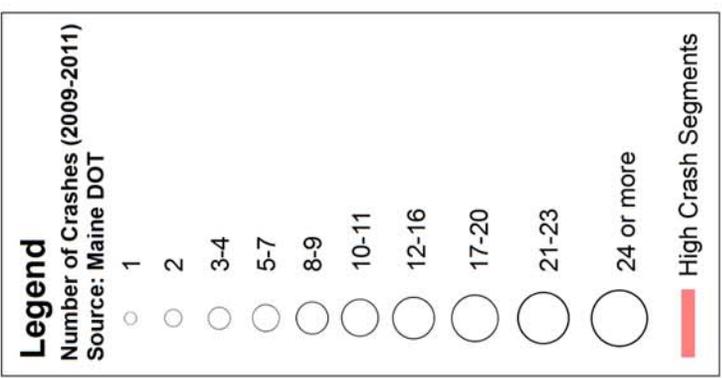
This data indicates that Libbytown’s street network is not functioning in a safe manner for vehicular traffic. Of particular concern for this study are the segments of Congress, Park and St John Street east of I-295, as the *Outer Congress Street Study* addressed the safety concerns of Congress west of 295. The chart below types of crashes on Congress, Park and St. John Streets.



The crashes are predominantly associated with intersections, and the prevalence of rear-end crashes indicates that high speeds and “stop and go” movements are typical, rather than a slower but steady traffic flow.



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Crashes and High Crash Locations



DuBois & King inc.

RANSOM
Consulting Engineers and Scientists

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Pedestrians

The pedestrian network was assessed for the coverage and condition of sidewalks, curb ramps, crosswalks, and street lighting. The key findings are reviewed in the following sections.

Sidewalks

Sidewalk conditions in Libbytown are highly variable, as indicated in the map on page 11. The sidewalks were classified as follows:

- **adequate** (good condition, minor cracks, provide adequate separation from vehicles),
- **marginal** (moderately deteriorated, difficult for mobility impaired people to travel comfortably)
- **inadequate** (deteriorated, uneven or discontinuous, not protective of pedestrians, not accessible)
- **nonexistent** (gaps in sidewalks were noted where they end abruptly)



Deteriorated Sidewalks and Lack of Connectivity on Fredric Street.

The following list highlights areas that impede the function of the pedestrian network as a whole:

1. **Sewall Street:** Although substantial improvements have recently been made, the sidewalks along Sewall Street are circuitous and discontinuous.
2. **Bolton Street at Congress:** Sidewalks are in poor condition, utilities create obstacles and there is no clear delineation between pedestrian and vehicular space.
3. **Saint James Street, East Side:** Traveling from Park Avenue, this sidewalk becomes progressively narrower before terminating under the I-295 overpass.
4. **Granite Street:** Granite Street has the potential to connect the Oakdale and USM Neighborhoods to Libbytown by way of Saint John Street, but it has no sidewalks between Roberts and Saint John Streets.
5. **Saint John Street:** The western sidewalk is in very poor condition from the I-295 overpass to Park Avenue. The eastern sidewalk from Park Avenue to Congress Street has excessively large curb cuts and pinch points created by utility poles.

6. **Congress Street:** The southern sidewalk between Westfield and Saint John is deteriorated and discontinuous.
7. **Saint John Street:** The eastern sidewalk from Congress to A Street is very deteriorated which makes it difficult for mobility challenged persons to get to the adjacent Greyhound bus station.

Pedestrian Crossings

Pedestrian crossings were given one of the following 3 overall safety ratings, also shown on page 11:

1. **Adequate:** Signalized or unsignalized crossings that give pedestrians a sense of safety and protection, where pedestrians are not likely to be discouraged from continuing on to their destination. Road geometry discourages high speed turns and vehicle speeds allow eye contact between drivers and pedestrians.
2. **Marginal:** Crossings that leave pedestrians more exposed to faster vehicles, where more timid or less mobile pedestrians may go out of their way to a safer crossing. Road geometry allows higher speed and does not require a vehicle to slow down when turning. While concurrent pedestrian signalization has great potential to provide safe and convenient pedestrian crossings, most of the concurrent phase pedestrian crossings observed fell into this category due to conflicts with turning traffic.
3. **Unsafe:** These crossings discourage pedestrians from walking to their destination. Road geometry encourages high speeds and high speed turns, and the design suggests that vehicles have the right-of-way. Multiple and/or high speed travel lanes may create a situation where drivers feel they are putting *themselves* in danger by stopping for a pedestrian in a crosswalk. The majority of unsafe crossings are clustered around the one-way sections of Park Avenue and Congress Street. This one-way pair and the uncontrolled on and off ramps associated with I-295-Exit 5 create a substantial barrier for pedestrian travel between Outer Congress Street and the Portland Peninsula.

The curb ramps were also rated for their adequacy and accessibility, and are shown on page 11.



The slip Lane from Congress onto Marston Street allows vehicles to maintain high speeds when turning. Note the lack of pedestrian facilities for this person to proceed inbound on Congress Street.



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Legend	<ul style="list-style-type: none"> ADEQUATE no DWP ADEQUATE w/ DWP INADEQUATE NON-EXISTENT Pedestrian Accident Location 	Lighting Quality	<ul style="list-style-type: none"> Adequate Marginal Inadequate Unsafe
		Sidewalk Condition	<ul style="list-style-type: none"> Good Fair Poor



Bicycles

The study area was assessed for the environment provided for bicycle transportation. There are a variety of types of bicycle facilities which appeal to different levels of skill and confidence, so this review includes both trails for riders of all ages and abilities, and on-street lanes, which are more appealing to highly skilled and confident bicyclists. The map on page 13 shows the locations of bike routes, hazardous areas, and vehicular crashes involving bicycles.

Trails

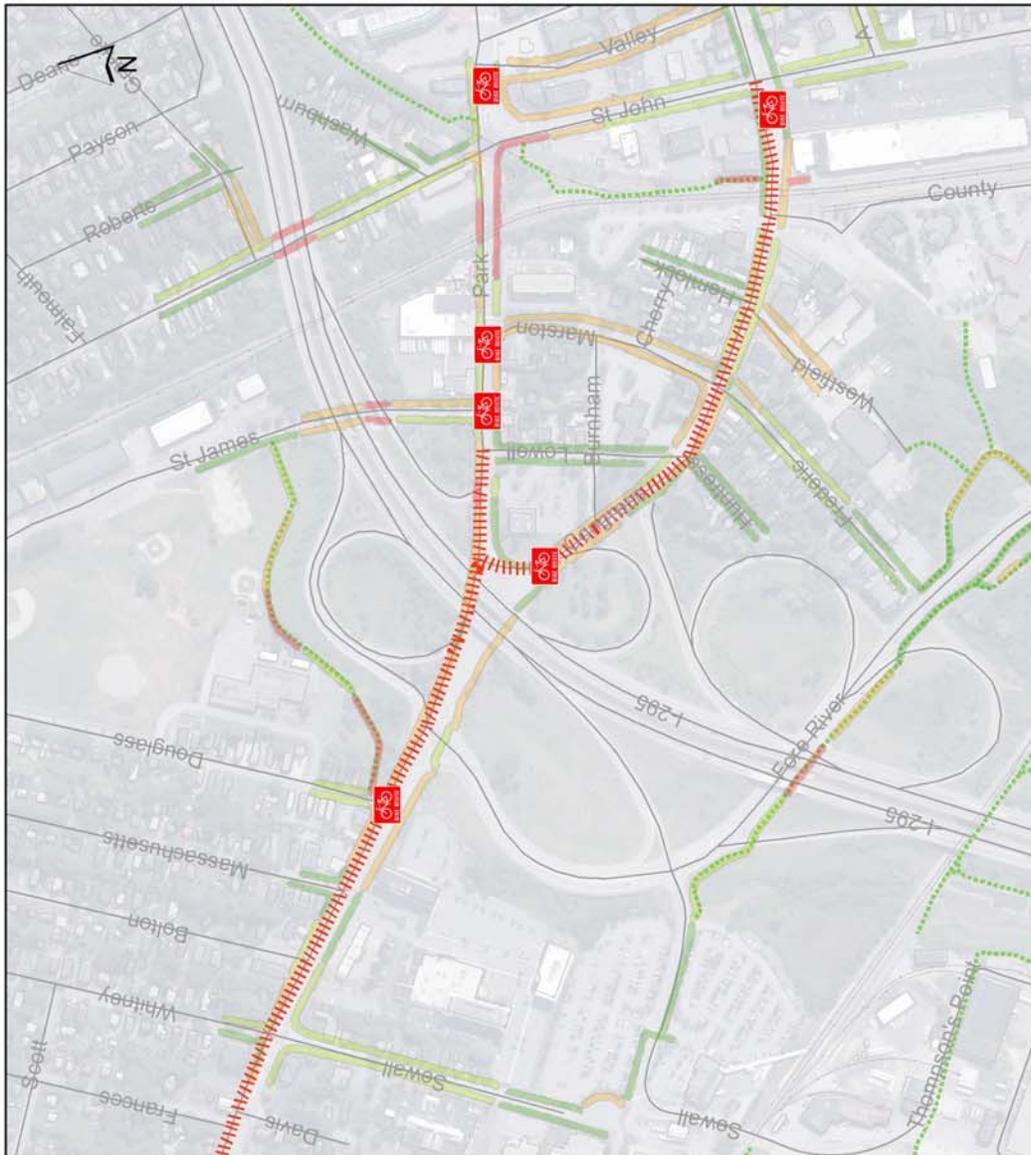
There are two paved multi-use trails in the study area. The first runs from Saint James Street, along Dougherty Field to Douglas Street. The surface is deteriorated, the trail is poorly lit and is lined by a chain link fence which blocks access to Congress Street. The Fore River Parkway Trail runs from the Portland Transportation Center to Veterans Bridge. This trail in good condition, well lit and will greatly benefit from improved connectivity provided by the proposed at-grade crossing of the Fore River Parkway at Fredric Street. At the limits of the study area, formal trail systems are maintained on Thompson's Point and in the Mercy Hospital area.

The study area also contains a number of informal trails. These include a path between Thompson's Point and the Fore River Trail along the Mountain Division railroad corridor, a path along the Union Branch railroad corridor from Congress Street to Hadlock Field (and eventually Deering Oaks) as well as a path along the alignment of the future railroad wye from The Fore River Parkway Trail to County Way. Informal trails, often called "desire lines," provide clues as to where people are currently traveling and may be helpful in determining the transportation needs of the community.

Roadway Bicycle Conditions

The only dedicated bicycle facility in the study area is an isolated bike lane along Park Avenue, beginning at Saint John Street and ending just before the I-295 overpass. There is no parallel bike lane on inbound Congress Street. Conditions east of Saint John Street are more inviting to cyclists due to lower vehicular speeds within the intact street grid on the Portland Peninsula. Sewall Street, the PTC campus and the Fore River Parkway Trail provide a reasonable route but it does not connect well with Congress Street. The Fore River Parkway itself provides fairly good biking although conditions deteriorate significantly as one approaches the Congress Street intersection.

The biking conditions on Congress Street and Park Avenue between the Fore River Parkway and Saint John Street are inadequate and unsafe. The one-way sections of these roads were designed as an extension of the I-295 Exit 5 interchange, and function poorly for other modes of transportation. The multiple lanes, road geometry, and lack of traffic control where Congress and Park intersect highway ramping encourage vehicles to maintain high speeds and weave through the area creating hazardous conditions for cyclists. The most hazardous area appeared to be on Congress Street in the vicinity of Lowell Street due to vehicles entering from the I-295 off ramp and the addition of a third travel lane on Congress Street. Although biking conditions on the side streets were considerably better, they do not provide a complete alternate route, and are offset by the poor conditions on Park and Congress.



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BICYCLE/TRAIL CONDITIONS

Legend

- Cyclist Accident Location
- Hazardous Bike Routes
- Portland Trails

Lighting Quality

- Adequate
- Marginal
- Inadequate
- Unsafe





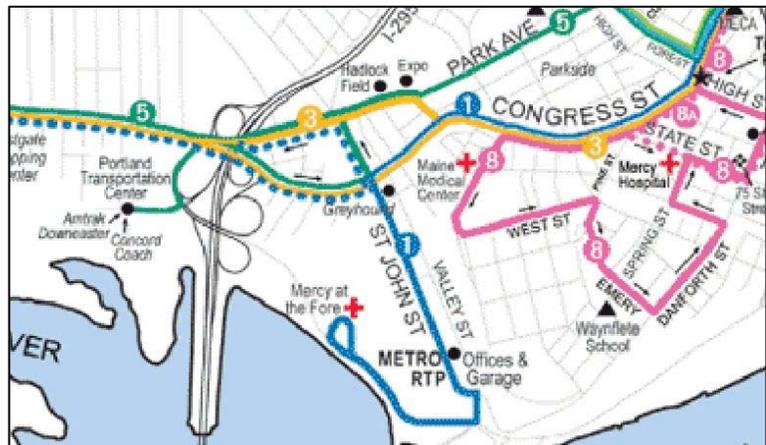
The Fore River Trail makes an important connection to the Portland Transportation Center



Inbound Congress Street Traffic is dangerous and intimidating to cyclists and pedestrians.

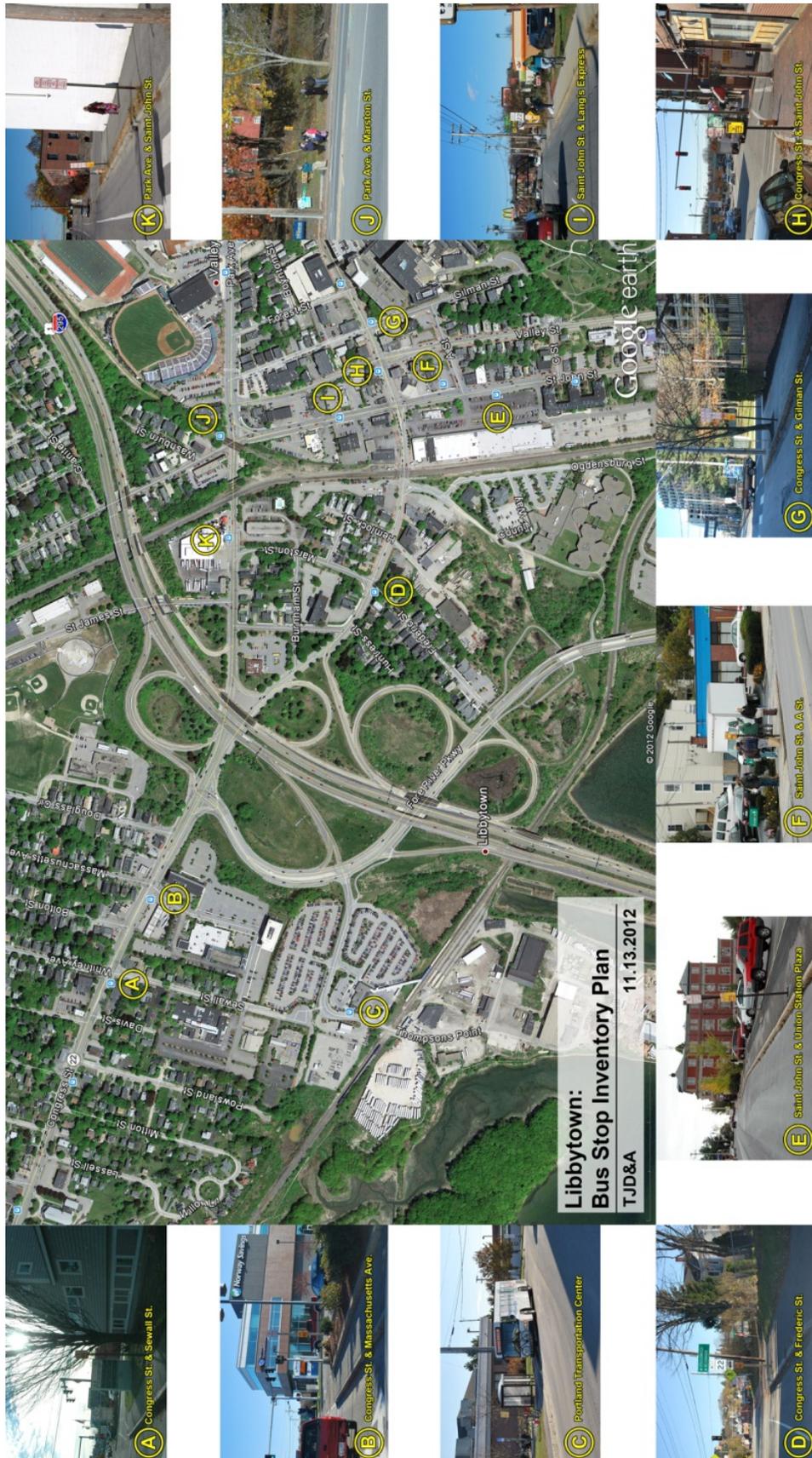
Transit

The location of the Portland Transit Center results in transit routes that are concentrated on the Congress/Park corridors, as shown on the excerpt from the system map, to the right. There are several stops in the study area where transfers and connections to the Greyhound system occur, making them especially busy.



The transit stops are shown in the map on page 15, along with photos of each stop. Even though some of the stops are quite busy with passengers waiting to board, there are no shelters, benches, or other amenities. As indicated above in the discussion of pedestrian conditions, street lighting and pedestrian accessibility to the transit system is poor in many locations in the study area. Crossing and accessible curb ramps are not present at each transit stop. The figure below is a photosimulation of a shelter provided at one of the busier transit stops.





Placemaking

*There is an incredible richness of opportunity for community interaction. What is missing is the sense of community identity and the accompanying infrastructure to tie these assets into a strong neighborhood center. **Libbytown Streetscape and Traffic Circulation Study RFP***

Libbytown is a unique and diverse area, with a great deal of economic importance and activity. There is even greater potential, due to its convenient and accessible location. Among the key features of Libbytown's development environment include:

- Great variety of businesses, a vibrant business district
- Scattered residential neighborhoods on quiet side streets
- Parks and trails "hidden in plain sight" or nearby (with connection between Frederic St and Fore River Trail)
- Highly accessible location for cars, less so for other users, but lack of an identifiable "center"
- Inconsistent development patterns and eclectic architecture has not resulted in a coherent look and feel or identity.

Development opportunities in light of the possible reduction of the I-295 Interchange footprint, as well as reconfiguration and potential narrowing of Congress and Park Streets, should be considered as alternatives are developed.

Draft Purpose and Need Statement

The purpose of this project is to support the creation of a cohesive and livable neighborhood in Libbytown by:

- improving safety and connectivity for all users of the area's transportation network,
- improving the business and economic environment with better traffic circulation, easier access, and higher visibility, and
- creating a more attractive and inviting streetscape and neighborhood.

The needs exist due to high crash rates on the street network, and unsafe and unwelcoming environment on many streets for pedestrians, bicyclists and transit users, and an inconvenient one-way traffic circulation system that does not support local business accessibility.